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## ARE OWNERSHIP RENT AND PURE PROFIT SEPARATE RETURNS TO THE ENTREPRENEUR?

JOSEPH T. SALERNO

**ABSTRACT:** Murray Rothbard developed the concept of decision-making rent as a return to a kind of unhirable labor performed by the entrepreneur in his role as owner and ultimate decision-maker of the firm. Rothbard conceived owner's rent as separate from profit and loss and the decision-making function as concerned with productive organization and technique, which is distinct from the function of forecasting uncertain future market conditions. Vlad Topan (2012) disputes Rothbard's position and contends that ownership rent does not exist because decision-making ability is meaningless in the absence of uncertainty. In this paper, I argue that Topan's critique rests on fundamental misconceptions about the nature of entrepreneurship in Austrian economics.

**KEYWORDS:** decision-making ability, decision-making rents, ownership function, entrepreneurship, firm

**JEL CLASSIFICATION:** D20, D21, L20, L21, L26

Vlad Topan's "Note on Rothbardian Decision-Making Rents" (2012) is a welcome and thoughtful addition to a neglected topic in the Austrian theory of entrepreneurship: what Murray

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Rothbard (2009) has dubbed the “decision-making” or “ownership” function of the capitalist-entrepreneur. This productive function had been recognized and discussed by Carl Menger, Eugen von Böhm-Bawerk, and Ludwig von Mises before Rothbard. Unfortunately, after the publication of *Man, Economy, and State* in 1962, the concept dropped out of the Austrian literature until the present author traced out the development of this concept in Austrian writings in his article, “The Entrepreneur: Real and Imagined” (Salerno, 2008).

The main thrust of Topan’s note is to deny Rothbard’s claim that there exists a specific form of income that is a return to the ultimate decision-making function of capitalist-entrepreneurs as property owners and is separate and distinct from their interest return as capital-investors and pure profit (or loss) return as entrepreneurial uncertainty bearers. In particular, Topan disputes Rothbard’s claim that the ownership function and its correlative income of decision-making rent has any place in the equilibrium conditions of the evenly rotating economy (ERE).

Despite the great degree of care and ingenuity that Topan puts into constructing his case, I believe that it rests on two fundamental errors.

First, Topan conflates Mises’s imaginary construct of the pure entrepreneur with what Mises (1998, p. 256) called the “entrepreneur-promoter” or simply “promoter.” The former, according to Mises (1998, pp. 253–254) is not a human actor but a single “definite function” that is embodied in “an imaginary figure” who is “propertyless” and whose only function is to bear risk. As such, for Mises the pure entrepreneur is a “methodological makeshift” designed to enable the economist to analytically isolate profit (and loss) from the interest earned on capital, both of which are inextricably bound together in the net income received by business owners and investors in the real world. In sharp contrast, Mises’s entrepreneur-promoter is a real actor who owns capital and puts it at risk by purchasing factors of production that he judges are undervalued relative to the prospective value of the future product they will yield. He is then obliged to efficiently combine these factors according to a technical plan in a time-consuming productive venture that he must oversee to completion. Indeed, Mises (pp. 254, 302) pointed out that it is not possible to think through the concept of a pure entrepreneur who owns no capital to

a logical conclusion and he explicitly warned against the “error” of confusing the pure entrepreneur with the entrepreneur “in a living and operating market economy.”<sup>1</sup>

Topan (2012, pp. 76–77), however, ignores the distinction drawn by Mises between the two types of entrepreneur and, at the outset of his note, selects six quotations from Mises’s and Rothbard’s works which, because they are presented out of context, emphasize uncertainty-bearing while either completely ignoring or downplaying the role of ownership in the definition of the entrepreneur. In addition, at least four of these quotations refer specifically to the pure entrepreneur as Mises defined the term. Thus, for example, Mises (1998, p. 254) is quoted by Topan (p. 76) as follows: “The term entrepreneur as used by catallactic theory means: acting man exclusively seen from the aspect of the uncertainty inherent in every action.” But in the sentence *immediately* before the sentence quoted by Topan, Mises referred to this one-dimensional delineation of the function of the entrepreneur as being embodied in “an imaginary figure” that is a “methodological makeshift.” Moreover, in the very next paragraph following the one containing the quoted sentence, Mises (1998, p. 254) carefully demonstrated that this “imaginary construction of a pure entrepreneur” involves a logical contradiction, because he owns no property and, therefore, bears no risk!<sup>2</sup>

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<sup>1</sup> Rothbard (1997, p. 249) recognized and adamantly rejected Mises’s concept of the pure entrepreneur, “which treat[s] the entrepreneur as an entirely separate entity, and not just as the forecasting aspect of the activities of the capitalist or laborer.” In his own treatise, Rothbard (2009, p. 510) avoided the construct when analyzing the nature and causes of profit as a return to the function of uncertainty-bearing and spoke of “the active entrepreneurial element in the real world [that] is due to the presence of uncertainty.” Rothbard (2011, p. 285) also noted that Israel Kirzner’s conception of the pure entrepreneur, who owns no capital and earns profits essentially by arbitraging price differences, finds “a certain amount of textual justification in Mises.”

<sup>2</sup> As Mises (1998, p. 254) described him,

This [pure] entrepreneur does not own any capital. The capital required for his entrepreneurial activities is lent to him by the capitalists in the form of money loans.... Nevertheless, he remains propertyless for the amount of his assets is balanced by the amount of his liabilities. If he succeeds, the net profit is his, if he fails the loss must fall upon the capitalists, who have lent him the funds. Such an entrepreneur would, in fact be an employee of the capitalists who speculates on their account and takes a 100 per cent share in the net profits without being concerned about the losses.

The second quotation that Topan (76–77) draws from Mises (1998, p. 288) likewise refers to the pure entrepreneur and *not* the entrepreneur-promoter:

Like every acting man, the entrepreneur is always a speculator. He deals with uncertain conditions of the future. His success or failure depends on the correctness of his anticipation of uncertain events. If he fails in his understanding of things to come, he is doomed. The only source from which an entrepreneur's profits stem is his ability to anticipate better than other people the future demand of consumers.

In the paragraph immediately preceding the one in which this passage appears, Mises (1998, p. 288) made it clear that he was here focusing exclusively on entrepreneurial profit and loss and how changes in the data bring about differences between the selling prices of products on the one hand and the sum of the prices of their factor inputs on the other. At the same time, he explicitly abstracted from how such changes “affect the sellers of labor and those of original nature-given factors of production and of the capitalists as money-lenders.” In other words, Mises was once again describing the pure function of entrepreneurship and not the integral, flesh-and-blood entrepreneur. Likewise, in two of the three passages that Topan (p. 77) quotes from Rothbard, Rothbard is clearly referring to the *function* of “entrepreneurship” or what he calls the “active entrepreneurial element” and not to the real property-owning capitalist-entrepreneur.

Topan's first error leads to and is compounded by a second error. Jumbling up two different concepts of the entrepreneur at the start of his note and overemphasizing the single function of uncertainty-bearing predisposes Topan to ignore the distinct decision-making function that is inextricably bound up with the choice of the organization and technical combination of heterogeneous capital goods and labor factors, particularly management. Thus Topan (p. 79) argues:

Specifically, by introducing this additional distinct function of ownership and its subsequent (supplementary) form of remuneration/income, [Rothbard] ends up separating—something considered as a shortcoming in Kirzner—ownership from entrepreneurship. If this is not so, and if it is still the ownership function that also receives the profit/loss residuum, then we have a function with two incomes, a situation which violates the

“one function—one income” principle implied in the theory of distribution. Not to mention the emptying of the catallactic function of the entrepreneur, that would remain without an income share.

This assertion betrays Topan’s single-minded focus on the *function* of the disembodied pure entrepreneur to the exclusion of the real person of the capitalist-entrepreneur who embodies a number of conceptually distinct “catallactic functions.” For Rothbard and Mises the “one function—one income principle implied in the theory of distribution” is not violated by recognition of a decision-making rent that accrues to the entrepreneur *qua* property owner. Nor does Rothbard, *a la* Kirzner, “separate ownership from entrepreneurship” by identifying a separate property-owning function, as Topan (p. 79) claims. For all three functions of the capitalist-entrepreneur involve property. The capitalist function is *advancing property* in the form of wages and rents to the factors of production; the specifically entrepreneurial function is choosing the factors and allocating them to the production of *property in definite forms that are anticipated* to facilitate the achievement of ends chosen in light of forecasts of uncertain future market conditions; and the decision-making or ownership function involves *supervising and organizing the various elements of productive property* into a coherent structure of means, i.e. the firm, according to known techniques in order to achieve the chosen ends in the most efficient way possible.

Let us clarify the argument by analyzing the concrete data that must inform the analysis of the functions and corresponding incomes of the capitalist-entrepreneur. Indeed, by noting that some entrepreneurs earn profits while others suffer losses, Topan implicitly recognizes that it is a datum of everyday experience and of human history that people differ greatly in their capacities to anticipate and adjust their actions to changes in the world that affect their ends and means. Without inserting this subsidiary empirical postulate into the chain of praxeological reasoning, it would be impossible to account for the fact that some individuals are better entrepreneurs than others.<sup>3</sup> Topan presumably would agree too

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<sup>3</sup> As Mises (1998, p. 256) put it, economics must take into account “the promoter concept” because “it refers to a datum that is a general characteristic of human nature.... This is the fact that various individuals do not react to a change in conditions with the same quickness and in the same way.... There are in the

that praxeology must recognize the obvious fact that people have different time preferences and therefore that they save and invest different proportions of their incomes, accumulate greater or less capital and receive unequal amounts of interest payments in the real world and in the ERE. Topan would also surely grant that economic theory must proceed on the empirical observation that individuals vary in their skills, aptitudes, energy, motivation, and productivity with respect to different types of labor and therefore receive unequal wage rates in the real world and that such wage inequalities would persist in the ERE.

Topan inexplicably seems to balk, however, at incorporating into economic theory the mundane observation that business owners differ markedly in their levels of technical knowledge, mental and physical energy, clarity of memory, strength of purpose, supervisory abilities, communications skills, aptitude for calculating and interpreting financial data, etc. But surely these differences affect the quality of the decisions capitalist-entrepreneurs make in choosing and combining the concrete elements of their property into an integrated structure of means in order to achieve their ends, even if they all correctly forecast the value of these ends. It is these qualities that cause people to differ in what Rothbard (2009, p. 602) calls “for want of a better term... the *decision-making function* or *ownership function*.” As this function is described in the long passage Topan (2012, pp. 78–79) quotes from Rothbard, it is clear that it has nothing to do with uncertainty *per se*. Rather it deals with the ultimate technical, supervisory, and organizational decisions that a capitalist-entrepreneur alone must make with respect to the disposition of his productive property. It may help to clarify this concept by describing it in the familiar context of everyday life before addressing it in a business environment.

Suppose that someone is throwing a large party with a certain theme and ambience that she *anticipates* would greatly please her guests. She has formed a creative overall vision of the prospective party—the future “product” or end—and is aware of the concrete means necessary to realize her vision. But to prepare for the party rationally and efficiently, the hostess must use her

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market pacemakers and others who only imitate the procedures of their more agile fellow citizens.”



*existing* knowledge, skills, and abilities in many diverse areas: menu selection; food preparation, including both the knowledge of recipes *and* the skills to execute them; selection of wines and other beverages that complement the meal; location, layout, and decoration of the “space” for the party; the timing of the food and beverage service; the music that best comports with the guests’ diverse tastes and with the theme of the party; the optimum number, selection, and seating arrangement of guests; the suggested dress; the crafting of attractive and informative party invitations and so on. The hostess also must attend to mundane matters like the sufficiency of bathroom facilities and toilet items, the adequacy of parking, and the proper sequestering of her children and pets.

In addition the hostess must actively supervise and make continual decisions relating to the coordination of the overall “flow” of the party as it proceeds, whether or not she *decides* to “outsource” one or more tasks to a party planner, caterers, a professional DJ, or bartender. These hired “managers” do not spontaneously coordinate their actions with one another and with the hostess’s overarching plan for the party. Moreover, she requires the interviewing skills and psychological insight necessary to accurately assess the technical competencies and work ethic of the personnel she is considering, as well as the leadership skills to motivate those she hires to engage with her in realizing her vision for the party.

To take a simple example, the party would turn out very differently depending on whether the hostess: suffered from a chronic illness and needed to take a nap midway through the party; were prone to overindulging in alcoholic beverages; were easily flustered by mishaps; or were healthy, vital, resilient and remained alert to every aspect of the party.

The point is that given the same resources and using the same standard of success, parties hosted by different people with varying knowledge, skills, aptitudes, capacities for mental focus and physical stamina would vary in success, *even if they all could foresee exactly how the party would turn out as a result of their decisions*. In other words, the variations in success of different hostesses need not be due exclusively to uncertainty-bearing, that is, anticipating and visualizing guests’ reactions to the theme and ambience of party; they may just as well be caused by disparities in their “ultimate decision-making ability” as owners of property.

We may even extend our fanciful party example to the ERE. Individuals of given but different decision-making abilities would host parties at regular intervals, purely as social events and not for monetary gain. Each would throw the same parties over and over again and the regularity of their purchases of party supplies would not upset market supply and demand conditions.<sup>4</sup> They would all know the future perfectly but some would be renowned as great hosts or hostesses, others as relatively inferior ones. However, all those who host dinner parties would of course enjoy a surplus of satisfaction gained over satisfaction sacrificed in the foreclosure of other consumption opportunities to use the resources devoted to the party. As with spending on all consumption activities, the marginal utility of the end chosen would exceed that of the end foregone. Furthermore, these psychic “rents” to party hosts would persist in the ERE, although there would be no monetary or other objective expression of them and no method of comparing their magnitudes between different people.

What is true of owners of property in the service of extra-catalactic ends is also true of business owners. Now, given that the differences in decision-making abilities among individuals in household and business activities are a datum of human

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<sup>4</sup> There is nothing preventing economists from extending the ERE to an analysis of household activities because it is a mental construct of their own making. As Mises (1998, p. 248) pointed out, the ERE is consistent with many different assumptions so long as they do not disturb supply and demand conditions. Thus, he wrote, “Only such change as do not affect the configuration of price-determining factors may be considered in its [the ERE’s] frame.... We are free to assume that infants are born, grow old, and finally die, provided that total population figures and the number of people in every age group remain constant.” Elsewhere Mises (2003, p. 16) remarked:

A theory of action could conceivably be constructed on the assumption that men lacked the possibility of understanding one another by means of symbols, or on the assumption that men—immortal and eternally young—were indifferent in every respect to the passage of time and therefore did not consider it in their action. The axioms of the theory could conceivably be framed in such universal terms as to embrace these and all other possibilities.... *We forgo these possibilities because conditions that do not correspond to those we encounter in our action interest us only in so far as thinking through their implications in imaginary constructions [e.g., the ERE] enables us to further our knowledge of action under given conditions.* [Emphasis added.]

action—although these abilities admittedly may develop over time in the real world of change as a result of practice, experience, or formal instruction—we are free to assume that they exist and are frozen in the ERE. In business, the differential monetary rents to decision-making ability derive especially from owners' organizational skills, technical knowledge and psychological insight although more mundane qualities such as health, physical energy, and aptitude for financial calculation may also affect such rents. Surely these personal qualities influence how successful the owner of the firm is in organizing and adapting the diverse yet complementary elements of his property to his entrepreneurial forecasts of future market conditions. Furthermore, the owner is unable to *divest* himself of the ultimate decision-making function even if he delegates most or all decisions about technology, organization and personnel to hired managers and technicians. This is not to deny, of course, that to the extent that the owner performs routine technical or straightforward managerial tasks that can be performed by hired labor, he is functioning as a pure laborer rather than as an owner making ultimate decisions about his property and is earning normal wages rather than special ownership rents.

In a neglected article published in 1935, M. M. Bober (1935) presented an enlightening discussion of the entrepreneur-owner's crucial and undivestible function, while recognizing that it would continue under static conditions and earn a rent. Bober's aim in the article was to connect the short-run and long-run analysis of the size of the firm and explain the U-shape of the long-run average cost curve by identifying the factor that remained fixed even in the long-run. This factor was the ultimate decision-maker or the "entrepreneur," whom Bober (1935, pp. 81, 83) characterized as the "fixed factor at the apex of the whole structure" of the firm whose "personality and... power [becomes] diffused over a wide area" as the firm grows in size. Bober continued:

That some managerial operations can be delegated admits of no doubt; but there remains a solid substratum of activities that must emanate from one final source of authority and responsibility, and not only under dynamic conditions but under static conditions as well.... Officers and foremen die or resign, and new ones are to be selected; security issues mature, and the problem of financing reappears; short-term loans are recurrently made, and dealings with bankers are involved.... There is also the important problem of supervision, and the greater the differentiation

and delegation of powers the more vital is the problem. Furthermore, it is difficult to assume that the bearer of final responsibility can afford to play hide and seek with static conditions, disappearing from the scene or relaxing in the tasks while static conditions prevail, and assuming the helm only when the industry is undergoing alterations.

Bober (1935, p. 83) also saw that entrepreneurs of “infra-marginal” firms earn differential rents depending on their abilities and these rents exceed the rent that “will suffice to attract into the industry the marginal entrepreneur.”<sup>5</sup>

Let me now turn to an analysis of Topan’s specific critique of Rothbard’s concept of decision-making rents. Citing several passages from Rothbard’s work, Topan (2012, p. 80) comments, “Rothbard seems to assimilate... the income of decision-making to a type of wage, and to view decision-making ability as some sort of labor.” But Topan (2012, pp. 80–81) notices a “tension” in Rothbard’s use of the concept. The tension arises, according to Topan, because on the one hand, decision-making is “logically antecedent” to labor but on the other it is a “special type of labor” requiring “some unique ability or talent.” But I suggest that this tension is merely semantic and not substantive. In suggesting a name for the function, Rothbard (2009, p. 610), as we saw, was not completely comfortable with the term “decision-making,” prefacing his suggestion with “for want of a better term,” and then offering “property-owning” as a possible alternative designation. Furthermore, in the passages that Topan (2012, pp. 82–83) cites as evidence to support his point, Rothbard repeatedly and clearly characterizes the decision-making function as “a certain kind of labor,” “an attribute of a labor factor” and the return to this factor as “wages of decision-making.” Viewed in context, there is no tension in Rothbard’s concept of the decision-making function. It is a unique kind of labor factor that is not separable from property ownership and therefore can never be hired.<sup>6</sup> In contrast to hireable

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<sup>5</sup> Unfortunately, Bober (1935, pp. 83–84) was under the influence of the perfect competition doctrine. And, although he did recognize the distinction between static and dynamic conditions, he mixed up profit and decision rent. He also treated the latter as a cost to the firm just like differential rents to hireable factors, despite the fact that he seemed to discern that the ultimate decision-making function was unhirable.

<sup>6</sup> Topan (2012, p. 85) is therefore simply wrong in his claim that Rothbard rejects the idea that the decision-making function is “a special subcategory [of labor], special

labor, technically it has no market and, hence, no implicit wage, which is why Rothbard (2010, pp. 602–603) formally dubs its return a “rent” rather than a “wage.”<sup>7</sup>

Topan raises an important point when he notes that, according to Rothbard’s analysis, the rent of any factor employed in production must be positive to induce its owner to participate in production. But what, asks Topan (2012, p. 84), is being rewarded by these positive rents when a firm’s owner *qua* entrepreneur suffers losses as a result of erroneous judgment of future market conditions? Does the decision *per se* generate a positive rent, even though it is an “uninspired decision” penalized by entrepreneurial losses? Topan answers in the negative and concludes that the Rothbardian concept of decision-making must imply “successful decision-making.”

As we saw above, however, for Rothbard, the owner’s “decision-making function” does not involve entrepreneurial decisions made under uncertainty. In fact, it is the application of a special type of labor, the oversight and stewardship of one’s productive property used by the owner or hired labor for a specific purpose. These decisions are not to be deemed *successful or unsuccessful*, but, like all “decisions” to expend labor of any kind, *better or worse* in terms of the physical quantity and quality of the product. In this sense, employing the same ingredients, recipe, cooking utensils, and kitchen appliances, my wife makes better “decisions” than I do in baking cookies. This outcome has nothing to do with uncertainty of the future but to existing differences between our baking skills. To extend the example to the market realm, a bakery owner deciding between employing me or my wife as a baker would need the technical expertise and insight to judge the *present* differential between our baking skills. If he hires my wife, his decision will generate higher owner’s rent than if he hires me.

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enough so that it deserves a separate and dedicated catallactic function, together with a form of income.” The passage in Rothbard (2009, p. 565) that Topan cites to support his claim clearly refers to the illicit distinction between the workers and the managers of the firm, both of whom are “hired by its owners.” (Emphasis added).

<sup>7</sup> Rothbard (2009, p. 559) draws the distinction between wage and rent as follows: “A *wage* is the term describing the payment for the unit service of a *labor* factor. A *wage*, therefore, is a *special case of rent*; it is labor’s ‘hire’.” (Emphases in the original.)

Topan's attempt to subsume the decision-making function and owner's rent under entrepreneurship and profit may be criticized from another angle. Suppose that due to gross technical ineptitude the owner of specific means of production is unable to bring his product to the market. For example, the bakery owner above hires a baker whose cakes fail to rise and cookies turn out too hard to chew and the output is disposed of as waste. Surely in this case the failure is purely technical and there would be no question of earning a profit or loss because there is no product supplied on the market and entrepreneurial forecasting does not enter into the matter.<sup>8</sup>

Topan (2012, pp. 84–85) further argues that supposing that rents, like profits, can be positive or negative—as they would be if they were judged by the binary criterion of successful/unsuccessful—then the relationship between rents and profits would be unclear because both pertain to ownership. If decision-making alone pertains to ownership, Topan contends, then entrepreneurship as uncertainty bearing would be an empty concept. Alternatively, if the decision-making function is bound up with uncertainty-bearing, then, contrary to Rothbard's view, nothing remains of the function in the ERE, from which uncertainty has been banished.

Topan's arguments on these points betray a failure to fully grasp Rothbard's rent theory. Rothbard (2009, pp. 559, 571–572, 694) maintains that only rents of factors *actually used in production*, whether marginal or supramarginal, must be positive. Submarginal factors like desert land, mines with the least accessible ore deposits, or potential laborers who suffer from severe mental or physical disabilities would earn zero rents in the ERE. Likewise, business owners who are inadequate as decision-making stewards of their productive property would incur such high production costs that their firm's return in the ERE would fall short of the natural rate of interest. Such firms, of course, would not be in business in equilibrium. There would thus be submarginal decision-makers who are earning zero—never negative—rents in the ERE precisely because *they are not operating firms*.<sup>9</sup>

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<sup>8</sup> I am indebted to David Gordon for this point.

<sup>9</sup> As Rothbard (2010, p. 603) points, out, even marginal firms operating in the ERE earn positive decision rents:

For Rothbard, then, decision-making rents in the ERE, like the rents of land and hireable labor factors, are completely independent of entrepreneurial profits under dynamic conditions. While Rothbard does not explicitly discuss the variation of pure profit and owner's rent in the real world of uncertainty, Mises did so in some detail. Like Rothbard, Mises (1998, p. 288) maintained that the uncertainty-bearing and ownership functions are conceptually separate and distinct, warning, "One must not confuse entrepreneurial profit and loss with other factors affecting the entrepreneur's proceeds." He thus distinguished the "specific entrepreneurial function" which involves "determining the employment of the factors of production" from the entrepreneur's personal "technological ability" including his "ability to hire adequate helpers."

For Mises, therefore, "specific entrepreneurial profit or loss" is not influenced by the quality of the owner's technological ability, which differs between owners and earns higher or lower "wage rates or quasi-wage rates."<sup>10</sup> For example, entrepreneurs of inferior technical ability in the bottling industry will experience more bottles bursting per given quantity filled in their plants than in more efficiently run plants. However, as Mises (1998, p. 189) pointed out, this reduces physical output and raises production costs, but "does not affect entrepreneurial profit and loss." According to Mises, the owner's knowledge of productive techniques is better or worse, but not uncertain. Thus Mises (1998, pp. 189–190) argued that if the risks of accidents are insurable, they

...do not introduce uncertainty into the conduct of the technological processes. If an entrepreneur neglects to deal with them duly, he gives proof of his technological insufficiency. The losses thus incurred are to be debited to bad techniques applied, not to his entrepreneurial function.... [T]he specific entrepreneurial profits and losses are not produced by the quantity of physical output.... What produces them is the extent to which the entrepreneur has succeeded or failed in anticipating the future—necessarily uncertain—state of the market.

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[T]he marginal land earns some rent, even if 'close to' zero. Similarly, the marginal firm earns *some* rent of decision-making ability. We can never say quantitatively how much it will be, only that it will be less than the corresponding 'decision rents' of the *supramarginal* firms.

<sup>10</sup> Note that Mises, too, is reluctant to apply the unqualified term "wage-rates" to the entrepreneur's undivestible technical function.



In the real world, then, owners of going concerns always earn decision rents, which are part of the composite return to capitalist-entrepreneurs intermingled with profit and interest. Contrary to Topan, to recognize that pure profit and ownership rent together determine the success or failure of the firm under dynamic conditions is not to deny that they are functionally independent of one another. Mises (1998, pp. 289–290) is especially emphatic on this point:

The elimination of those entrepreneurs who fail to give their enterprises the adequate degree of technological efficiency or whose technological ignorance vitiates their cost calculation is effected on the market in the same way in which those deficient in the performance of the specific entrepreneurial functions are eliminated. It may happen that an entrepreneur is so successful in his specific entrepreneurial function that he can compensate losses caused by technological failure. It may also happen that an entrepreneur can counterbalance losses due to failure in his entrepreneurial function by the advantages derived from his technological superiority or from the differential rent yielded by the higher productivity of the factors of production he employs.... The technologically more efficient entrepreneur earns higher wage rates or quasi-wage rates than the less efficient in the same way that the more efficient worker earns more than the less efficient.

In sum, although owner's rent of an operating firm is always positive, a firm may fail because either: the rents may be insufficient to offset entrepreneurial losses; or the inferiority of decision-making ability compared to that of other owner-entrepreneurs in the industry may result in a relatively high cost structure that wipes out any pure profit and drives the firm's net return below the natural interest rate. We thus must reject Topan's claim that Rothbard's concept of decision making refers "to uncertainty bearing and overcoming." His contention is based on confounding specifically entrepreneurial "decision making," which refers to adjusting production to uncertain future market conditions, with "decision making" aimed at efficiently supervising and coordinating his existing property in light of his present production plan.

Topan (2012, p. 86) makes one final attempt to eradicate the owner's decision-making as an independent category of economic theory by subsuming it under "entrepreneurial judgments," which he asserts "must be as *specific* as possible." By this he means that such judgments should be understood as "referring to particular



circumstances of time, place and persons from the future." But here Topan all but concedes the point. Owner's decision making, in Rothbard's and Mises's view, refers to judgments of present labor skills, productive techniques, and organizational structures, as noted above.

Topan (2012, p. 87) recognizes that if the ownership function is completely eliminated from economic theory, as he advocates, then he must provide an alternative explanation for the ubiquitous phenomena of high-cost versus low-cost firms. He suggests but downplays the possibility of entrepreneurial errors because these would generate cost differences "of a rather ephemeral nature." The "more lasting" inter-firm cost differences, he attributes to different preferences for non-pecuniary income among "skillful entrepreneurs" who may, for example, choose an inferior location for their enterprise because of its proximity to their home. But, here again, Topan is admitting owner's rent into his analysis by the back door. For, unless the entrepreneur is purchasing the land for speculative purchases, his choice of the site is based on his technical knowledge of what constitutes a superior or inferior location for the production of a specific good to be sold on an uncertain future market. He would thus be trading off part of his decision rents rather than entrepreneurial profits for the psychic benefits of a short and pleasant commute to work.

In conclusion, I do not believe that Topan has succeeded in establishing his case that Rothbard's concepts of the ownership function and its corresponding income of decision-making rent have no place in economic theory. On the contrary, these concepts are essential to comprehending the role of the capitalist-entrepreneur in real-world markets.

## REFERENCES

- Bober, M. M. 1935. "Theoretical Aspects of the Scale of Production." In Norman E. Himes, ed., *Economics, Sociology, and the Modern World: Essays in Honor of T. N. Carver*. Cambridge: Harvard University Press, pp. 73–79.
- Mises, Ludwig von. 1998. *Human Action: A Treatise on Economics*. Scholar's Edition. Auburn, Ala.: Mises Institute.

- Rothbard, Murray N. 2009. *Man, Economy, and State: A Treatise on Economic Principles with Power and Market: Government and the Economy*. Scholar's Edition. 2<sup>nd</sup> ed. Auburn, Ala.: Mises Institute.
- . 2011. "Professor Kirzner on Entrepreneurship." In Murray N. Rothbard, *Economic Controversies*. Auburn, Ala.: Mises Institute, pp. 281–288.
- Salerno, Joseph T. 2008. "The Entrepreneur: Real and Imagined," *Quarterly Journal of Austrian Economics* 11, nos. 3-4: 188–207.
- Topan, Mihai Vladimir. 2012. "A Note on Rothbardian Decision-Making Rents," *Quarterly Journal of Austrian Economics* 15, no. 1: 75–88.

## ON CONCEPTUALIZING RISK: BREAKING THE DICHOTOMY BETWEEN KNIGHTIAN RISK AND UNCERTAINTY

CHRISTIAN HUGO HOFFMANN

**ABSTRACT:** Whenever risk managers are confronted with deep uncertainty and organized complexity, probabilistic inference methods which claim crisp inputs and precise results cannot be used effectively. This is a thesis of this paper which we derive from a systemic viewpoint and discuss in the context of praxeology. More specifically, our contribution to the literature of Austrian Economics is twofold. First, after revisiting the Knightian nomenclature of risk vs. uncertainty, which according to Hoppe (2007) is similar to Ludwig von Mises's work on the subject matter, we present our own conception of risk which differs from their notion. Second, we follow Hoppe (2007) in assessing the arguments provided by Knight and Mises against the possibility of applying probability theory in the area of human action, but reach a different, more nuanced conclusion. In particular, we outline a case which parts ways with the praxeological approach.

**KEYWORDS:** Austrian economics, risk, uncertainty, complexity, probability

**JEL CLASSIFICATION:** B4, C1

*It is high time, however, that we take our ignorance more seriously.*

(Friedrich A. Hayek, 1967)

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## 1. INTRODUCTION

This paper characterizes and discusses different concepts of risk and seeks to define a proper meaning of the term in the realm of economics and finance. The purpose is not only to simply deepen our conceptual knowledge, but to, and this is particularly relevant to Austrianism, identify and examine the potential of going beyond the mere and rigid dichotomy of risk vs. uncertainty which Knight and Ludwig von Mises rely on. This is achieved by exploring if and how far systematization can be deemed possible in the non-probabilistic realm of uncertainty. Even though at the end we will also differentiate between Knightian risk and uncertainty (so to speak), it is important to note that we only endorse a single concept of risk which is different from Knightian risk and which will be baptized *Risk I* (section 5). We introduce *Risk I* in a deductive manner by postulating four requirements that a risk notion should meet (section 4). Prior to that, we review the literature (section 2) and turn the spotlight to Knight's and Mises' angle on risk (section 3). We close this paper in section 6 and 7 where we detail lessons from the taxonomy of risk we are proposing for Austrianism.

The absence of an accepted and appropriate definition of risk in the literature is not simply an abstract academic ivory tower issue. For example, risks in and to economic and financial systems are regarded as triggers of global financial crises (Schwarcz, 2008, pp. 193–249; Kelly, 1995, pp. 221ff.). Having lucid definitions is a fundamental requirement for management and modeling (Fouque and Langsam, 2013, p. xxviii). Without a well-thought notion of (financial) risk and approaches for measuring and managing the amount and nature of the risks, it would be difficult to effectively target indispensable (e.g., mitigating) action without running the real risk of doing more harm than good.

## 2. THE NOTION OF RISK IN THE LITERATURE

In non-technical contexts and contexts of common parlance, the word “risk” refers, often rather vaguely, to situations in which it is possible but not certain that some undesirable event will occur

(Hansson, 2011; Heinemann, 2014).<sup>1</sup> More precisely, the philosopher Sven O. Hansson distinguishes five particularly important and more specialized uses and meanings of the term, which are widely used across academic disciplines and/or in everyday language (Hansson, 2011).

(1) risk = an *unwanted event* which may or may not occur.

An example of this usage is: "The risk of a financial collapse is vast."

(2) risk = the *cause* of an unwanted event which may or may not occur.

An example of this usage is: "Subprime lending is a major risk for the emergence of a housing bubble." Both (1) and (2) are qualitative senses of risk. The word also has quantitative meanings, of which the following is the oldest one:

(3) risk = the *probability* of an unwanted event which may or may not occur.

This usage is exemplified by the following statement: "The risk that a financial collapse will occur within the next five years is about 70%."

(4) risk = the *statistical expectation value* of an unwanted event which may or may not occur.

The expectation value of a possible negative event is the product of its probability and some measure of its severity. It is common to use the total amount of monetary costs as a measure of the severity of a financial crash. With this measure of severity, the "risk" (in sense 4) laden with a potential financial collapse is equal to the statistically expected number of monetary costs; i.e., for example, 70% (building on the example from (3)) times USD 10T results in USD 7T of expected overall costs of a global financial crisis. Other measures of severity give rise to other measures of risk.<sup>2</sup>

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<sup>1</sup> The origin of the concept of risk is not clear. Etymologically, the term is, among other things, derived from the Greek word "rhiza" which can be translated with "cliff", supporting the above negative mode of explanation, and from the Latin vulgar expression "risicare" / "resicare", meaning "to run into danger" or "to wage / to hazard". Cf. Heinemann, 2014, p. 59.a

<sup>2</sup> "Although expectation values have been calculated since the 17<sup>th</sup> century, the use of the term 'risk' in this sense is relatively new. It was introduced into risk analysis in the influential Reactor Safety Study, WASH-1400, (Rasmussen, 1975)." (Hansson, 2011). Today, Hansson (2011) regards it as the standard technical meaning of the

- (5) risk = the fact that a decision is made under conditions of *known probabilities* (“decision under risk” as opposed to “decision under uncertainty”).<sup>3</sup> See footnote 28 for an example.

All concepts of risk have in common what philosophers call contingency, the distinction between possible and actual events or possible and chosen action (Renn, 2008, p. 1). In addition to these five common meanings of “risk”, according to Hansson (2011), there are several other more technical meanings, which are well-established in specialized fields of inquiry. With regard to economic and particularly relevant analyses for the purposes of this study, *nota bene* that the current debate on risk resembles a Babylonian confusion of tongues. The present situation is characterized by many weakly justified and inconsistent concepts about risk (Aven, 2012, p. 33). Some of the many different definitions that are circulating are triaged and a subsumption system for them is given in Table 1. The purpose of this overview is to lay out the variety of material risk notions, rather than to claim that the categories proposed are exhaustive or mutually exclusive.

**Table 1: Classification system for risk definitions and characterization of different risk definition categories.<sup>4</sup>**

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term “risk” in many disciplines. Some risk analysts even think that it is the only correct usage of the term (ibid.).

<sup>3</sup> “Most presentations of decision theory work from Luce and Raiffa’s (1957) [building on Knight, 1921; C.H.] classic distinction between situations of *certainty* (when the consequences of actions are known), *risk* (when the probability of each possible consequence of an action is known, but not which will be the actual one) and *uncertainty* (when these probabilities are unknown)” (Bradley and Drechsler, 2014, p. 1229).

<sup>4</sup> x: yes, o: no, x?: answer depending on the meaning of the terms or it is not specified. A similar, but not fully satisfactory summary is found in Aven (2012, p. 37).

Issue	R = EV	R = P V OU	R = V	R = (S <sub>p</sub> , P <sub>r</sub> , C <sub>i</sub> )	R = C	R = U	R = U&C
Definition	Risk is the expected value	Risk is (known) probability or objective / measurable uncertainty	Risk is <i>volatility</i> around the mean	Risk is equal to a triplet of possible <i>scenarios</i> , their <i>probability</i> and the severity of their <i>consequences</i>	Risks are the possible negative <i>consequences</i> of agents' own decisions or actions	- Risk is <i>uncertainty</i> - Risk is the effect of <i>uncertainty</i> on <i>objectives</i>	Risk is the real or realistic possibility of a negative, (very) rare and <i>uncertain</i> event with serious or even extreme <i>consequences</i>
Examples where this concept is found	- De Moivre, 1711 - Rasmusseu, 1975 - Mark and Krishna, 2014	- Haynes, 1895 - Knight, 1921 - ("risk" proper) Mises, 1949 - (class probability) Luce and Raiffa, 1957	- Markowitz, 1952 - Sharpe, 1966 - Rajan, 2006 - Cecchetti, 2008 - Saunders and Cornett, 2010 - Espósito, 2014	- Kaplan and Carrick, 1981 - Sheffi, 2005	- Nida-Rümelin, 2002 - Luhmann, 1991	- Keynes, 1937 - McNish et al., 2013 - Gronemeyer, 2014 - Heinemann, 2014 - ISO, 2009 - Helbing, 2013	- Steigleder, 2012 - Aven and Renn, 2009 - Taleb, 2007a - Stulz, 2008 - Power, 2009 - Mikes, 2011 - <b>Definition used here</b>
Literature Stream	- Classical Economics / Decision / Safety Analysis	- Austrian Economics / Rational Choice Theory / Statistics	- Economics and Finance / Insurance Mathematics	- Engineering	- Ethics / System Theory / Common parlance	- (Strategic) Management / Ethics in Finance	- Critical Finance and Management / Ethics in Finance

Criterion	R = EV	R = P V OU	R = V	R = (S <sub>r</sub> P <sub>r</sub> C <sub>j</sub> )	R = C	R = U	R = U&C
Risk is defined quantitatively	X	X	X	X	O	O	O
Risk is a qualitative concept	O	O	O	O	X	X	X
Risk exists objectively (is subjective)	X (X?)	X (X?)	X (O)	X (X?)	X? (X)	X? (X)	X? (X)
Risk balances different attributes (e.g., consequences <i>and</i> likelihood)	X	O	O	X	X	O / X?	X
Reference to probability calculus	X	X	O	X	O	O	O
Risk relates to undesirable consequences / outcomes only	X?	O	O	X	X	O	X
Allows for distinction between the concept and how to measure / operationalize it	O / X?	O	X?	O	X	X	X



In light of this ambiguity, the next section pays special attention to how the term “risk” has been coined by the Austrian school of economics, by Ludwig von Mises and Frank Knight in particular.

### 3. THE NOTION OF RISK IN AUSTRIANISM

Hoppe (2007) deserves credit for investigating a systematic, yet rarely noted similarity in the works of Knight (1921) and Mises (1949), namely in terms of their stance on risk, uncertainty and (the scope of) probability (theory).<sup>5</sup> However, the similarity concerns more than he spells out. Hoppe’s conclusion is not sufficiently satisfying because it remains incomplete when he simply notes that both Knight and Mises share a similar critical view on the limitations of mathematical probability theory, which would not prove to be useful in our daily endeavors of predicting human action (Hoppe, 2007, p. 19). Leaving that for the moment, Hoppe fails to discuss an intriguing shortcoming from which both oeuvres suffer. Knight (1921, ch. 7 and 8) and Mises (1949, ch. 6) treat the notions of uncertainty and probability, which are a primary concern of praxeology, but both treatments lack some conceptual clarity. To be precise, we do not disagree with Hoppe’s or Knight’s / Mises’s critical attitude towards the applicability of numerical or Kolmogorovian probability theory. Rather, the aforementioned lack of conceptual clarity on risk notions refers to a naïve identification of risk with (a frequency interpretation of) probability both Knight and Mises succumb to and which is not critically appraised by Hoppe.

Knight (1921, pp. 223f.) spots empirical-statistical probabilities and defines them as “insurable” contingencies or “risk.” Mises concurs with him (Hoppe, 2007, p. 11). Yet, why is this approach naïve? In section 4, we will call it problematic because it does not meet the first, second and third of four requirements which we will establish regarding an appropriate concept of risk. On top of that, the frequency interpretation of probability itself is laden with inconsistencies (cf. Hájek, 2011 for a synopsis). Therefore, by anticipating the reasoning underlying criteria 1 to 3 in section 4 and by pointing to the objections to frequentism in the literature, we are justified in stating the first of two research gaps.

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<sup>5</sup> However, cf. also Rothbard (1962, pp. 498–501).

**Research Gap I: Poor conceptualization of the term “risk” as well as knowledge deficits concerning the conceptual relationships between “risk,” “uncertainty,” and “probability” in a finance and economics context.**

Mises (1949, pp. 107ff.) actually does not even single out “risk” as a *terminus technicus* in this connection of elaborating on the interpretations of probability. Instead, he first comments rather vaguely:<sup>6</sup>

A statement is probable if our knowledge concerning its content is deficient. We do not know everything which would be required for a definite decision between true and not true. But, on the other hand, we do know something about it; we are in a position to say more than simply *non liquet* or *ignoramus*. (Mises, 1949, p. 207).

Within this wide, general, and under-determined class of probabilistic statements, Mises then distinguishes two categorically distinct subclasses. The first one—probability narrowly understood and permitting the application of the probability calculus—bears the signature of his brother Richard, who first and foremost coined the objective concept of probability (Mises, 1939), and is called “class probability”:<sup>7</sup>

Class probability means: We know or assume to know, with regard to the problem concerned, everything about the behavior of a whole class of events or phenomena; but about the actual singular events or phenomena we know nothing but that they are elements of this class. (Mises, 1949, p. 207).

On the other hand, Knight (1921, pp. 223f., 226, 231f.) calls the other sort of contingency (i.e., probabilities which are not *a priori* or empirical-statistical) “true uncertainty” and describes it as an estimate or intuitive judgment. For example, business decisions “deal with situations which are far too unique, generally speaking, for any sort of statistical tabulation to have any value for guidance.

<sup>6</sup> A precise definition includes the logical operator “if, and only if”, which is missing in how Mises introduces “probability.”

<sup>7</sup> Moreover, that Mises (1949) shows himself in complete agreement with his brother (Mises, 1939) in this regard, entails that he deliberately uses “random” to mean “chancy,” which is problematic (cf. Eagle, 2012).

The conception of an objectively measurable probability or chance is simply inapplicable." (Knight, 1921, p. 231). Almost three decades later, Mises (1949, p. 110) adds that true uncertainty or *case probability*, which is how he refers to it, means:

We know, with regard to a particular event, some of the factors which determine its outcome; but there are other determining factors about which we know nothing. Case probability has nothing in common with class probability but the incompleteness of our knowledge. In every other regard the two are entirely different. (Mises, 1949, p. 110).

In particular, while the probability calculus is only applicable to 'genuine' classes or collectives (hence the name class probability), case probability is about individual, unique, and non-repeatable cases/events "which as such—i.e., with regard to the problem in question—are not members of any class" (Mises, 1949, p. 111). Thus, they lie outside the scope of classical probability theory. Yet, what kinds of events must be considered as instances of case probability according to Mises? He provides the reader with the following initial answer:

The field for the application of the former [class or frequency probability] is the field of the natural sciences, entirely ruled by causality; the field for the application of the latter [case probability] is the field of the sciences of human action, entirely ruled by teleology. (Mises, 1949, p. 107).

It follows that "human action is the source of 'true,' nonquantifiable (Knightian) uncertainty" (Hoppe, 2007, p. 11). We share Hoppe's observation that, unfortunately, Mises (1949) is less than outspoken in elucidating why human actions (choices) are intractable by probability theory (in the frequency interpretation) (ibid.). Moreover, we claim however that Hoppe's intended main contribution in his paper, namely to render the reason why choices are intractable by the frequency interpretation of probability explicit based on the Misesian framework, is insufficient and provide evidence in section 6. To put it in a nutshell already, we will not accept Hoppe's rationale because we reject the Misesian framework for this particular purpose. Instead, we will bring forward Proposition II and, thereby, ground the matter of the scope and limitations of probability theory on questions on complexity in lieu of human action. For now, we acknowledge

## Research Gap II: Lack of understanding of *why* human action and choices lie outside the scope of classical (Kolmogorovian) probability theory.

We address those two research gaps in the following. Section 6 seeks to close research gap II although the proposition that human action *per se* cannot be captured by probability statistics turns out to be untenable. Section 5 targets research gap I and the very next chapter constitutes a necessary stepping stone in this direction. Put differently, some notes on the epistemology of risk are in order first to escape possible snares before we deduce our own definition of risk.

### 4. THE EPISTEMOLOGY OF RISK

When there is a risk, there must be something that is unknown or has an unknown outcome. Therefore, knowledge about risk is knowledge about lack of knowledge (Hansson, 2011). This combination of knowledge and lack thereof contributes to making issues of risk difficult to grasp from an epistemological point of view.

Second, it is sensible to acknowledge that risk not simply refers to something unknown, but to draw a conceptual framework distinguishing between the *known*, the *unknown*, and the *unknowable* (“*KuU*” as it is labeled by Diebold et al., 2010). Accordingly, Kuritzkes and Schürmann (2010, p. 104) call a risk *known* (*K*) if it can be identified and quantified *ex ante*; *unknown* (*u*) if it belongs to a collective of risks that can be identified but not meaningfully quantified at present;<sup>8</sup> and *unknowable* (*U*) if the existence of the risk or set of risks is not anticipatable, let alone quantifiable, *ex ante*. *Nota bene*: there is no sharp definitional line to be drawn between these classes, maybe leaving the *KuU* classes lying along a continuum of knowledge.

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<sup>8</sup> The unknown might, therefore, also be knowable insofar as there (will) exist mechanisms that allow transforming the unknown into the known. These mechanisms can be either known or unknown. It is often unknown whether a risk or circumstance is a “knowable unknown” or an “unknowable unknown”, which might remind the reader of Donald Rumsfeld’s dictum of known and unknown unknowns—another demarcation line.

Third, things are even more confusing because even “known” risks (in the sense of Kuritzkes and Schürmann, 2010) contain uncertainty: “[...] as recent evidence coming from the financial markets painfully shows, the view according to which a ‘known probability distribution’ contains no uncertainty is not quite right” (Fedel et al., 2011, p. 1147).<sup>9</sup> The authors strengthen their assertion as follows (Fedel et al., 2011, p. 1147): Suppose a die is being rolled. One thing is to be uncertain about the face that will eventually show up (a “known” risk). One quite different thing is to be uncertain about whether the die is fair or unbiased (is the ostensibly known risk really known?) (Fedel et al., 2011, p. 1147). In other words, we can rather naturally differentiate between *first order* and *second order* uncertainty, respectively. In the former case, we are uncertain about some (presently unknown) state of affairs. In the latter, we are uncertain about our uncertainty, i.e., second order uncertainty refers to the assessment that an agent makes about her own uncertainty (Fedel et al., 2011, pp. 1147f.).<sup>10</sup>

Finally, fourth, Hansson (2011) observes that a major problem in the epistemology of risk, a problem which is paid special attention to in this study, is how to deal with the severe limitations that characterize our knowledge of the behavior of unique *complex* systems that are essential for estimates of risk (e.g., modern financial systems). Such systems contain components and so many, potentially shifting, interactions between them that it is in practice *unpredictable* (Hansson, 2011).

These four points already presage that the relationship between the concepts “risk,” “knowledge,” and “uncertainty” seems to be wide-ranging, multi-layered and elusive. Hereafter, we try to cope with these issues and, further, to establish four explicit conditions for defining a proper, i.e., a more useful and a consistent,<sup>11</sup> notion of risk.

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<sup>9</sup> Ellsberg (1961) speaks of the *ambiguity* of a piece of information.

<sup>10</sup> In principle, even higher orders of uncertainty are conceivable.

<sup>11</sup> Following Rothschild and Stiglitz (1970, pp. 226f.), it is, of course, impossible to prove that one definition is better than another. Instead, they point out that definitions are chosen for their usefulness as well as their consistency.

**Condition 1: Risk should be defined in such a way that it can be distinguished between *risk per se* (what risk is) and *how risk is measured, described or managed* (Aven, 2012, p. 33; Bradley and Drechsler, 2014, p. 1226).**

*Rationale:* This condition is important because there exist perspectives on risk in which this distinction is not made (see Table 1 and cf., e.g., Beck, 1992, p. 21; Hansson, 2007, p. 27). Like MacKenzie (2006, pp. 143–179), George Soros (2008, p. 3) notes how “our understanding of the world in which we live is inherently imperfect because we are part of the world we seek to understand” and he focuses on “how our knowledge of the world is interdependent with our measurements of it” (Blyth, 2010, p. 460).<sup>12</sup> In principle, every (measurement or description or management) tool in use (which could be based on stochastic models) should be treated as such. Every such tool has its limitations and these must be given due attention. By a distinction between risk as a concept, and its descriptions or assessments “we will more easily look for what is missing between the overall concept and the tool” (Aven, 2012, p. 42). By the same token, if a proper framework clarifying the disparity between the overall risk concept, and how it is being measured or operationalized etc. is not established, it is difficult to know what to look for and how to make improvements in these tools (Aven, 2012, p. 42). In addition to that, it is a central principle of systems science, which in turn is in consonance with the Austrian line of thought,<sup>13</sup> to examine issues from multiple perspectives—“to expand the boundaries of our mental models” (Sterman, 2000, p. 32)—and, as a consequence, the risk concept should not be illuminated by one theoretical perspective only (e.g., mere probabilistic underpinnings); it should not be founded

<sup>12</sup> An impressive example of how knowledge is interwoven with our measurement tools can be taken from fractal geometry: Intuitively, we would assume that a question like “How long is the coast of Britain?” is well-defined and can be answered clearly and precisely by pointing to a certain fact. However, by adding to the observations by Lewis Richardson (1881–1953), Mandelbrot (1967) shows that the length of a coastline, a self-similar curve or fractal object, depends on the scale at which it is measured (which has become known as the ‘coastline paradox’).

<sup>13</sup> For example, Mises (1949, p. 874) places the learning of economics within the context of systems thinking and the “interconnectedness of all phenomena of action” at the core of systems thinking.

on one single measurement tool. Because in the various scientific environments, application areas or specific contexts, there might not be one best way to measure/describe risk. This appears to be, therefore, a reasonable and uncontroversial premise which can be further strengthened by an analogy to the Austrian debate on the single concept “utility” that has been operationalized in different ways. One camp around Böhm-Bawerk would maintain a cardinal understanding of utility, namely that the utility of goods can be measured and expressed as a multiple of a unit. By contrast, Čuhel, Mises, and many more would defend an ordinal understanding of utility (Moscati, 2015). Thus, once we allow for the distinction between utility and its measurement, we enable both and potentially other parties to talk sense about utility from different angles, to elaborate on different facets of the broad notion, and so forth (be it a cardinal utility function or an ordinal understanding).

*Application to Knightian/Misesian framework:* When Knight (or Mises, for that matter) identifies risk with (a frequency interpretation of) probability, he does not pass this test because then it is not differentiated between the notion (i.e., risk and hence *probability*) and its operationalization (i.e., the *probability* measure).

The second condition purports the following:

**Condition 2: Risk should be defined in such a way that it can be distinguished between *what risk is* and *how risk is perceived* (Aven, 2012, p. 34)<sup>14</sup> as well as that the definition does not presuppose an interpretation of either *objective* or *subjective* risk (Hansson, 2011).**

*Rationale:* There is a major debate among risk professionals about the nature of risks: are risks social or subjective constructions (human ideas about reality, a feature of the agent’s informational state) or real-world, objective phenomena (representations of reality, a feature of the world itself;). Willett (1901) and Hansson (2011), for example, speak up for a strong objective component of risk: “If a

<sup>14</sup> According to Aven (2012), this premise is not in line with *cultural theory* and *constructivism* (cf. also Jasanoff, 1999; Wynne, 1992; and critical comments in Rosa, 1998). Beck (1992, p. 55), for example, writes that “because risks are risks in knowledge, perceptions of risks and risk are not different things, but one and the same.”

person does not know whether or not the grass snake is poisonous, then she is in a state of uncertainty with respect to its ability to poison her. However, since this species has no poison there is no risk to be poisoned by it" (Hansson, 2011). On the other hand, it is obvious to others that risks constitute *mental models* (Renn, 2008, p. 2). They are not veritable phenomena, but originate in the human mind (Renn, 2008, p. 2). As Ewald (1991, p. 199) notes: "Nothing is a risk in itself; there is no risk in reality. [...] [A]nything *can* be a risk; it all depends on how one analyses the danger, considers the event." The definitional framework should, hence, try to "avoid the naïve realism of risk as a purely objective category, as well as the relativistic perspective of making all risk judgments subjective reflections of power<sup>15</sup> and interests" (Renn, 2008, p. 3).

*Application to Knightian/Misesian framework:* Needless to restate the well-known objections to objective probabilities (e.g., cf. Hájek, 2011 for an overview), but interestingly, since Knight and Mises embrace a frequentism-based notion of probability, they also seem to endorse a purely objective interpretation of "risk." Thus, their framework does not pass this second test either. At least, some more clarification would be required because, on the other hand, subjectivism is considered a central pillar for economists of the Austrian School (e.g., Spitznagel, 2013, pp. 21, 76). Or maybe it simply follows then that an agnostic position should be taken as *Condition 2* suggests it.

There are at least two more requirements for a good risk definition.

**Condition 3: Risk should be defined in such a way that it is helpful to the decision-maker in lieu of misguiding her in many cases (Aven, 2012, p. 42), and, thereby, the risk definition should capture the main *pre-theoretic* intuitions about risk (Rothschild and Stiglitz, 1970, p. 227).**

*Rationale:* At first glance, this condition might sound trivial, but it must not be forgotten that risk cannot be confined to the ivory tower of scholarly deliberations. Even though it might be a

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<sup>15</sup> Power, for example, to the extent that what counts as a risk to someone may be an act of God to someone else, resigned to his fate (Bernstein, 1996b).



theoretical and abstract concept, risk has forged a direct link with real-life management of challenges and actual decision-making. It has a direct impact upon our life and the orientation along decision-making and *human action* is key for Austrianism (Mises, 1949) as well. Speaking for the banking context, banks, taxpayers, governments lost a lot of money (and much more; e.g., credibility) because risk managers (in a broad sense) ignored or misjudged risks, miscalculated the uncertainties or had too much confidence in their ability to master dangerous situations (FCIC, 2011). Ultimately, only time and feedback from the economic practice can tell whether or not this premise is fulfilled.

*Application to Knightian/Misesian framework:* Some proposals such as  $R = P \vee O \vee U$ , i.e., the framework of Mises, 1949 and Knight, 1921 (see Table 1), do not fulfill this criterion because, to put it in the words of Aven (2012, p. 41), “referring to risk only when we have objective distributions would mean we exclude the risk concept from most situations of interest.” Thus, this risk concept would not prove helpful in many or most cases of decision-making.

In conjunction to this third premise, opening the debate to a wider (namely, to a non-academic) audience, one can also see the following ethical demand.

**Condition 4: Risk should be defined in such a way that it does not divert attention away from systemic effects that have an impact on not only the actor, but also on other actors (Rehmann-Sutter, 1998, p. 120).**

*Rationale:* The school of Austrian economics also emphasizes the importance of systemic effects that are usually associated with (very) low-frequency events in a high-dimensional space—cf. for example, Spitznagel, 2012: “The Austrians and the Swan: Birds of a Different Feather.” Yet, Rehmann-Sutter (1998, p. 122) goes one step further and bemoans the fact that in some economic concepts of risk, “there is only one personal position: the decision-maker,” whereas most risks are not individual but rather social (Sen, 1986, pp. 158f.), i.e., there might be negative consequences for others from “taking risks.” He adds, however, that we have difficulty in adequately including those other persons (e.g., taxpayers in our

context) affected by the consequences of the (risk management) decision (of a bank) in the decision-making process, where the concept of risk is worked out in reality (Rehmann-Sutter, 1998, p. 122). “These other participants are abstract; attention is diverted away from them. These participants are conceptually hidden” (Rehmann-Sutter, 1998, p. 122).

*Application:* We cannot regard this critique as fundamental in terms of the economic risk concepts taken into consideration in Table 1—e.g., the definition  $R = EV$  does not entail a narrow reading of the consequences. Therefore, we consider 4 as a weak condition which can in principle be met by every risk definition. In other words, condition 4 is more about the interpretation of the definition than about the risk definition itself. Nevertheless, an important lesson can be learned from that admonition, among the most prominent of which was drawn by Kristin Shrader-Frechette.

Shrader-Frechette (1991) points to the unease we feel when we are using a concept which was elaborated for optimization of entrepreneurial behavior in an unpredictable market to describe interventions into the (financial) system with potential or actual adverse effects to other persons and institutions. What is *prima facie* rational might *secunda facie* not be rational if a *feedback view* of the world is adopted (Stermann, 2000). Since only those risks enter standard probabilistic risk measurement procedures that (directly!) affect the respective organizations, risk managers or traders etc. often do not see a direct connection between their actions and other actors (Garsten and Hasselström, 2003, p. 259) or with significant changes in the financial system or even the global economy, which, in the end, bounce back on the individual institutions themselves.

For now, a first bottom line is that, unfortunately, many extant definitions of risk do not even meet the first two basic requirements (see Table 1, rows 3 and 7). In terms of Table 1, only risk in the sense of *uncertainty* ( $R = U$ ) and risk as the real or realistic possibility of a negative, (very) rare and *uncertain* event with serious or even extreme *consequences* ( $R = U\&C$ ) remain in the game. Since seeing risk as uncertainty can be considered a special case of  $U\&C$ , the latter seems to be the most promising candidate whereas the other risk concepts presented do not only turn out to not have some desirable properties, but also suffer from other shortcomings. For example, the especially in a banking context relevant identification

of risk with volatility or the variance of returns ( $R = V$ ) is clearly unsatisfactory: "We can construct distributions that have identical variance but with which we would associate very different degrees of 'riskiness' – and risk, as the saying goes, is one word but is not one number" (Rebonato, 2007, p. 237; cf. also Rootzén and Klüppelberg, 1999); "[i]n any case, anyone looking for a single number to represent risk is inviting disaster" (Taleb et al., 2009, p. 80; cf. also Power, 2007, p. 121).

Before we shed some more light on U&C, it makes sense to first look closer at another example, namely the field of the risk definition  $R = P \vee OU$  where Mises (1949) and Knight (1921) made one of the first large-scale distinctions between risk and uncertainty, for what became known as 'Knightian risk' (= *measurable* uncertainty) and 'Knightian uncertainty.' Albeit there might be good reasons for regarding Knight's original argument for distinguishing between risk and uncertainty as going astray (see condition 3),<sup>16</sup> it is nevertheless important to bear it in mind due to several reasons.

First, it is very puzzling to see how different economists, risk experts and others have reacted to Knight's oeuvre, how they interpreted it and what conclusions have been drawn. A good example is that while both the critical finance community (e.g., Stout, 2012; Bhidé, 2010; Aven and Renn, 2009; Power, 2007; or Taleb and Pilpel, 2004), on the one hand, and the economic (imperialistic) mainstream (Friedman, 1976; Ellsberg, 1961; Savage, 1954) on the other, consider Knight's distinction between risk and uncertainty as invalid because his risk perspective is too narrow, the interests of these two groups are diametrically opposed to each other: Whereas the former repels probability based definitions of risk ("risk as a concept should not be founded on one specific measurement tool [such as probability—C.H.]," Aven, 2012, p. 42) in favor of uncertainty, the latter maintains that Knightian risk, i.e. risk measured by probability, would prevail instead of "uncertainty" ("for a 'rational' man *all* uncertainties can be reduced to *risks* [because it is believed that we may treat people

<sup>16</sup> Taleb and Pilpel (2004) and Aven (2012), for example, argue that we should leave the Knightian nomenclature once and for all: "[...] the distinction is irrelevant, actually misleading, since, outside of laboratory experiments, the operator does not know beforehand if he is in a situation of 'Knightian risk'" (Taleb and Pilpel, 2004, p. 4).

as if they assigned numerical probabilities to every conceivable event—C.H.],” Ellsberg, 1961, p. 645).<sup>17</sup>

Second, Knight’s seminal work might, therefore, be seen as very influential or even path-breaking for the more recent history of economic thought (Heinemann, 2014, pp. 61f.; Aven, 2012, p. 41; Esposito, 2011, p. 32) and as laying the grounds for a common meaning of “risk” (Hansson, 2011), especially relevant in economics and decision theory (Luce and Raiffa, 1957). Indeed, the tie between risk and probability is seen as so strong that only few seem to question it: “Risk can only be found in situations that have to be described by probabilities” (Granger, 2010, p. 32). Moreover, Knight (1921) introduced a simple but fundamental classification of the information challenges faced in banks’ risk management, between Knightian risks which can be successfully addressed with statistical tools (Value at Risk, Expected Shortfall, etc.), and Knightian uncertainties which cannot (Brose et al., 2014, p. 369). Good risk management, thus, calls for toolkits that handle both Knightian risk and uncertainty (Brose et al., 2014, p. 369).

Hence, third, it is important to have a risk concept based on probability models to be able to participate in, and contribute to, the discourse of risk if a great number of participants and economists or people interested in risk management in banking, in particular, should be reached. Since such a definition of risk (which will be baptized *Risk II*) would not do justice to the requirements set above (e.g., the first condition), however, it will not be the one which is pursued and embraced in this study after all.

Hence, it would be premature to simply and uncritically take on Taleb and Pilpel’s (2004) or Aven’s (2012) position of pleading in favor of leaving the Knightian nomenclature once and for all. Instead, our strategy is twofold. We first conclude that the kind of definitions by Heinemann (2014), Steigleder (2012), Aven and Renn (2009), etc. are the most appropriate before we approve a narrow notion of risk that is compatible with how risk discussions are commonly held.

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<sup>17</sup> However, the agent’s acting *as if* the representation is true of her does not make it true of her. Cf. Hájek, 2009, p. 238.

## 5. UNDERSTANDING RISK

As an answer to research gap I, risk, in this paper, is paraphrased broadly as<sup>18</sup>

... the real or realistic possibility of a positive or negative *event* the occurrence of which is not certain, or expectable<sup>19</sup> but only more or less likely. However, the probability that the positive or negative event will occur does not have to be known or be subject to exact numerical specification.

Thus, the term “risk” is not used as an antonym to “uncertainty”, as is customary in decision theory, but rather as a generic concept that covers both “risk in a narrower sense” (what Knight, 1921, calls measurable uncertainty) and “uncertainty”. This is because we frequently lack a sufficient basis to determine the probabilities with any precision (Greenbaum, 2015, p. 165) as it will be clarified below.

This broad notion of risk is designated by *Risk I*. Structurally, risk in this sense captures:

- What can happen?
  - Answering this question requires the identification or description of consequences or outcomes of an activity.
- Is it more or less likely to happen (in contrast to *how* likely is that to happen)?
  - Attention is directed to rather rare or systemic events in this piece for reasons that become transparent below.
- If it does happen, what is the impact?
  - Answering this question requires the evaluation of consequences which are rather serious or even extreme. Otherwise, risks would turn out to be immaterial.

We thereby follow the call of Das et al. (2013, p. 715) that risk management research will have to dig deeper “in going

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<sup>18</sup> These first two passages are taken from Steigleder (2012, p. 4).

<sup>19</sup> We follow Steigleder (2012, p. 4) in calling an event expectable here “if it is known to be a normal and common consequence of certain circumstances or actions. Whenever an event that is expectable in this sense does not occur, that is something abnormal and needs explanation.”

from more frequency oriented ‘if’ questions to a more severity oriented ‘what if’ approach, and this at several levels”. In this particular treatise, the focus lies on (very) low-frequency events in a high-dimensional space or, in particular, on low-frequency, high-severity (monetary) losses for several reasons. For example, pushing natural phenomena to an extreme unveils truths that are ensconced under normal circumstances. As stressed in Johansen and Sornette (2001) and following the 16th century philosopher Francis Bacon, the scientific appeal of extreme and systemic events is that it is in such moments that a complex system offers glimpses into the true nature of the underlying fundamental forces that drive it (Johnson et al., 2012, p. 3).

Accordingly, the need to address unexpected, abnormal or extreme outcomes, rather than the expected, normal or average outcomes is a very important challenge in risk management (McNeil et al., 2005, p. 20; Malevergne and Sornette, 2006, p. 79; Greenbaum, 2015, p. 164); because improving the comprehension (of the distribution) of extreme values, which cannot be dismissed as outliers because, cumulatively, their impact in the long term is dramatic, is of paramount importance (Mandelbrot and Taleb, 2010).<sup>20</sup>

Benoît Mandelbrot uses a nice metaphor for illustration’s sake (cf. also Churchman, 1968, p. 17): “For centuries, shipbuilders have put care into the design of their hulls and sails. They know that, in most cases, the sea is moderate. But they also know that typhoons arise and hurricanes happen. They design not just for the 95 percent of sailing days when the weather is clement, but also for the other 5 percent, when storms blow and their skill is tested.” (Mandelbrot and Hudson, 2008, p. 24). And he adds: The risk managers and investors of the world are, at the moment, like a mariner who “builds his vessel for speed, capacity, and comfort—giving little thought to stability and strength. To launch such a ship across the

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<sup>20</sup> The need for a response to this challenge also became very clear in the wake of the LTCM case in 1998 (McNeil et al., 2005, p. 20). John Meriwether, the founder of the hedge fund, clearly learned from this experience of extreme financial turbulence; he is quoted as saying: “With globalization increasing, you’ll see more crises. Our whole focus is on extremes now—what’s the worst that can happen to you in any situation—because we never want to go through that again.” (*Wall Street Journal*, 2000).

ocean in typhoon season is to do serious harm." (Mandelbrot and Hudson, 2008, p. 276).

Clearly, this does not mean that (very) low-probability risk events matter simply because they have a very low probability. For example, there is some probability that a pink elephant will fall from the sky. But such a risk does not affect managerial decisions in economic and financial systems (such as banks). The known or unknown risks that matter for our purposes are, of course, those that, had senior or top management been aware of them, would have resulted in different actions (Stulz, 2008, p. 64)—e.g., the bursting of a pricing bubble or an escalating political conflict etc.

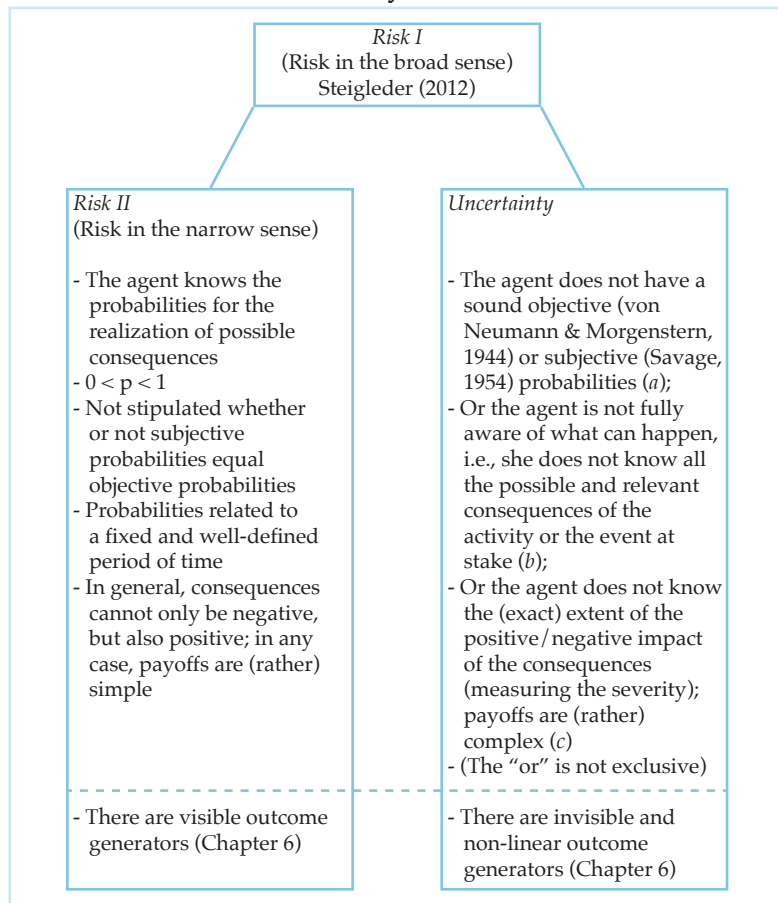
Second, a narrow concept of risk is invoked (*Risk II*); it is basically circumscribed by two key variables, the severity of the consequence and its probability of occurrence,<sup>21</sup> and it presupposes that possible/significant consequences and the corresponding values of severity and probabilities are known.<sup>22</sup> Risk II encompasses Hansson's (2011) risk definitions 3 to 5<sup>23</sup> and it can be regarded as a special and rare case of the broad risk definition (*Risk I*). Figure 1 depicts the conceptual relationships between *Risk I*, *Risk II*, and uncertainty, and can be viewed as our proposal to close research gap I.

<sup>21</sup> The probability of occurrence or at least the subjective probability must be less than 1 and more than 0, otherwise there would be *certainty* about the event or the possible outcomes of an action. (Going back to Lewis [1980], the principle that, roughly, one's prior subjective probabilities conditional on the objective chances should equal the objective chances is called the *principal principle*.) Moreover, the probability should be seen in relation to a fixed and well-defined period of time. For the concept of probability including objective and subjective probabilities, in general, cf. Hájek (2011).

<sup>22</sup> For readers well versed in economic theories of decision sciences, it should be added that, depending on the particular theory, probabilities are not always assigned to the consequences of action alternatives (e.g., Jeffrey, 1983), but also, for example and actually more often, to so-called states of the world (e.g., Savage, 1954).

<sup>23</sup> The risk formula "Risk = probability \* measure of severity (e.g., utility, monetary unit, etc.);" directly follows from the Risk II concept (Hansson's fourth definition). Since Risk II presupposes known probabilities (with  $0 < p < 1$ ), decisions under "risk" are made, and not decisions under conditions of "uncertainty" (Hansson's fifth definition). And, finally, seeing risk as probability (third definition) can be considered a special case of Risk II.

**Figure 1: Two relevant risk concepts: Risk I encompasses Risk II and uncertainty.<sup>24</sup>**



In our broad risk definition, risk is grounded in uncertainty while Risk II is rather hypothetical or an exception and this case is basically constructed only to participate in regular risk discussions

<sup>24</sup> A similar illustration (but insufficient explanation of the concepts) is found in Heinemann (2014, p. 61).



(see above, p. 15).<sup>25</sup> Apart from the different orders of uncertainty (Fedel et al., 2011, p. 1147; Ellsberg, 1961), different types of uncertainty need to be taken into account. In Figure 1, we distinguish three qualitatively different types of uncertainty: (a) what decision theorists or philosophers might call *state uncertainty*, (b) what they might call *option uncertainty* and/or *state space uncertainty*, and (c) what corresponds to *ethical uncertainty*, a form of normative uncertainty (cf. Bradley and Drechsler, 2014). On top of that, many different kinds of risk (business risk, social risk, economic risk, etc., Kaplan and Garrick, 1981, p. 11) or categories of risk (market, credit, operational risk, etc.) are discussed in the literature and many more classification systems are introduced. We argue, however, that, even though some of the taxonomies offered for bank risks or for knowledge (or the lack thereof) are persuasive, e.g., the conceptual framework “*KuU*” by Diebold et al. (2010), at least the silo-treatment of risks should be overcome. Instead of devoting much attention to different forms of risk, the focus lies here on  $R = U \& C$  in general. The broad concept of risk is chosen as a form of description since it is not *a priori* clear for concrete risks at issue whether or not the probabilities and potential consequences as well as their severity are known. Knight’s (Mises’s) important distinction between risk and uncertainty is esteemed by separating Risk II from uncertainty. This differentiation is, in some cases, indispensable for the discourse of risk (management) in banking because different implications arise: The risk perspective chosen strongly influences the way risk is analyzed and, hence, it may have serious effects on risk management and decision-making (Aven, 2012, p. 42). However, much of what we today call risk management is “uncertainty management” in Knightian terms, i.e., courageous efforts to manage ‘risk objects’ for which probability and outcome data are, at a point in time, unavailable or defective (Power, 2007, p. 26; Willke et al., 2013, p. 9).

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<sup>25</sup> See above: “Hence, it is third in turn important to have a risk concept based on probability models to be able to participate in, and contribute to, the discourse of risk if a great number of participants and economists or people interested in risk management in banking, in particular, should be reached. Since such a definition of risk (which will be baptized *Risk II*) would not do justice to the requirements set above (e.g., the first condition), however, it will not be the one which is pursued and embraced in this study after all.”

## 6. A TAXONOMY OF UNCERTAINTY: SCALES OF MEASUREMENT AND QUANTITATIVE VS. QUALITATIVE PROBABILITIES

It is a commonplace that we must not undertake impermissible transformations on the data we wish to analyze, nor must we make interval statements on ordinal data, in particular (Flood and Carson, 1993, pp. 41f.).<sup>26</sup> We agree with Mises (1949, p. 113) that there is a form of uncertainty, which he calls *case probability* and we will call *deep uncertainty*, and which does not lend itself to classical probability-based methods: “Case probability is not open to any kind of numerical evaluation” (Mises, 1949, p. 113). On this basis, we hypothesize that when we as risk modelers are in a state of deep uncertainty about some future data or events, then we can perform, not a cardinal, but an ordinal ‘measurement’ of that risks only.<sup>27</sup> In other words freely adapted from the logician and philosopher W.V.O. Quine, cardinalists’ overpopulated universe offends the aesthetic sense of us who have a taste for desert landscapes. Their aspiration after pedantic preciseness abets a breeding ground for disorderly mathematical operations on data and risks that necessitate modesty.

### **Proposition 1: Deep uncertainty or case probability does not admit of degrees, but is a merely comparative notion.**

However, we do not agree with Mises (1949) about the *scope* of case probability vs. deep uncertainty. While he claims that “[c]ase

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<sup>26</sup> We differentiate among four types of scales: *nominal*, *ordinal*, *interval* and *ratio*. According to Tal (2015, 3.2), “[n]ominal scales represent objects as belonging to classes that have no particular order, e.g., male and female. Ordinal scales represent order but no further algebraic structure” and admit of any transformation function as long as it is monotonic and increasing. Celsius is an example of interval scales: “they represent equality or inequality among intervals of temperature, but not ratios of temperature, because their zero points are arbitrary. The Kelvin scale, by contrast, is a ratio scale, as are the familiar scales representing mass in kilograms, length in meters and duration in seconds.” This classification was further refined to distinguish between linear and logarithmic interval scales and between ratio scales with and without a natural unit (Tal, 2015, 3.2.). “Ratio scales with a natural unit, such as those used for counting discrete objects and for representing probabilities, were named ‘absolute’ scales” (Tal, 2015, 3.2.).

<sup>27</sup> It is an open issue whether the representation of magnitudes on ordinal scales should count as measurement at all (Tal, 2015).

probability is a particular feature of our dealing with problems of human action" (Mises, 1949, p. 111) and, thus, that human action and choices lie outside the scope of classical (Kolmogorovian) probability theory, Mises remains short on providing us with a sufficient reason for this assertion (see research gap II).

Our strategy by contrast is twofold: We suggest that the class of human choices and actions is both too broad and too narrow for capturing uncertainty statements that cannot be expressed in probabilistic terms. It is too broad because we can reason about human action and choices probabilistically (see "decision-making under risk," Luce and Raiffa, 1957, or Table 1 [the column in the middle] below). Admittedly, it can be argued that all decisions are made "under uncertainty" if one abstracts from clear-cut and idealized textbook cases, but if a decision problem is treated as a decision "under risk" (e.g., the probability of rain is 70 percent [according to the weather forecast]; shall I take an umbrella to work?), this does not mean, as Hansson (2011) clarifies, that "the decision in question is made under conditions of completely known probabilities. Rather, it means that a choice has been made to simplify the description of this decision problem by treating it as a case of known probabilities. This is often a highly useful idealization in decision theory" yet it is, at the same time, important to distinguish between those probabilities that can be treated as known and those that are genuinely uncertain.

The class of human choices and actions is also too narrow because what makes *some* (not all) human actions and choices intractable by probability theory is *organized complexity* (Weaver, 1948), as we argue below, and organized complexity characterizes many different systems, not only human action.

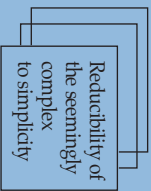
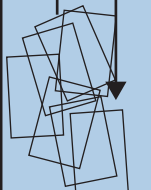


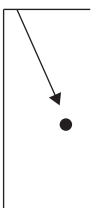
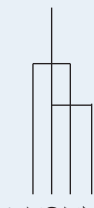

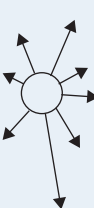
### **Proposition 2: Deep uncertainty emerges from highly organized and dynamic complexity.**

In a classic and massively referenced article, Weaver (1948) distinguishes three significant ranges of complexity, which considerably differ from each other in the mathematical treatment they require. He offers a classification that separates simple, few-variable problems (or a small number of *significant* factors) of '*organized simplicity*' at the one end from the '*disorganized complexity*'

of numerous-variable problems at the other, where the variables exhibit a high level of random behavior. This leaves '*organized complexity*' sitting between the two extremes. The importance of this middle region does, however, not depend primarily on the fact that the number of variables involved is *moderate*—large compared to two, but small compared to the number of atoms in a pinch of salt. The hallmark of problems of organized and dynamic complexity lies in the fact that these problems, as contrasted with the disorganized situations where statistical or probabilistic methods hold the key, show the essential feature of *organization* (Weaver, 1948, p. 539). This in turn involves dealing simultaneously with a *sizable number of factors which are interrelated to form an organic whole*. Interactions and the resulting interdependence lead to *emergence*, i.e., to the spontaneous appearance of features that cannot be traced to the character of the individual system parts (Anderson, 1972), and, therefore, cannot be fully captured in probability statistics nor sufficiently reduced to a simple formula. Something more is needed than mathematical analysis or the mathematics of averages (Weaver, 1948, p. 540; Huberman and Hogg, 1986, p. 376).

Weaver (1948, p. 539) lists examples of problems of organized complexity where in each case a substantial number of relevant variables is involved that are varying simultaneously, and in subtly interconnected ways. In particular, the economic, but not only the realm of human action, is viewed as being within the realm of organized complexity (Klir, 1991, p. 119). Table 1 resumes the relationship between Weaver's notions of complexity and the suitability of stochastic methods in terms of the respective status of probabilistic statements. It paves the way for bringing risk and its non-probabilistic form (deep uncertainty) as well as complexity, the latter as an answer to research gap II, together in one single scheme.

**Table 2: A suggested taxonomy of uncertainties and complexities based on Weaver (1948).**

Layer 1 Certainty					Layer 2 Risk II					Layer 3 Risk I					Layer 4 Deep Uncertainty				
System of organized simplicity					System of disorganized complexity					Relatively complex system (organized complexity)					Extremely complex system (organized complexity)				
																			
<ul style="list-style-type: none"><li>- Low variability / dynamics</li><li>- Low variety / pluralism</li></ul>					<ul style="list-style-type: none"><li>- Low variability / dynamics</li><li>- High variety / pluralism</li></ul>					<ul style="list-style-type: none"><li>- High variability / dynamics</li><li>- Low variety / pluralism</li></ul>					<ul style="list-style-type: none"><li>- High variability / dynamics</li><li>- High variety / pluralism</li></ul>				
A clear enough future					Alternate futures (with probabilities)					A few more or less plausible futures (i.e. with <i>quaint</i> probabilities)					A multiplicity of more or less plausible futures				
																			
Future system behavior					Alternate futures (with probabilities)					A few more or less plausible futures (i.e. with <i>quaint</i> probabilities)					A multiplicity of more or less plausible futures				
Simplicity of the System					Complexity of the System					Complexity of the System					Complexity of the System				
Probability statements					Probability statements					Probability statements					Probability statements				
<ul style="list-style-type: none"><li>- Point prediction</li><li>- A future event has either the probability of 1 or 0; i.e., <i>determinism</i></li><li>- One can become certain of the truth-value of the proposition if one has the right data</li></ul>					<ul style="list-style-type: none"><li>- <i>Informative or accurate</i> probabilistic prediction</li><li>- The probability of a future event can be clearly determined</li><li>- Not truth-value of proposition, but probability of it being true</li></ul>					<ul style="list-style-type: none"><li>- The probability of a future event cannot be determined</li><li>- Truth-value of the proposition cannot be found out</li><li>- Meaningful probability can only be given in a <i>quaint</i> sense</li></ul>					<ul style="list-style-type: none"><li>- The probability of a future event cannot be determined</li><li>- Truth-value of the proposition cannot be found out</li><li>- Meaningful probability can only be given in a <i>comparative</i> sense</li></ul>				

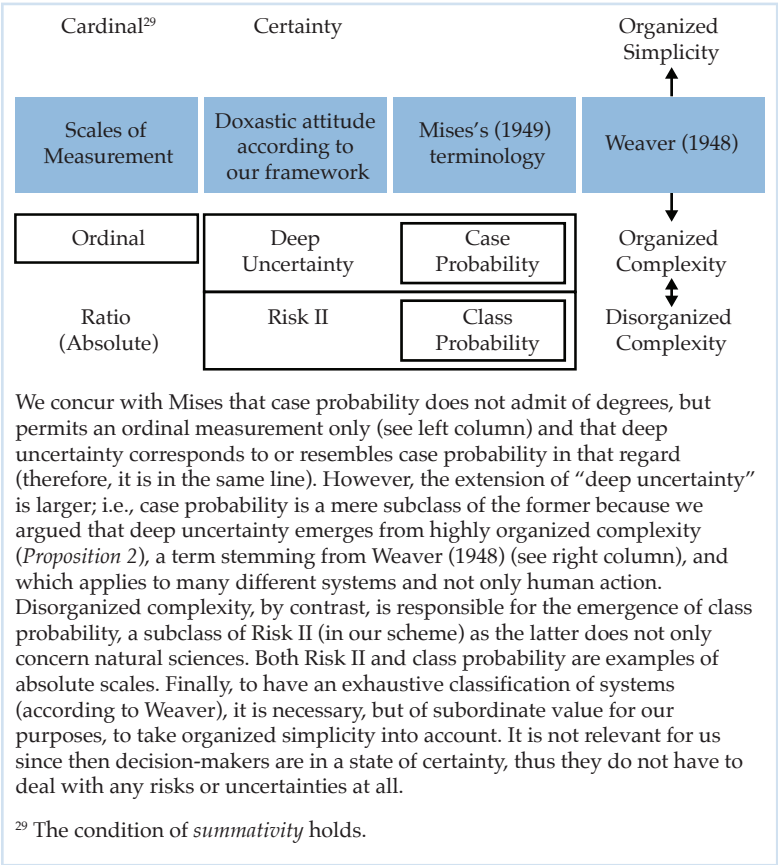
	Layer 1 Certainty	Layer 2 Risk II	Layer 3 Risk I	Layer 4 Deep Uncertainty
Decision-making Example	Under "certainty" (Luce & Raiffa, 1957) - Automobile - Diesel engine	Under risk (ibid.) - Life insurance (informative) - Deck of cards <sup>28</sup> (accurate)	Under uncertainty (ibid.) - Subsystem of a financial system - Local financial system	Under uncertainty / "ignorance" (ibid.) - Modern international financial system Cf. Neave, 2010
Simplicity of the System				Complexity of the System

<sup>28</sup> Suppose one wants to know whether or not *P* is the case for some proposition *P*—"The next card I will draw from a standard deck of cards will be black." The beauty of cards is that the universe is known; there are 52 cards in the deck, and only 52 and the rules of the game are set. One cannot find out the truth-value of *P*, but one can find out the probability of it being true. Under certain conditions (e.g., a complete deck) one can conclude that  $p(\text{"black"}) = p(\text{"red"}) = 0.5$ . One is then in a state of *decision-making under risk* in the classical decision-theoretical sense of the phrase (Luce and Raiffa, 1957), or as it would be put here: *decision-making under risk II*.

7. CONCLUSION

To conclude this paper, the following Figure 2 integrates the new dimensions around *deep uncertainty* and scales of measurement in the existing Weaverian framework about the disassembly of the complexity notion and in Mises’s reasoning about the two different types of probability constituting a subclass of deep uncertainty and Risk II, respectively.

Figure 2: The disassembly of complexity: The unifying framework.



We share the same ground with Mises (1949) and Knight (1921) when we are very wary about the predominance of probability statistics in the realm of economics and finance which is more characterized by case probability, that we presented as a merely comparative notion (*Proposition 1*), than by class probability. However, many outcomes of this study are not in accordance with the praxeological approach. In light of the two research gaps we singled out, we would like to highlight two instances:

- "Risk" should be grasped as Risk I, not Risk II.
- Not human vs. non-human action (or, phrased positively, human action vs. natural sciences, cf. Mises 1949: 107) decides on the applicability of probability theory, but a system's degree of organized complexity where deep uncertainty arises from (*Proposition 2*).

If this study stimulates further controversy of how to conceive risk and identify the limitations of probability theory, as such debate is considered very important for the development of the risk fields (Aven, 2012, p. 34), it will already have served a useful purpose.

## REFERENCES

- Adams, John. 1995. *Risk*. London: UCL Press.
- Anderson, Philip W. 1972. "More Is Different," *Science*, New Series 177: 393–396.
- Aven, Terje. 2012. "The Risk Concept—Historical and Recent Development Trends," *Reliability Engineering and System Safety* 99: 33–44.
- Aven, Terje, and Ortwin Renn. 2009. "On Risk Defined As an Event Where the Outcome Is Uncertain," *Journal of Risk Research* 12, no. 1: 1–11.
- Beck, Ulrich. 1992. *Risk Society*. London: Sage Publications.
- Bernstein, Peter L. 1996. *Against the Gods: The Remarkable Story of Risk*. New York: Wiley.
- Bhidé, Amar. 2010. *A Call for Judgment: Sensible Finance for a Dynamic Economy*. New York: Oxford University Press.
- Blyth, Mark. 2010. "Coping with the Black Swan: The Unsettling World of Nassim Taleb," *Critical Review*, 21, no. 4: 447–465.



- Bradley, Richard, and Mareile Drechsler. 2014. "Types of Uncertainty," *Erkenntnis* 79: 1225–1248.
- Brose, Margarita S., Mark D. Flood, and David M. Rowe. 2014a. "Risk Management Data and Information for Improved Insight." In Margarita S. Brose, Mark D. Flood, Dilip Krishna, and Bill Nichols, eds. *Handbook of Financial Data and Risk Information I: Principles and Context*. Cambridge: Cambridge University Press: 328–380.
- Cecchetti, Stephen G. 2008. *Money, Banking and Financial Markets*. New York: McGraw-Hill Higher Education.
- Churchman, C. West. 1968. *The Systems Approach*. New York: Dell Publishing.
- Das, Bikramjit, Paul Embrechts, and Vicky Fasen. 2013. "Four Theorems and a Financial Crisis," *International Journal of Approximate Reasoning* 54, no. 6: 701–716.
- De Moivre, Abraham. 1711. "De Mensura Sortis," *Philosophical Transactions* 27: 213–264.
- Diebold, Francis X., Neil A. Doherty, and Richard J. Herring. 2010. "Introduction." In Francis X. Diebold, Neil A. Doherty, and Richard J. Herring, eds., *The Known, the Unknown, and the Unknowable in Financial Risk Management: Measurement and Theory Advancing Practice*. Princeton, Oxford: Princeton University Press: 1–30.
- Eagle, Antony. 2012. "Chance versus Randomness." In Edward N. Zalta, ed., *Stanford Encyclopedia of Philosophy*. Available at <http://plato.stanford.edu/entries/chance-randomness/>
- Ellsberg, Daniel. 1961. "Risk, Ambiguity, and the Savage Axioms," *Quarterly Journal of Economics* 75: 643–669.
- Esposito, Elena. 2011. *The Future of Futures: The Time of Money in Financing and Society*. Cheltenham, UK; Northampton, Mass.: Edward Elgar Publishing, Inc.
- . 2014. "The Present Use of the Future: Management and Production of Risk on Financial Markets." In Christoph Luetge and Johanna Jauernig, eds., *Business Ethics and Risk Management*. Dordrecht: Springer: 17–26.
- Ewald, François. 1991. "Insurance and Risk." In Graham Burchell, Colin Gordon, and Peter Miller, eds. *The Foucault Effect: Studies in Governmentality*. London: Harvester Wheatsheaf: 197–210.

- FCIC, 2011. *The Financial Crisis Inquiry Report. Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States*. Available at [http://fcic-static.law.stanford.edu/cdn\\_media/fcic-reports/fcic\\_final\\_report\\_full.pdf](http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/fcic_final_report_full.pdf).
- Fedel, Martina, Hykel Hosni, and Franco Montagna. 2011. "A Logical Characterization of Coherence for Imprecise Probabilities," *International Journal of Approximate Reasoning* 52: 1147–1170.
- Flood, Robert L., and Ewart R. Carson. 1993. *Dealing with Complexity. An Introduction to the Theory and Application of Systems Science*. New York, London: Plenum Press.
- Fouque, Jean-Pierre, and Joseph A. Langsam. 2013. "Introduction." In Jean-Pierre Fouque and Joseph A. Langsam, eds., *Handbook on Systemic Risk*. Cambridge: Cambridge University Press: xx–xxviii.
- Friedman, Milton. 1976. *Price Theory: A Provisional Text*. Chicago: Aldine.
- Garsten, Christina, and Anna Hasselström. 2003. "Risky Business: Discourses of Risk and (Ir)Responsibility in Globalizing Markets," *Ethnos: Journal of Anthropology* 68: 249–270.
- Granger, Clive W.J. 2010. "A Decision Maker's Perspective." In Francis X. Diebold, Neil A. Doherty, and Richard J. Herring, eds. *The Known, the Unknown, and the Unknowable in Financial Risk Management: Measurement and Theory Advancing Practice*. Princeton, Oxford: Princeton University Press: 31–46.
- Greenbaum, Stuart I. 2015. "Tail-Risk Perspectives," *Journal of Investing* 24: 164–175.
- Hájek, Alan. 2011. "Interpretations of Probability." In Edward N. Zalta, ed., *Stanford Encyclopedia of Philosophy*. Available at <http://plato.stanford.edu/entries/probability-interpret/>.
- . 2009. "Arguments For—Or Against—Probabilism?" In Franz Huber and Christoph Schmidt-Petri, eds., *Degrees of Belief*. Dordrecht: Springer: 229–251.
- Hansson, Sven O. 2011. "Risk." In Edward N. Zalta, ed. *Stanford Encyclopedia of Philosophy*. Available at <http://plato.stanford.edu/entries/risk/>.
- Haynes, John. 1895. Risk As an Economic Factor," *Quarterly Journal of Economics* 9, no. 4: 409–449.

- Heinemann, Simone. 2014. *Ethik der Finanzmarktrisiken am Beispiel des Finanzderivatehandels*. Paderborn: Mentis.
- Hoppe, Hans-Hermann. 2007. "The Limits of Numerical Probability: Frank H. Knight and Ludwig von Mises and the Frequency of Interpretation," *Quarterly Journal of Austrian Economics* 10, no. 1: 3–21.
- Huberman, Bernardo A., and Tad Hogg. 1986. "Complexity and Adaptation," *Physica* 22: 376–384.
- Jasanoff, Sheila. 1999. "The Songlines of Risk," *Environmental Values. Special Issue: Risk* 8: 135–152.
- Jeffrey, Richard C. 1983. *The Logic of Decision*. Chicago: University of Chicago Press.
- Johansen, Anders, and Didier Sornette. 2001. "Large Stock Market Price Drawdowns Are Outliers," Working Paper, July 25, 2001. Available at: <http://arxiv.org/pdf/cond-mat/0010050.pdf>.
- Johnson, Neil, Guannan Zhao, Eric Hunsader, Jing Meng, Amith Ravindar, Spencer Carran, and Brian Tivnan. 2012. "Financial Black Swans Driven by Ultrafast Machine Ecology," Working Paper, July 2, 2012. Available at: <http://arxiv.org/abs/1202.1448>.
- Kaplan, Stanley, and B. John Garrick. 1981. "On the Quantitative Definition of Risk," *Risk Analysis* 1, no. 1: 11–27.
- Kelly, Ruth. 1995. "Derivatives—A Growing Threat to the International Financial System." In Jonathan Michie and James Grieve Smith, eds., *Managing the Global Economy*. Oxford, New York, Athens: Oxford University Press: 213–231.
- Klir, George J. 1991. *Facets of Systems Science*. New York, London: Plenum Press.
- Knight, Frank H. 1921. *Risk, Uncertainty, and Profit*. Mineola, N.Y.: Dover Publications.
- Kuritzkes, Andrew, and Til Schürmann. 2010. "What We Know, Don't Know, and Can't Know about Bank Risk: A View from the Trenches." In Francis X. Diebold, Neil A. Doherty, and Richard J. Herring, eds. *The Known, the Unknown, and the Unknowable in Financial Risk Management: Measurement and Theory Advancing Practice*. Princeton, Oxford: Princeton University Press: 103–144.

- Lewis, David K. 1980. "A Subjectivist's Guide to Objective Chance." In Richard C. Jeffrey, ed. *Studies in Inductive Logic and Probability*. Vol. II. Berkeley: University of Berkeley Press: 263–293.
- Luce, R. Duncan, and Howard Raiffa. 1957. *Games and Decisions*. New York: Wiley.
- Luhmann, Niklas. 1991. *Soziologie des Risikos*. Berlin, New York: de Gruyter.
- MacKenzie, Donald. 2006. *An Engine, Not a Camera: How Financial Models Shape Markets*. Cambridge, Mass.: MIT Press.
- Malevergne, Yannick, and Didier Sornette. 2006. *Extreme Financial Risks: From Dependence to Risk Management*. Berlin: Springer.
- Mandelbrot, Benoit, and Nassim Nicholas Taleb. 2010. "Mild vs. Wild Randomness: Focusing on Those Risks That Matter." In Francis X. Diebold, Neil A. Doherty, and Richard J. Herring, eds. *The Known, the Unknown, and the Unknowable in Financial Risk Management: Measurement and Theory Advancing Practice*. Princeton/Oxford: Princeton University Press: 47–58.
- Mandelbrot, Benoit, and Richard L. Hudson. 2008. *The (Mis)behavior of Markets: A Fractal View of Risk, Ruin and Reward*. London: Profile Books.
- Mandelbrot, Benoit. 1967. "How Long Is the Coast of Britain? Statistical Self-Similarity and Fractional Dimension," *Science* 156, no. 3775: 636–638.
- Mark, Robert, and Dilip Krishna. 2014. "Risk Management." In Margarita S. Brose, Mark D. Flood, Dilip Krishna, and Bill Nichols, eds. *Handbook of Financial Data and Risk Information I: Principles and Context*. Cambridge: Cambridge University Press: 33–74.
- Markowitz, Harry M. 1952. "Portfolio Selection," *Journal of Finance* 7, no. 1: 77–91.
- McNeil, Alexander J., Rüdiger Frey, and Paul Embrechts. 2005. *Quantitative Risk Management*. Princeton: Princeton University Press.
- Moscatti, Ivan. 2015. "Austrian Debates on Utility Measurement from Menger to Hayek." In Robert Leeson, ed., *Hayek: A Collaborative Biography. Archival Insights into the Evolution of Economics*. London: Palgrave Macmillan.

- Neave, Edwin H. 2010. *Modern Financial Systems: Theory and Applications*. Chichester: John Wiley and Sons.
- Nida-Rümelin, Julian. 2002. *Ethische Essays*. Frankfurt am Main: Suhrkamp.
- Power, Michael K. 2007. *Organized Uncertainty: Designing a World of Risk Management*. Oxford: Oxford University Press.
- Rajan, Raghuram G. 2006. "Has Financial Development Made the World Riskier?" *European Financial Management* 12: 499–533.
- Rasmussen, Norman C. 1975. *Reactor Safety Study*. WASH-1400, NUREG-75/014. Washington D.C.: US Government Printing Office.
- Rebonato, Riccardo. 2007. *Plight of the Fortune Tellers: Why We Need to Manage Financial Risk Differently*. Princeton: Princeton University Press.
- Rehmann-Sutter, Christoph. 1998. "Involving Others: Towards an Ethical Concept of Risk," *Risk: Health, Safety and Environment* 9, no. 2: 119–136.
- Renn, Ortwin. 2008. *Risk Governance: Coping with Uncertainty in a Complex World*. London/New York: Earthscan.
- Rootzén, Holger, and Claudia Klüppelberg. 1999. "A Single Number Can't Hedge Against Economic Catastrophes," *Royal Swedish Academy of Sciences* 28: 550–555.
- Rosa, Eugene A. 1998. "Metatheoretical Foundations for Post-Normal Risk," *Journal of Risk Research* 1, no. 1: 15–44.
- Rothbard, Murray N. 1962. *Man, Economy, and State*. Whitefish: Kessinger Publishing, 2010.
- Rothschild, Michael, Joseph E. Stiglitz. 1970. "Increasing Risk I: A Definition," *Journal of Economic Theory* 2: 225–243.
- Schwarcz, Steven L. 2008. "Systemic Risk," *Duke Law School Legal Studies Research Paper Series* 163: 193–249.
- Saunders, Anthony, and Marcia M. Cornett. 2010. *Financial Institutions Management. A Risk Management Approach*. New York: McGraw-Hill Irwin.
- Savage, Leonard J. 1954. *The Foundations of Statistics*. New York: Dover Publications.

- Sharpe, William F. 1966. "Mutual Fund Performance," *Journal of Business* 39: 119–138.
- Sheffi, Yossi. 2005. *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage*. Cambridge: MIT Press.
- Shrader-Frechette, Kristin S. 1991. *Risk and Rationality*. Berkeley, Los Angeles, Oxford: University of California Press.
- Soros, George. 2008. *The New Paradigm for Financial Markets: The Credit Crisis of 2008 and What It Means*. New York: Public Affairs.
- Spitznagel, Mark. 2012. "The Austrians and the Swan: Birds of a Different Feather." White paper. Available at: [http://www.universa.net/UniversaSpitznagel\\_research\\_201205.pdf](http://www.universa.net/UniversaSpitznagel_research_201205.pdf).
- . 2013. *The Dao of Capital. Austrian Investing in a Distorted World*. Hoboken, N.J.: John Wiley and Sons.
- Steigleder, Klaus. 2012. "Risk and Rights: Towards a Rights-Based Risk Ethics." Working paper. Available at: [http://www.ruhr-uni-bochum.de/philosophy/angewandte\\_ethik/papers.html.de](http://www.ruhr-uni-bochum.de/philosophy/angewandte_ethik/papers.html.de).
- Sterman, John D. 2000. *Business Dynamics. Systems Thinking and Modeling for a Complex World*. Boston, Mass.: Irwin/McGraw-Hill.
- Stout, Lynn A. 2012. "Uncertainty, Dangerous Optimism, and Speculation: An Inquiry into Some Limits of Democratic Governance." Cornell Law Faculty Publications, Paper 719. Available at: <http://scholarship.law.cornell.edu/facpub/719>.
- Stulz, Rene M. 2008. "Risk Management Failures: What Are They and When Do They Happen?" *Journal of Banking and Finance* 20: 58–67.
- Tal, Eran. 2015. "Measurement in Science." In Edward N. Zalta, ed., *Stanford Encyclopedia of Philosophy*. Available at: <http://plato.stanford.edu/entries/measurement-science/>.
- Taleb, Nassim N., Daniel G. Goldstein, and Mark W. Spitznagel. 2009. "The Six Mistakes Executives Make in Risk Management," *Harvard Business Review* 87: 78–81.
- Taleb, Nassim N., and Avital Pilpel. 2004. "On the Unfortunate Problem of the Nonobservability of the Probability Distribution." Working paper.

- Mises, Ludwig von. 1949. *Human Action: A Treatise on Economics*. Scholar's Edition. Auburn, Ala.: Mises Institute, 1998.
- Mises, Richard von. 1939. *Probability, Statistics and Truth*. New York: Dover, 1957.
- Wall Street Journal. 2000. In Alexander J. McNeil, A., Rüdiger Frey, and Paul Embrechts. 2005. *Quantitative Risk Management*. Princeton: Princeton University Press.
- Weaver, Warren. 1948. "Science and Complexity," *American Scientist* 36: 536–544.
- . 1963. *Lady Luck. The Theory of Probability*. Harmondsworth: Penguin Books.
- Willett, Allan H. 1901. *The Economic Theory of Risk and Insurance*. Philadelphia: University of Pennsylvania Press, 1951.
- Willke, Helmut, Eva Becker, and Carla Rostásy. 2013. *Systemic Risk. The Myth of Rational Finance and the Crisis of Democracy*. Frankfurt, New York: Campus.
- Wynne, Brian. 1992. "Risk and Social Learning: Reification to Engagement." In Sheldon Krimsky and Dominic Golding, eds. *Social Theories of Risk*. Westport, Conn.: Praeger: 275–297.

## ON CONCEPTUALIZING RISK: A COMMENT ON HOFFMANN

XAVIER MÉRA

**ABSTRACT:** Hoffmann (2018) attempts to reconstruct a typology of risks deemed more accurate and useful to both economists and risk managers than currently received views on the subject within mainstream economics/finance and Austrian economics. This comment argues that his criticisms of the Misesian approach and his case for an alternative are unconvincing. We explain weaknesses in his criticisms of the Misesian approach and outline some problems with his constructive task of building up the alternative.

**KEYWORDS:** Austrian economics, risk, uncertainty, complexity, probability

**JEL CLASSIFICATION:** B4, C1

### I. INTRODUCTION

Drawing on the general literature on risk and uncertainty, as well as Mises, Knight and Weaver, Hoffmann (2018) attempts to reconstruct a typology of risks deemed more accurate and useful to both economists and risk managers than currently received views on the subject within mainstream economics/finance and Austrian economics. In particular, the author emphasizes what

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his approach and the Knightian/Misesian one have in common and where they differ. Formally, this is done by identifying two “research gaps” in the Misesian literature—a lack of conceptual clarity in dealing with risk and uncertainty (1) and a lack of justification for the view that classical probability theory is irrelevant when dealing with human action (2)—and trying to close them.

In what follows, we focus on some reasons why both his criticisms of the Misesian approach and his case for an alternative strike us as unconvincing, although this is not to deny that the paper is thought provoking and displays valuable information. First, we explain why his criticisms of the Misesian approach appear to us as weak, and second, we outline some issues with his constructive task of building up the alternative.

## II. WEAKNESSES IN THE CRITICISMS OF KNIGHT/MISES

While Hoffmann (pp. 2–3) delves into some epistemological considerations, in order to make some proposals regarding the requirements of a proper definition of risk, he nevertheless neglects to identify what could be the epistemological grounding for the Misesian position, as if it did not have any, before telling us about the two research gaps that allegedly characterize it. It is true, as the author suggests, that Mises is less than perfectly explicit regarding the proper scope of application of classical probability theory. However, the impression left that the traditional dichotomy of risk and uncertainty could be considered as an *ad hoc* piece of theorizing, somehow independent of the praxeological edifice and its justifications, is unwarranted. On the contrary, as can be inferred from Mises’s discussions, as well as Hoppe’s (2007) defense and elaboration of it that the author refers to without ever mentioning why Hoppe thinks Mises is right, Mises’s views on this particular topic are arguably grounded in his general epistemology. If they are flawed, ultimately it must then be either that Mises’s epistemological views are wrong, or that he inconsistently applies them to the particular questions under consideration (or a combination of both). But the author provides no assessment of the sort. It seems obvious to this commentator, in any case, that the author is on shaky grounds when identifying some research gaps in Mises’s approach without first paying some attention to those considerations.

At the risk of oversimplifying, the Misesian approach on probability, risk and uncertainty that the author describes, can be defended along the following lines:

The distinction between risk and uncertainty and their fields of application mirrors the methodological dualism Mises advocated between the natural sciences on the one hand and economics on the other and derives from it.<sup>1</sup> According to Mises and his followers, sound economics has to be structured as statements logically derived from and implied in the so-called axiom of action (the “logic of action” or “praxeology”). Action has to be understood as purposeful behavior. It implies the necessity of choice regarding the use of some scarce means to arrive at some ends. All the categories of goods, value, cost, profit and loss, etc. are implied in this insight which is considered by Mises as valid knowledge derived *a priori* of experience, via discursive reasoning. The axiom is self-evident in the sense that one cannot deny it without performative contradiction since any attempt would have to be an action itself, using some means to arrive at some end, etc.

One implication of the axiom is that action in general and therefore any production process takes time and that the future must be uncertain to the actor. For there would be no choice to make if future courses of events were known in advance in a world of complete certainty (Mises, 1949, p. 105). Actors must lack perfect foresight then. When acting, they must rely on their more or less probable knowledge about the world.

Now, for our purpose here, a relevant implication is, as Hoppe (1995, p. 78) puts it, that “action presupposes a causally structured observational reality but the reality of action which we can understand as requiring such structure, is not itself causally structured.” Action itself is not causally structured since it is purpose-directed. The actor chooses to use scarce means in some ways instead of some other ways to arrive at some ends and by necessity, chooses to abandon or postpone the fulfillment of other ends. On the other hand, action presupposes the “constancy

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<sup>1</sup> This, incidentally, helps explain why Knight’s views came to be typically associated with the Austrian school after Mises systematized and refined the theory of knowledge and the corresponding method used by the Austrian economists, and as the Chicago school became unambiguously positivist.

principle," "time invariant operating causes" in the actor's environment, or a "causally structured" physical reality in which action takes place. In Mises's words, "causality is a category of action." The reason is that the very idea of action implies interference in the actor's environment in order to produce a preferred state of affairs compared to the course of events without such an action. Success and errors must be ever present possibilities as long as there is action, and being able to conceive of a course of events and its successful deviation initiated by an actor means he can grasp some relationships between things which stay constant over time. There cannot be any meaningful concept of success and error, planning and therefore action under complete randomness or indeterminacy in the actor's environment. The range of applicability of teleology and causality must therefore be clear and are determined *a priori*. Action has to be categorized teleologically, as purpose-directed, and the non-acting entities in the actor's environment must be categorized causally (Mises, 1949, p. 107; Hoppe, 1995, pp. 77–81).

Now the insight here is that there are two categorically different realms of phenomena and that different methods are required to learn about them accordingly. On the one hand, the actor will have a less than complete knowledge of causally structured natural phenomena. On the other hand, he will lack knowledge of his own and other people future actions. As for the methods, there is no way one could identify fundamental laws of action by treating it as some causally structured movements of bodies that one has to experiment with to find the cause and effect relationships *a posteriori*, and there cannot be *a priori* knowledge of specific causal relations apart from the fact that they are causally structured.

In the realm of natural phenomena, the constancy principle allows us to project past observations regarding peculiar cause and effect relationships into the future. In other words, actors can hypothesize some specific time invariant causes at work and test their views thanks to experiments. The more tests are made, the more the relationships can be confirmed or discarded. That is how natural sciences proceed, of course. At some point, it becomes known with practical if not absolute certainty that combining two atoms of hydrogen and one atom of oxygen produces a molecule of water. Or, some engineers are able to build and operate high speed rail networks which work most of the time without significant

technical failure. Now, sometimes observations of natural phenomena do not shed light on all the relevant cause and effect relations, but still allow actors to discover some regularity that can be expressed in terms of a numerical probability distribution. That is what Mises (1949, p. 107) refers to when discussing “frequency” or “class probability.”

The important consideration here is that the very possibility of being able to identify a class and the related probability distribution of some event presupposes that it is ruled by causality. No quantitative constant can be expected as a rule from an acting entity. That is why frequency or class probability can strictly be applied only in the field of natural sciences and that is why Knight’s concept of risk should apply to this realm only.

Now, not every event can fit the “ruled by causality” category. People act—people choose, that is—and choices cannot be predicted on the basis of time-invariant causal laws. A particular action is not the automatic answer to an external stimulus but the deliberate employment of chosen means to reach chosen ends. Different actors or even the same actors facing the same situation at different times can make different choices. Therefore, there can be no question of grouping some acts in a class of supposedly homogeneous events (Mises, 1949, pp. 110–113). This is the realm of “case probability.” This is why Knight’s concept of uncertainty should apply to actions only.

One may also refer to Hoppe’s (2007) elaboration of why action is intractable by frequency theory. In a nutshell, we may typically “know of no rule how to distinguish one bottle from another as far as breakage is concerned,” (Hoppe [2007, p. 14], referring to the manufacturing of beers in a factory for instance) so that a class may meaningfully be identified and probability calculus applied. However, understanding (*verstehen*) via verbal communication with other actors puts us “in a position to precisely distinguish one actor from any other actor and one action of a given actor from any other” (Hoppe, 2007, p. 17). Hence, as Knight puts it, in most cases in daily life, “there is no valid basis of any kind for classifying instances.” That is, “the essential and outstanding fact is that the ‘instance’ in question is so entirely unique that there are no others or not a sufficient number to make it possible to tabulate enough like it to form a basis for any inference of value about any

real probability in the case we are interested in" (Knight, 1921, p. 226). Should a particular manufacturer expand production? With no valid basis for classification, limited knowledge of the possible outcomes and no calculation of the sort insurance deals with being possible, actors must then resort to "intuitive judgment" and "estimates" in "any typical business decision." Being irreducible to fixed costs, they permanently leave room for errors in judgment, hence the existence of profits and losses.<sup>2</sup> Typical business decisions being based on such estimates, failure to forecast future prices and quantities is perfectly normal and results in bidding up factors of production "too much" or "not enough" in relation to their marginal productivity.

Now perhaps that approach is flawed, but where is it exactly? Why is the identification of risk with the frequency interpretation of probability naïve, in light of Mises's whole system? Is it, for instance, that his methodological dualism is wrong? Shall we get rid of the whole edifice? If not, why not? What shall we keep, why, and how does that affect our treatment of risk or uncertainty? Unfortunately, the author does not give us a clue, since he does not treat Mises's take on risk and uncertainty as a part of a larger system. Instead, the author takes another route. He occasionally alludes to other paradigms or builds his case for another framework and in light of it, incorporates elements of Misesian thought which fit and rejects those who supposedly do not. This is not necessarily problematic, although a possibly enlightening discussion of the above considerations is lost in the shortcut. If one refers to or builds an alternative paradigm, demonstrates it to be the truth on the matter, one may spare oneself a thorough analysis of the Misesian—or any other—view on uncertainty and risk and its relationship to Mises's epistemology and simply point out that this view must be wrong to the extent that it deviates from the said truth.

An example of such an "external" critique of the Misesian approach is when Hoffmann (2018, p. 21) claims he is justified in asserting that, "we can reason about human action and choices probabilistically" as Luce and Raiffa (1957, pp. 19–23) show or,

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<sup>2</sup> These errors should not be confused with technical failures, when one's technological recipes do not work, which essentially have to do with our grasp of the laws of nature.

referring approvingly to Hájek (2011), that the frequency interpretation of probability is flawed anyway, so that the Misesian identification of risk with the frequency interpretation of probability is naïve. Apart from the fact that it is hardly obvious how both claims could be held at the same time, the problem is that the author does not tell us what are the objections exactly, and why we should consider them as valid.<sup>3, 4</sup>

### III. WEAKNESSES OF THE ALTERNATIVE PARADIGM

More constructively, Hoffmann (2018, pp. 11–14) lays down the foundations of an alternative paradigm, by providing the reader with four requirements that a sound definition of “risk” should meet, and tries to sort out what is right and wrong in the Misesian approach, in light of that new framework. The requirements are (1) that “risk should be defined in such a way that it can be distinguished between risk per se (what risk is) and how risk is measured, described or managed”; (2) “risk should be defined in such a way that it can be distinguished between what risk is and how risk is perceived as well as that the definition does not presuppose an interpretation of either objective or subjective risk”; (3) “risk should be defined in such a way that it is helpful to the decision-maker in lieu of misleading her in many cases, and, thereby, the risk definition should capture the main *pre-theoretic* intuitions about risk”; and as a weaker requirement (4) “Risk should be defined in such a way that it does not divert attention away from systemic effects that have an impact on not only the actor, but also on other actors.” While these requirements sound by and large reasonable, the main issue is the following: the author tells us that their notion of risk (in a broad sense, or “risk I”) is introduced “in a deductive manner by

<sup>3</sup> As a matter of fact, a cursory look at the relevant section in Luce and Raiffa’s book, called “Individual decision making under risk,” reveals that its authors do not assign numerical probabilities to human acts at all. The probabilities discussed there are those of the outcomes of a gambling game such as a lottery!

<sup>4</sup> Yes, one can point toward objections in the literature to virtually any view under the sun, but if merely pointing out that stance A runs counter to stance B was deemed decisive to make a case for stance A, one could have as well demonstrated that stance A is wrong by pointing out that stance B exists. And if one can “prove” one thing and its opposite by the very same procedure, this should say something about the procedure.

postulating four requirements that a risk notion should meet.” Yet what is the epistemological status of those postulates? As far as the present writer can see and for our purposes here, it is clear that, at least, the Misesian treatment of probability, risk and uncertainty, can be thought of as grounded in an identifiable epistemology. It is far less clear that the alternative proposed by the author has such firm grounding.

In addition, why does the risk definition provided actually suit those requirements? It is hardly obvious that it does and that it fills research gap I, as intended, for it is quite close to Mises’s notion of probability (except for the uncommon inclusion of desirable outcomes) which allegedly does not: risk is “the real or realistic possibility of a positive or negative event the occurrence of which is not certain, or expectable but only more or less likely. However, the probability that the positive or negative event will occur does not have to be known or be subject to exact numerical specification.” (Hoffmann, 2018, p. 16). In fact, it turns out that the concept includes as subcategories the familiar Knightian concepts of risk in the narrow sense (later called Risk II) that the author finds problematic in other sections of the paper, and uncertainty: “Thus, the term ‘risk’ is not used as an antonym to ‘uncertainty,’ as is customary in decision theory, but rather as a generic concept that covers both ‘risk in a narrower sense’ (what Knight calls measurable uncertainty) and ‘uncertainty.’” (Hoffmann, 2018, pp. 16–17) What is the improvement then?

Now it is true that further elaborations of the author reveal that he deals with additional distinctions, Knightian risk and uncertainty being one among others. This is another consideration that leads him to disagree with Mises on the scope of classical probability theory. For not only human action could sometimes be made tractable by it. When it is not, when we deal with (deep) uncertainty instead of risk narrowly understood, this would not so much be because of some feature inherent to human action but because we are in the presence of what Weaver (1948) calls “organized complexity.” In other words, we are “dealing simultaneously with a sizable number of factors which are interrelated to form an organic whole. Interactions and the resulting interdependence lead to emergence, i.e., to the spontaneous appearance of features that cannot be traced to the character of the individual



system parts and, therefore, cannot be fully captured in probability statistics nor sufficiently reduced to a simple formula.” (Hoffmann, 2018, p. 22) Again here, it is unclear what is the epistemological status of the proposal, it is unclear why we are supposed to adopt Weaver’s view. But even if we do not dive into the deep waters of epistemology, it should be clear that the proposal is not as plausible as the author wishes it to be. For we can conceive of situations in which we deal with human choices without organized complexity. For instance, the range of possible choices of a shipwreck survivor alone on a desert island or in a lifeboat would be very limited and there would be no interaction to speak of (at least no interactions between human actors). Yet, if what makes some choices intractable by probability theory is organized complexity, would that not mean that we can predict the choices of this person, using classical probability theory? Now the author would have to tell us how we could do so.

#### IV. CONCLUSION

Aside from some apparent internal inconsistencies, the main problem with the author’s thesis is the lack of a systematic analysis of how both the praxeological treatment of risk and uncertainty on the one hand and his own on the other are or can come to be known and validated. His apparent eclecticism leaves his approach with shaky foundations.

#### REFERENCES

- Hájek, Alan. 2011. “Interpretations of Probability.” In Edward N. Zalta, ed., *Stanford Encyclopedia of Philosophy*. Available at <http://plato.stanford.edu/entries/probability-interpret/>.
- Hoffmann, Christian H. 2018. “On Conceptualizing Risk: Breaking the Dichotomy between Knightian Risk and Uncertainty,” *Quarterly Journal of Austrian Economics* 21, no. 2: xxx–xxx.
- Hoppe, Hans-Hermann. 2007. “The Limits of Numerical Probability: Frank H. Knight and Ludwig von Mises and the Frequency of Interpretation,” *Quarterly Journal of Austrian Economics* 10, no. 1: 3–21.



- Knight, Frank H. 1921. *Risk, Uncertainty, and Profit*. Mineola, N.Y.: Dover Publications.
- Luce, R. Duncan, and Howard Raiffa. 1957. *Games and Decisions*. New York: Wiley.
- Mises, Ludwig von. 1949. *Human Action: A Treatise on Economics, Scholar's Edition*. Auburn, Ala.: Mises Institute, 1998.
- Rothbard, Murray N. 1962. *Man, Economy, and State with Power and Market*. Auburn, Ala.: Mises Institute, 2010.
- Weaver, Warren. 1948. "Science and Complexity," *American Scientist* 36: 536–544.

## *THE SECOND SOCIALIST CALCULATION DEBATE: COMMENTS AT THE 2018 AUSTRIAN ECONOMICS RESEARCH CONFERENCE*

SAM BOSTAPH

*ABSTRACT:* This article discusses the influence of the initiation of the Second Socialist Calculation Debate on my own subsequent research and contributions to that debate, and briefly summarizes that research presented in articles on arguments made by Plato, Karl Marx, Friedrich von Wieser, Friedrich Hayek, Lionel Robbins, Joseph Schumpeter, and Israel Kirzner. It also mentions some of the changes in Austrian economics understanding stimulated by the Second Socialist Calculation Debate, and suggests a direction for future research.

*KEYWORDS:* Friedrich Hayek, Karl Marx, Lionel Robbins, Friedrich von Wieser, calculation, socialism, sociology

*JEL CLASSIFICATION:* B1, B2, P2, P5

It is a pleasure to be here at this prestigious conference, and to be on this panel concerned with the most important economic issue of the past two centuries—that of economic calculation. After all, to economize is to calculate; it is to seek the lowest expected opportunity cost of the means to achieve the end for which one is economizing. That is why Mises argued that the

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socialist planned economy is in reality no economy. It cannot by definition calculate the expected opportunity costs of higher order goods in order to assess their relative scarcity, and thus enable a decision of how they are to be efficiently used in the production of lower order goods. It cannot do so because without private property in higher order goods, there cannot be market-determined prices for those goods to reveal their current relative scarcities and thus allow economic calculation.

Joe Salerno asked each of us to discuss our respective contributions to the second socialist calculation debate, how this most recent debate influenced our later research, and how we think Austrian economics has changed as a result of that debate.

My own interest in this topic stems from my interest in imagined, as well as attempted, historical utopias. As a scholar in the Austrian school tradition, I cannot help being in part a sociologist. Albion Small recognized this aspect of the Austrian school in his book *Origins of Sociology* (1924) where he devoted considerable space to a discussion of Carl Menger's contribution to the discipline. Of course, I use the term "sociology" in the sense that Ludwig von Mises used it in his early scholarship. Later, Mises would substitute the term "praxeology" for "sociology" as the latter term came to mean a sort of philosophy of history, rather than a science of human action.

At one time, I intended to write a history of various theories of communism. In researching the topic, I came across a comment by Karl Marx in his inaugural article as editor of the *Rheinische Zeitung*. Marx identified Plato as an early communist theorist. "That can't be true," I thought. The research that falsified any such claim led to my 1994 contribution to David Reisman's edited collection *Economic Thought and Political Theory*. Of course I argued against such a simple-minded assessment of Plato's *Republic* and *Laws*. I also became aware of Friedrich von Wieser's attempt at rationalizing a socialist utopia in his *Natural Value* during the preliminary research I did on communist theories.

Meanwhile, Joe Salerno had attracted my interest back to Austrian school theory with his 1990 article "Ludwig von Mises as Social Rationalist." There Joe began the process of dehomogenizing Mises and Hayek and initiated the second socialist calculation debate, which has occupied some of us Austrians for the past thirty years.

When I read Joe's 1993 contribution to that debate, it struck me that his reference to Hayek as strongly influenced by his teacher and mentor, Wieser, deserved a firm grounding. That caused me to go back and intensively read Wieser. The result was my summer 2003 *QJAE* article "Wieser on Economic Calculation under Socialism." After having exhaustively studied Wieser's published writings on the socialist planned society, I not only placed him in the general equilibrium tradition of Walras, but also explained the total emptiness of his theory of planning. I found his concept of a unit of "natural value" as the basic unit of economic calculation to be nothing but a faux "util" and thus a fantasy, and his explanation of "imputation" as the method of deriving the values of higher order goods from the "natural values" of first order goods to be spurious. The terms in his equations are ambiguous, and his conception of imputation appears to be an attempt at a mere static theory of distribution.

I concluded that Hayek's attempt to use Wieser's "simple economy" of socialism as an analytical device as late as 1941 in his *Pure Theory of Capital*, as well as a number of his other laudatory references to Wieser over the years, to be telling. Also, Hayek's use of a general equilibrium context for most of his own theoretical work places him pretty firmly in the Walras/Wieser tradition. This may explain Hayek's emphasis on knowledge problems in his critique of the planned socialist society, rather than on its inability to use economic calculation.

To my surprise and delight, my article won the 2005 Lawrence A. Fertig prize. For that I remain greatly thankful to the prize committee. I was stimulated to continue my research on Wieser and that had two results. While a visiting professor at the University of Economics in Prague, Czech Republic, in 2005 I had the honor of delivering the inaugural Wieser lecture. This later appeared as an article titled "Friedrich von Wieser's Theory of Socialism: A Magnificent Failure" in the university's journal *Politická Ekonomie*. There I argued that the views that became the backbone of Wieser's last book, *The Law of Power* (1926), actually lay behind many of his expressed criticisms of the market economy and his desire to rescue the theory of the planned economy.

Perhaps those previous two articles explain why I was later invited to contribute the Wieser chapter in a book collection on

Austrian school economists. Unfortunately, after I had completed my 55-page contribution, publication apparently fell through and the book was never published. I hope to be able to harvest something from that manuscript at some point in the future.

At any rate, articles in the second calculation debate continued to stimulate my research and one result was a *QJAE* article arguing that Mises's methodology was not an extension of that of Lionel Robbins. Rather, the influence actually ran the other way, although significant differences between the two approaches remain.

Another project that stemmed from arguments presented during the recent calculation debate was a result of references to Joseph Schumpeter as another of Wieser's students. Schumpeter is known particularly for his theory of economic development and his concept of the entrepreneur as a force for "creative destruction." I was intrigued to look for signs of Wieser's influence on Schumpeter and I found them while reading through Schumpeter's various publications. More importantly, I was astonished at the generally *ad hoc* nature, classical school roots, and Walrasian general equilibrium context of Schumpeter's work. Schumpeter's entrepreneurial theory stands in stark contrast to that of Mises, as well as to Israel Kirzner's extension of Mises's concept of functional entrepreneurship.

The result was my 2013 *QJAE* article unfavorably contrasting Schumpeter's theory of entrepreneurship with that of Kirzner. The research on Kirzner's theory had a further result. I decided to use it in a historical study of the steel magnate and entrepreneur, Andrew Carnegie. After obtaining a publisher, I read through the major biographies of Carnegie and discovered that none of them really explained why Carnegie was successful. They detailed his success, but only historically. Historical explanation needs more than bare facts, however obtained. It needs the application of theory to identify historical cause and effect relations. What was missing from what I read was the grasp of economic understanding that is only provided by Austrian school theory. So, I used an Austrian school context and Kirzner's entrepreneurial theory as key elements of my economic biography of Carnegie.

Now that I am done with that project, I plan to return to writing my book on the early Austrian school trio of Menger, Böhm-Bawerk, and, of course, Wieser. So far, I only have about a couple

of hundred pages and I am stuck on Böhm-Bawerk's capital theory, but hope to dislodge myself. I particularly want to understand why Menger viewed Böhm-Bawerk's capital theory as a big mistake.

How has Austrian economics changed as a result of the second economic calculation debate? Well, it certainly opened my eyes concerning the development of the Misesian paradigm, as compared to that of Hayek. And, it greatly increased our understanding of the theoretical failures of the various planned socialist society models. In addition, it has produced a refinement of our understanding of what Misesian economic calculation assumes as necessary for the market process to take place. Most particularly, it has highlighted the radical importance of private property rights, subjective aspects of ownership that affect relative scarcity, and accurate cost accounting.

Added to that is the additional understanding of the overwhelming arguments for what is now called "market socialism." I find it ironical that when pressed to explain how market socialism could solve each of the successive problems identified with their successive models, advocates of market socialism step-by-step adopted features of the private property, free market model. And they have done this while still trying to keep an iron grip on their wish for an economy with no private property rights in higher order goods.

This started with the Lange/Taylor early attempts to adopt a surrogate perfect competition, general equilibrium model, with no private property in higher order goods. After this was exposed as a fantasy, then came Lange's use of a Walrasian auction model of price determination. After that was knocked down, market socialism's defenders proposed to turn firm managers into pretend entrepreneurs, without giving them the discretion over all of the firm's physical and financial resources that exists in a private property regime. This infects the market socialist financial sector with a fatal weakness. The administrators have no financial skin in the game—kind of like the Board of Governors of our Federal Reserve System. And we all know the recent consequences of that morbid fact.<sup>1</sup>

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<sup>1</sup> Of course, there is a sense of "skin in the game" for administrators in a Stalinist system. See Simon Sebag Montefiori (2004), for detailed descriptions of the arrest, imprisonment, sentencing to forced labor, or execution of soviet administrators, as

One is left with the question of why some perfectly intelligent people still lust for a society without private property rights in potentially productive resources. Is it simply the result of a personal lust for power? Or does it stem from the envy of those who are more materially successful in a free market context? I leave the question for future research. Particularly, I hope that young Austrian school economists will turn their interest to China. Under Xi Jinping, it looks like we have an emerging Stalinist regime. If so, it will function no better than its original, as the socialist calculation debate has taught us.

## REFERENCES

- Bostaph, Sam. 1994. "Communism, Sparta, and Plato." In David Reisman (ed.), *Economic Thought and Political Theory*. Dordrecht: Kluwer.
- . 2003. "Wieser on Economic Calculation under Socialism," *Quarterly Journal of Austrian Economics* 6, no. 2: 3–34.
- . 2005. "Friedrich von Wieser's Theory of Socialism: A Magnificent Failure," *Politicka Ekonomie* 6: 723–732.
- . 2009. "The Enduring Significance of Robbins," *Quarterly Journal of Austrian Economics* 12, no. 4: 91–99.
- . 2013. "Driving the Market Process: 'Alertness' versus Innovation and 'Creative Destruction,'" *Quarterly Journal of Austrian Economics* 16, no. 4: 317–354.
- . 2017. *Andrew Carnegie: An Economic Biography*. Updated Ed. Lanham, Maryland: Rowman and Littlefield.
- Gorbachev, Mikhail. 1996. *Memoirs*. New York: Doubleday.
- Hayek, Friedrich A. von. 1941. *The Pure Theory of Capital*. Auburn, Ala.: Ludwig von Mises Institute, 2009.

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well as their families, who failed to achieve the goals set for their production units during the Stalin era of the USSR. This even extended down to the local level of agricultural production. In his *Memoirs* (1996, pp. 24–27), former General Secretary, then President of the USSR, Mikhail Gorbachev relates how his grandfathers were arrested, tortured, and accused of being Trotskyite counterrevolutionaries for their loss of grain, destruction of livestock, and repression of local Stakhanovites during the 1930s. One was exonerated and the other sent to a forced labor camp.

- Marx, Karl. 1972. "Communism and the *Augsburger Allgemeine Zeitung*." In David McLellan (ed. and trans.), *Karl Marx: Early Texts*. New York: Barnes and Noble.
- Montefiori, Simon Sebag. 2004. *Stalin: The Court of the Red Czar*. New York: Knopf.
- Salerno, Joseph. 1990. "Ludwig von Mises as Social Rationalist," *Review of Austrian Economics* 4, no. 1: 26–54.
- . 1993. "Mises and Hayek Dehomogenized," *Review of Austrian Economics* 6, no. 2: 113–146.
- Small, Albion W. 1924. *Origins of Sociology*. Chicago: University of Chicago Press.
- Wieser, Friedrich von. 1889. *Natural Value*. London: Macmillan, 1893.
- . 1926. *Das Gesetz der Macht* [*The Law of Power*]. Vienna: Verlag von Julius Springer.



## *THE PLACE OF ECONOMIC CALCULATION IN THE ECONOMIC THEORY OF LUDWIG VON MISES*

JEFFREY M. HERBENER

*ABSTRACT:* In exalting the subjectivity of value, the marginalist revolution posed a fundamental problem for economic theory. Each person chooses how to allocate his means and thereby, economize his actions by rank ordering the value of alternatives. Being interpersonally incomparable, ordinal ranks cannot serve directly to economize means within a division of labor. Neoclassical economists solved this problem by foregoing an explanation of the division of labor grounded in the reality of human persons and instead, constructed formal, mathematical models. F.A. Hayek's subjectivist response to the neoclassical project was to augment formal, mathematical models with select characteristics of human persons. In contrast, Ludwig von Mises grounded economic theory in the reality of human persons. He demonstrated how voluntary exchange of goods for and against money generate cardinal numbers from ordinal ranks. Actual money prices emerging from actual human choices constitute the necessary condition for economizing resources across the division of labor. Unlike subjective valuations, which cannot be compared interpersonally, and barter exchange ratios which are incommensurate, money prices can be compared. Economic calculations of net income and net worth, furthermore, are a phenomenon of the market economy alone. Mises's approach not only solved the problem of economizing resources in a division of labor, but provides a robust framework for economic research.

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**KEYWORDS:** economic calculation, subjectivism, economizing, general equilibrium, socialism

**JEL CLASSIFICATION:** B13, B14, B24, B25, P11, P21, P51

It is probably no exaggeration to say that every important advance in economic theory during the last hundred years was a further step in the consistent application of subjectivism (Hayek, 1955, p. 52).

## INTRODUCTION

F.A. Hayek (1955, pp. 52–53) appended the following footnote to his famous maxim concerning subjectivism quoted above:

This is a development which has probably been carried out most consistently by Ludwig von Mises, and I believe that most peculiarities of his view which at first strike many readers as strange and unacceptable trace to the fact that in the consistent development of the subjectivist approach he has for a long time moved ahead of his contemporaries. Probably all the characteristic features of his theories—from his theory of money (so much ahead of the time in 1912) to what he calls his *a priorism*—his views about mathematical economics in general and the measurement of economic phenomena in particular, and his criticism of planning all follow directly (although, perhaps, not all with the same necessity) from this central position. See particularly his *Grundprobleme der Nationalökonomie* (1933) and *Human Action* (1949).

One achievement of the Salerno camp in the second calculation debate was to demonstrate that Hayek, at least, leaves the wrong impression of the relationship between Mises's work and his own. By referring to “the subjectivist approach,” Hayek seems to imply that his approach and that of Mises are fundamentally the same. Although Hayek admits to some differences in particulars, since Mises's views, as he puts it, “all follow directly (although, perhaps, not all with the same necessity) from this central position.”

Mises, however, did not accept the subjectivist approach of Friedrich von Wieser, on which Hayek patterned his own framework, but instead worked within the causal-realist approach of Carl Menger

and Eugen von Böhm-Bawerk.<sup>1</sup> In discussing the two traditions in Austrian economics, Joseph Salerno (1999, p. 37) wrote:

It is important to note that even at this early stage, the Austrian school was deeply divided on a crucial issue of basic theory. On the one hand, Böhm-Bawerk fully absorbed Menger's causal-realist approach to price theory and endeavored to develop it further and apply it to new areas. Wieser, on the other hand, seized narrowly on Menger's "subjectivism" as embodied in the principle of marginal utility and, while usefully elaborating some of the implications of this principle, completely ignored the structure of reality-based price theory that Menger had labored to build upon it. Wieser's purpose was to construct his own peculiar ideal of social welfare based on a state of general equilibrium that he called "natural value," and to link it through the concept of marginal utility to foundations in human psychology.

With his acceptance of general equilibrium and emphasis on human psychology, Hayek belongs to the Wieserian wing of the Austrian school. Hayek attempted to graft onto the neoclassical general equilibrium conception his own insights into human learning, knowledge, and other "subjectivist" elements. In discussing the main contributions to modern price theory for an entry in *The New Palgrave: A Dictionary of Economics* in the early 1980s, which remained unpublished at the time, he wrote (Hayek, 1992, pp. 53–54):

Equally important is what may well be regarded as the final formulation of the marginal utility analysis by J.R. Hicks of the marginal utility analysis of value in the concept of the marginal rate of substitution, based on the indifference curve technique introduced by Irving Fisher and F. Y. Edgeworth. This conception of varying rates of substitution or equivalence, wholly independent of any conception of measurable utility, may well be regarded as the ultimate statement of more than half a century's discussion in the tradition of the Austrian school....

Arguably, Hayek's claim about Mises leading the advance of subjectivism may not be mistaken *per se*, however, Mises's approach to grounding economic theory on a proper subjectivist foundation differed dramatically from that of Wieser and his followers.

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<sup>1</sup> On Wieser's approach, see Bostaph (2003).

## ECONOMIC CALCULATION AND SUBJECTIVISM IN HUMAN ACTION

In his *magnum opus*, *Human Action*, Mises subsumes subjectivist aspects of catallactics within the concept of economic calculation. The book is organized into seven parts containing 39 chapters. He devotes one entire part of the book, part 3, to economic calculation. It contains three chapters. In one of those chapters, Valuation without Calculation, we find Mises's discussion of the subjectivity of value. He did not offer insights about how the advance of the concept of subjectivity can make the general equilibrium framework more suitable to economic theorizing. Instead Mises focused on two fundamental principles concerning the subjectivity of value.

First, he juxtaposed the ordinal ranking inherent in valuation with cardinal numbers in which the goods being ranked are measured. He did this to demonstrate a principle of economic calculation. He wrote (Mises, 1998, p. 201):

The immediate goal of acting is frequently the acquisition of countable and measurable supplies of tangible things. Then acting man has to choose between countable quantities; he prefers, for example, 15 *r* to 7 *p*; but if he had to choose between 15 *r* and 8 *p*, he might prefer 8 *p*.... This is tantamount to the statement that he prefers *a* to *b* and *b* to *c*.... It certainly does not render reckoning with cardinal numbers possible. It does not open a field for economic calculation and the mental operations based upon such calculation.

Second, he referenced the principle he (Mises, 1998, p. 699) would call in his critique of socialist schemes to provide a method of economic calculation, "the fundamental theorem of modern economics," namely diminishing marginal utility. His purpose was, again, to make a fundamental point about economic calculation. Mises (1998, p. 206) wrote:

There is no method available to construct a unit of value. Let us remember that two units of a homogeneous supply are necessarily valued differently. The value attached to the *n*th unit is lower than that attached to the (*n*-1)th unit.

Mises (1998, p. 206) concluded this line of argument with the following words:

It is a fictitious assumption that an isolated self-sufficient individuals or the general manager of a socialist system, i.e., a system in which there is no market for the means of production, could calculate. There is no way which could lead one from the monetary computation of a market economy to any kind of computation in a nonmarket system.

In the subsection that closes out this section of the book, which Mises titled, "The Theory of Value and Socialism," Mises (1998, p. 207) wrote the following about subjectivism:

The illusion that a rational order of economic management is possible in a society based on public ownership of the means of production owed its origin to the value theory of the classical economists and its tenacity to the failure of many modern economists to think through consistently to its ultimate conclusion the fundamental theorem of the subjectivist theory.

## ECONOMIC CALCULATION AND THE PROBLEM OF ECONOMIZING

As noted above, Mises considered the "fundamental theorem of modern economics" diminishing marginal utility, which can be deduced from a person economizing with homogeneous units of a good. Although diminishing marginal utility is accepted by all modern economists, Mises was the first to perceive the implication of its reasoning for making economizing decisions about the use of resources in society and its application to this problem in socialism. Concerning the proposal of mathematical economists to solve the problem of economizing in socialism, Mises (1978, p. 112) wrote:

They failed to see the very first challenge: How can economic action that always consists of preferring and setting aside; that is, of making unequal valuations, be transformed into equal valuations, and the use of equations? Thus the socialist came up with the absurd recommendation of substituting equations of mathematical catallactics, depicting an image from which human action is eliminated for the monetary calculation in the market economy.<sup>2</sup>

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<sup>2</sup> Quoted in Salerno (1999, p. 58).

The deficiency in economic theory that needed correcting, according to Mises, was a fallacy economists held concerning economic calculation. Mises (1998, p. 202) wrote:

The elaboration of economic theory is heuristically dependent on the logical processes of reckoning to such an extent that the economists failed to realize the fundamental problem involved in the methods of economic calculation.... They misconstrued economic calculation. They took it for a category of all human action and ignored the fact that it is only a category inherent in acting under special conditions.... But they did not comprehend that money prices are the only vehicle of economic calculation. Thus most of their studies are of little use. Even the writings of the most eminent economists are vitiated to some extent by the fallacies implied in their ideas about economic calculation.

Contrary to Hayek, who thought that general equilibrium theory could be corrected by grafting subjectivist insights onto it, Mises perceived that the deficiency of the general equilibrium construct stemmed from its fallacious treatment of money. He identified two mistakes. First, the general equilibrium construct conceived of a market economy with only direct exchange and concomitantly asserted the neutrality of money. He wrote (Mises, 1998, pp. 203–204):

A serious blunder that owes its origin and its tenacity to a misinterpretation of this imaginary construction [a market with direct exchange] was the assumption that the medium of exchange is a neutral factor only.... This is, of course, what the fable of money's neutrality implies. The whole theory of catallactics, it was held, can be elaborated under the assumption that there is direct trade only. If this is once achieved, the only thing to be added is the "simple" insertion of money terms into the complex of theorems concerning direct exchange. However, this final completion of the catallactic system was considered of minor importance only. It was not believed that it could alter anything essential in the structure of economic teachings. The main task of economics was the study of indirect exchange.

Only later economists realized that some of the most important and most intricate problems of catallactics are to be found in the field of indirect exchange and that an economic theory which does not pay full regard to them is lamentably defective.

Second, Mises noted a more momentous error drawn from the imaginary construct of a fictitious barter world, namely, that value

is objective and can be measured by money.<sup>3</sup> He wrote (Mises, 1998, p. 205):

Even Friedrich von Wieser and Irving Fisher took it for granted that there must be something like measurement of value and that economics must be able to indicate and to explain the method by which such measurement is effected. Most of the lesser economists simply maintained that money serves as “a measure of values.”

Mises’s corrective of the deficiencies of general equilibrium theory was based on his integration of money into subjective-value theory. He demonstrated (Mises, 1953) in 1912 how ordinal ranks are transformed into cardinal numbers suitable for economic calculation in a market economy. Buyers and sellers have preferences for a good they intend to exchange relative to money. They exchange to acquire the mutual benefit latent in the reverse ordering of their preferences. Competitive bidding by the buyers and competitive offering by the sellers results in a market-clearing price. As Rothbard (1991, p. 65) recounts it:

In the course of that notable integration of monetary theory and “micro” marginal utility theory, Mises was one of the very first to realize that subjective valuations of the consumer (and of laborers) on the market are purely ordinal, and are in no way measurable. But market prices are cardinal and measurable in terms of money, and market prices bring goods into cardinal comparability and calculation (e.g., a \$10 hat is “worth” five times as much as a \$2 loaf of bread).

Mises did not fully work out this integration and its implications until the German-language predecessor of his *magnum opus*, *Human Action*.<sup>4</sup> In that work, he demonstrated that the market economy is the only solution to transforming rank orders of value into cardinal numbers suitable for making economizing decisions in a division of labor. Only three alternatives to the market solution of monetary prices exist, according to Mises.

One is inter-personal value comparisons among the participants in the division of labor. Yet, modern economists all agree that

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<sup>3</sup> Mises (1998, pp. 697–699) repeats his indictment of the general-equilibrium framework in chapter 26 in which he criticizes mathematical economists for perpetuating the fallacy that economic calculation was possible in socialism.

<sup>4</sup> See Rothbard (1991, p. 65) and Salerno (1999, p. 56).

inter-personal comparisons of value are impossible and therefore, this alternative is not entertained by modern economists as a solution to the economizing problem. A second alternative is imputation of value across the division of labor by a single person. Valuation, Mises argued, can be applied only to a self-sufficient economy, i.e., an economy in which a person is the producer of everything he consumes.<sup>5</sup> In this case, a single mind can integrate the use of its resources across the entire array of producer goods with which it acts. It does this by imputing the value of lower-order goods to those of higher order. According to Mises, however, a single mind cannot decompose the value of the end achieved into the value of each factor's contribution. He wrote (Mises, 1998, p. 332):

Valuation as it can be practiced by an isolated actor (Robinson Crusoe or a socialist board of production management) can never result in a determination of such a thing as quotas of value.... It is permissible to declare that, due allowance being made for time preference, the value attached to a product is equal to the value of the total complex of complementary factors of production. But it would be nonsensical to assert that the value attached to a product is equal to the "sum" of the values attached to the various complementary factors of production. One cannot add up values or valuations. One can add up prices expressed in terms of money, but not scales of preference.... The process of value imputation does not result in derivation of the value of the single productive agents from the value of their joint product. It does not bring about results which could serve as elements of economic calculation.

Mises insisted that in making economizing decisions about the use of resources in an extended division of labor, it is necessary to disentangle the contribution of each complementary factor of production used in producing each good. The necessity arises because factors of production are neither perfectly specific to each good nor perfectly non-specific among all goods. Absent either of those extreme conditions, economic calculation cannot be done by knowing only the value of goods of first order and the technical conditions of production of these goods. Which raises the third alternative: using the cardinal numbers of production possibilities as the basis for economic calculation. Although technical

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<sup>5</sup> As Mises (1998, p. 210) concedes, valuation is adequate to economizing resources within a family economy or that of a small tribe as well as a single person.



consideration allow the decomposition of the physical contribution to output made by each factor, these numbers have no connection to value of the ends attained. Mises wrote (1998, p. 208):

[The fact that] the various means allow for various uses, set man the tasks of allocating them to those employments in which they can render the best service. Here the computation in kind as applied by technology is of no avail. Technology operates with countable and measurable quantities of external things and effects; it knows causal relations between them, but it is foreign to their relevance for human wants and desires.... [Technology] ignores the economic problem: to employ the available means in such a way that no want more urgently felt should remain unsatisfied because the means suitable for its attainment were employed—wasted—for the attainment of a want less urgently felt.

In an extended division of labor, individual factors of production can be shifted from one line of production to another and configured in various combinations with other complementary factors of production in each production process. Therefore, to know whether or not a particular configuration of complementary factors of production will be more economizing for society than another configuration, prices of individual factors of production must exist. Mises (1998, pp. 209–210) wrote:

[The practical man] must know whether what he wants to achieve will be an improvement when compared with the present state of affairs and with the realizable projects which cannot be put into execution if the project he has in mind absorbs the available means. Such comparisons can only be made by the use of money prices.... Where there are no money prices, there are no such things as economic quantities. There are only various quantitative relations between various causes and effects in the external world. There is no means for man to find out what kind of action would best serve his endeavors to remove uneasiness as far as possible.

Mises concluded this line of inquiry by returning to the starting point in Robinson Crusoe, i.e., production in self-sufficiency instead of a division of labor. Crusoe could compare the value of output with the value of the complementary factors used because the possible combinations he can exploit are simple enough for

him to impute value adequately for economizing.<sup>6</sup> He wrote (Mises, 1998, p. 210):

There is no need to dwell upon the primitive conditions of the household economy of self-sufficient farmers. These people performed only very simple processes of production. For them no calculation was needed, as they could directly compare input and output. If they wanted shirts, they grew hemp, they spun, wove, and sewed. They could, without any calculation, easily make up their minds whether or not the toil and trouble expended were compensated by the product. But for civilized mankind a return to such a life is out of the question.

## ECONOMIC CALCULATION AND THE SCHEMES OF SOCIALISM

With his theory of economic calculation in hand, Mises critiqued the schemes of socialists to rationally allocate resources in chapter 26 in *Human Action*. Both the title of the chapter, “The Impossibility of Economics Calculation under Socialism,” and the summary list of schemes indicate Mises’s emphasis on economic calculation. He wrote (Mises, 1998, pp. 699–700):

The various schemes proposed can be classified in the following way:

1. Calculation in kind is to be substituted for calculation in terms of money....
2. Starting from the ideas of the labor theory of value the labor-hour is recommended as the unit of calculation....
3. The unit is to be a “quantity” of utility....
4. Calculation is to be made possible by the establishment of an artificial quasi-market....
5. Calculation is to be made with the aid of the differential equations of mathematical catallactics....
6. Calculation is to be made superfluous by resorting to the method of trial and error....

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<sup>6</sup> All of the combinations of factors of production can be valued by Crusoe through his own experience. Such cannot be done by a single person in a division of labor, especially the extended division of labor in a modern, capitalist economy.

All of these socialist schemes, except number 6, are attempts to have economic calculation under socialism. And Mises's critique of the socialist director using the method of trial and error to make economizing production and investment decisions relies on his views of economic calculation. He argued (Mises, 1998, p. 700) that economizing decisions fall into a category of trial and error in which "the only mark of the correct solution is that it has been reached by the application of a method considered appropriate for the solution of the problem." His example is solving a multiplication problem. He wrote (Mises, 1998, p. 700):

One may try to guess the correct result by trial and error. But here the method of trial and error is no substitute for the arithmetical process. It would be quite futile if the arithmetical process did not provide a yardstick for discriminating what is incorrect from what is correct.

In the case of economizing decisions, the only way to discover if trial and error has succeeded is by a computation of profit and loss. Mises wrote (1998, p. 701):

The problem of socialist economic calculation is precisely this: that in the absence of market prices for the factors of production, a computation of profit and loss is not feasible.

We may assume that in the socialist commonwealth there is a market for consumers' goods and that money prices for consumers' goods are determined on this market.... But the characteristic mark of the socialist system is that the producers' goods are controlled by one agency only in whose name the director acts, that they are neither bought nor sold, and that there are no prices for them. Thus there cannot be any question of comparing input and output by the methods of arithmetic.

Concerning the socialist scheme for a quasi-market, Mises noted that it represents the triumph of his approach to economics. He wrote (Mises, 1998, p. 702):

It is therefore nothing short of a full acknowledgement of the correctness and irrefutability of the economists' analysis and devastating critique of the socialists' plans that the intellectual leaders of socialism are now busy designing schemes for a socialist system in which the market, market prices for the factors of production, and catallactic competition are to be preserved. The overwhelmingly rapid triumph of the demonstration that no economic calculation is possible under a socialist system is without

precedent in the history of human thought. The socialist cannot help but admitting their crushing final defeat.

Finally, Mises made it perfectly clear that the defeat of socialism owed nothing to the mathematical economics of general equilibrium. The problem of directing the use of resources in an economizing manner must start with existing conditions, which are not those of equilibrium but have been brought about by both successes and failures of the past. Even if the final equilibrium configuration of resource allocation is known, the economizing problem remains: how to move step-by-step from existing conditions to those of final equilibrium. For the solution to this problem, the mathematical expression of the state of final equilibrium is of no use. Mises wrote (1998, p. 709):

Even if, for the sake of argument, we assume that a miraculous inspiration has enabled the director without economic calculation to solve all problems concerning the most advantageous arrangement of all production activities and that the precise image of the final goal he must aim at is present to his mind, there remain essential problems which cannot be dealt with without economic calculation. For the director's task is not to begin from the very bottom of civilization and to start economic history from scratch. The elements with the aid of which he must operate are not only natural resources untouched by previous utilization. There are also the capital goods produced in the past and not convertible or not perfectly convertible for new projects. It is precisely in these artifacts... that our wealth is embodied. Their structure, quality, quantity, and location is of primary importance in the choice of all further economic operations.... [The director] must try to take advantage of every piece of the already available capital goods in the best possible way.

## CONCLUSION

Mises's integration of money into the subjective theory of value did more than put monetary theory on solid ground. It set the entire body of economic theory on the causal-realist foundation laid by Carl Menger. Doing so required a reconstruction of price and production theory. Not merely grafting subjectivist elements onto general equilibrium theory, but rebuilding this theory from the bottom up. No better evidence of the soundness of this approach exists than Mises's demonstration that central planners

cannot allocate resources in an economizing manner in socialism for lack of economic calculation.

Since the second calculation debate made apparent Mises's achievement in providing a truly general theory of economics, the causal-realist approach has been advancing on several fronts. To mention just a few: business cycle theory has been refined (Salerno, 2012); the theory of entrepreneurship and organizational theory has been developed (Klein, 2010); the theory of cost has been reconsidered (McCaffrey, 2018); the theory of interest has been further considered (Herbener, 2011); and Mises's concept of entrepreneurial appraisalment has been extended (Herbener and Rapp, 2016).

## REFERENCES

- Bostaph, Samuel. 2003. "Wieser on Economic Calculation under Socialism," *Quarterly Journal of Austrian Economics* 6, no. 2: 3–34.
- Hayek, Friedrich A. 1992. *The Collected Works of F.A. Hayek, Volume 4: The Fortunes of Liberalism*, ed. Peter Klein. Chicago: University of Chicago Press.
- . 1955. *The Counter-Revolution of Science*. Glencoe, Ill.: The Free Press.
- Herbener, Jeffrey M. 2011. *The Pure Time Preference Theory of Interest*. Auburn, Ala.: Mises Institute.
- Herbener, Jeffrey M. and David Rapp. 2016. "Toward a Subjective Approach to Investment Appraisal in Light of Austrian Value Theory," *Quarterly Journal of Austrian Economics* 19, no. 1: 3–28.
- Klein, Peter. 2010. *The Capitalist and the Entrepreneur*. Auburn, Ala.: Mises Institute.
- McCaffrey, Matthew C. 2018. *The Economic Theory of Cost*. New York: Routledge.
- Mises, Ludwig von. 1912. *The Theory of Money and Credit*. New Haven: Yale University Press, 1953.
- . 1949. *Human Action: A Treatise on Economics*, Scholar's Edition. Auburn, Ala.: Mises Institute, 1998.

- . 1978. *Notes and Recollections*, trans. Hans F. Sennholz. South Holland, Ill.: Libertarian Press.
- Rothbard, Murray. 1991. "The End of Socialism and the Calculation Debate Revisited," *Review of Austrian Economics* 5, no. 2: 51–76.
- Salerno, Joseph. 1999. "The Place of *Human Action* in the Development of Modern Economic Thought," *Quarterly Journal of Austrian Economics* 2, no. 1: 35–65.
- . 2012. "A Reformulation of Business Cycle Theory in Light of the Financial Crisis," *Quarterly Journal of Austrian Economics* 17, no. 1: 3–44.

## REVIEW ESSAY

### *GLOBALISTS: THE END OF EMPIRE AND THE BIRTH OF NEOLIBERALISM*

QUINN SLOBODIAN

CAMBRIDGE: HARVARD UNIVERSITY PRESS, 2018, X + 381 pp.

DAVID GORDON

Quinn Slobodian, a historian at Wellesley College, tells us that *Globalists*

is a long-simmering product of the Seattle protests against the World Trade organization in 1999. I was part of a generation that... became adolescents in the midst of talk of globalization and the End of History... we were made to think that nations were over and the one indisputable bond uniting humanity was the global economy. Seattle was a moment when we started to make collective sense of what was going on and take back the story line... This book is an apology for not being there and an attempt to rediscover in words what the concept was that they went there to fight. (p. 303)

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Slobodian discloses here a confusion that mars his book. He sees little difference between the free market and a governmentally imposed regime of globalization. Rule over the European economy by Brussels bureaucrats and attempts to control world trade by the WTO and the World Bank stem from a "Geneva School" that includes Ludwig von Mises. His view must at once confront an objection. Mises supported a complete free market, with a minimal state; how then can he have helped bring about a globally directed economy? Slobodian's answer is this: Mises wished to use force to compel people to accept a system of private property, run in the interests of business. He professed to favor freedom but in fact supported coercion. The distance between Mises and global governance of the economy, which likewise imposes its plans on people, is not far.

Friedrich Hayek counts even more than Mises as a supporter of this line of thought, and many contemporary neoliberals have been influenced by him. Like Mises, he wanted to limit democracy to promote private property and the market. Hayek, though, countenanced more government intervention than Mises. Slobodian, by the way, cites Hans Hoppe's criticism of Hayek for this, (p. 315, note 2), though he has missed Mises's review of Hayek's *The Constitution of Liberty* (2011 [1960]), dealing with same issue.

As Slobodian sees matters, the rise of colonial peoples to independence in the twentieth century posed a problem for those, like Mises and Hayek, committed to capitalism. What would happen if the new countries, dissatisfied with what they viewed as exploitation by the developed countries, enacted restrictions on trade? Combined with this was a threat to business interests by anti-capitalist classes and parties in the developed world. What if, e.g., socialists won power in a democratic election?

To prevent these dire developments, Mises and Hayek promoted world federalism. The power of national governments to control the free market would be strictly limited. Property rules would be a matter of international law, enforced by a central authority.

Slobodian merits great credit for his detailed account of Mises and Hayek's interest in world federalism, but he fails to grasp the fundamental issue motivating what they said. For Mises, the free market was the only viable system of social cooperation.



Accepting it fully would bring peace and prosperity. Government interferences with the economy would necessarily fail to achieve their purpose. Price controls would not make goods available to the poor but would instead cause shortages. Socialism would collapse into chaos.

For Mises, these were incontrovertible truths established by economic science. The issue for him was not imposing economic freedom on people by force, but rather persuading them that freedom was the best course of action. Constitutional limits to democracy, including federalist plans, were strictly subordinate to promoting the free market. Mises does not say that he favored forcing people to accept these limits, if they were to vote freely against them. Violent attempts to overthrow a legal system of private property are an altogether different matter. It is hardly "undemocratic" to oppose them.

Slobodian does not agree. For him, to suppress violence against property is undemocratic. Mises claimed that the free market was controlled by the monetary votes of consumers, but Slobodian finds this freedom lacking: "[D]emocracy was not an absolute value for Mises... a crucial complement to voters' democracy was what he would later call a 'consumer's democracy,' expressed by purchases and investments in the marketplace... Wealth, he wrote, was 'always the result of a consumer's plebiscite.'" (p. 45) But when the Social Democrats called a general strike in Vienna in 1927, Mises supported its violent suppression. Does this not show his commitment to democracy was limited? "In 1927, democracy had ceased to fulfill its primary function. It did not prevent revolution. In that case, Mises believed, it was perfectly legitimate to suspend it and enforce order by other means." (p. 45)

Contrary to Slobodian, Mises's position was perfectly consistent. Mises supported peaceful cooperation through the free market. Political democracy, in his view, promoted peace. But it is not undemocratic to use emergency powers to suppress violence.

For Mises, schemes for international organization were intended only as means to promote the free market. When Mises realized that in the statist climate of the day, these plans could not work, he for the most part abandoned them. In *Omnipotent Government*, e.g., he says: "Under present conditions an international body for

foreign trade planning would be an assembly of the delegates of governments attached to the ideas of hyper-protectionism. It is an illusion to assume that such an authority would be in a position to contribute anything genuine or lasting to the promotion of foreign trade." (Mises, 2010 [1944], p. 250)

Slobodian does not see what is at stake in the dispute over the free market because, for him, economic arguments for the market are mere business propaganda. He does not grasp that the argument for free exchange follows from elementary economy theory. People would not willingly engage in trade if they did not expect to benefit. This consideration by itself strikes a fatal blow at tariffs and other trade restrictions.

Slobodian ignores this and, displaying both his fascination with Hayek's thought and his repulsion from it, he takes the case for the free market to be complex and mystifying. "Yet even as he [Hayek] disparaged the fallacy of computer-aided models, he drew inspiration from the same source of system theory. From the language of 'pattern predictions' to his citation of Warren Weaver, Hayek did not argue against system theory in his Nobel speech but with it." (p. 225)

In trying to establish a line of continuity between the "Geneva School" and today's global bureaucrats, Slobodian places great stress on the "Ordo liberals." This group, which included Franz Böhm and Walter Eucken, favored a very active government to promote the social institutions for a "social market economy." Many of these authors were influenced by Hayek, but in his erudite discussion, Slobodian has missed the fact that Mises had little use for them. As Guido Hülsmann points out in *Mises: The Last Knight of Liberalism*, "And the prospect of cooperating with the fashionable Ordo School, be it in the Mont Pèlerin Society or elsewhere, did not exactly warm his heart either. He believed the Ordo people were hardly better than the socialists he had fought all his life. In fact, he eventually called them the 'Ordo-interventionists.'" (Hülsmann, 2007, p. 1006)

The book contains many strengths. The discussion of the activities of Maurice Heilperin, an outstanding supporter of free trade, is especially well done. Slobodian displays a fine eye for architectural detail, evident, e.g., in his description of the Chamber of Commerce building on Vienna's Ringstrasse. (pp. 30–31)

That said, the book also has its share of errors. Harold Laski was a political scientist, not an economist (p. 96). Garrett Hardin was a biologist, not a philosopher (p. 239). Hans Kelsen was not among the Austrian elite who moved in the 1930s in the same circles as the British elite (p. 122). Arthur Balfour is given the wrong title (p. 39).

The book's main failing, though, does not lie in these minor errors. It lies rather in Slobodian's refusal to take seriously arguments for the free market. Limits on government control of property are for him simply ideological efforts by business to limit the popular will. He here adopts exactly the viewpoint of Nancy MacLean's *Democracy in Chains*, a disaster for scholarship. Slobodian operates on a much higher level than she does, though he does not scruple to cite her book.

## REFERENCES

- Hayek, Friedrich A. 1960. *The Constitution of Liberty*. Ronald Hamowy, ed. Chicago: University of Chicago Press, 2011.
- Hülsmann, Jörg Guido. 2007. *Mises: The Last Knight of Liberalism*. Auburn, Ala.: Mises Institute.
- MacLean, Nancy. 2017. *Democracy in Chains: The Deep History of the Radical Right's Stealth Plan for America*. New York: Viking Penguin.
- Mises, Ludwig von. 1944. *Omnipotent Government: The Rise of the Total State and Total War*. Auburn, Ala.: Mises Institute, 2010.

## REVIEW ESSAY

### *T.R.M. HOWARD: DOCTOR, ENTREPRENEUR, CIVIL RIGHTS PIONEER*

DAVID T. BEITO AND LINDA ROYSTER BEITO  
OAKLAND: INDEPENDENT INSTITUTE, 2018, XXII + 339 PP.

JASON JEWELL

A frequently debated topic among African-Americans in the 20th century was the relative merits of the improvement strategies proposed by Booker T. Washington (c. 1856–1915) and W.E.B. DuBois (1868–1963). Washington, a former slave and later head of the Tuskegee Institute, urged a non-confrontational program of self-discipline and economic improvement within the black community during the era of Jim Crow. DuBois, a professor at Atlanta University and one of the founders of the NAACP, favored economic improvement, to be sure, but also alleged the need for political activism against policies of racial segregation and *de facto* inequality. Many, if not most, prominent African-Americans came down clearly in favor of the strategy of one intellectual or the other. By contrast, T.R.M. Howard (1908–1976),

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the subject of David and Linda Beito's biography, embodied both approaches at different times during his remarkable career.

David Beito, a professor of history at the University of Alabama, has published several books on classical liberal and libertarian themes since the 1980s, including *From Mutual Aid to Welfare State: Fraternal Societies and Social Services, 1890–1967* (2000), which describes the robust network of mutual aid in the United States a century ago and its gradual crowding out by the state. His wife, Linda Royster Beito, is a professor of social sciences at Stillman College. Together the Beitos have co-authored many articles and essays with a classical liberal flavor since the late 1990s. They originally published their biography of Howard in 2009 with the University of Illinois Press under the title *Black Maverick*. This new edition, published by the Independent Institute, includes an afterword by the authors as well as a foreword by Jerry Mitchell, the journalist whose investigative reporting in the 1980s and 1990s led to murder convictions in several “cold cases” from the Civil Rights Era in Mississippi. The subtitle of the 2018 edition stresses elements of Howard's life, especially his entrepreneurship, that will appeal to classical liberals and libertarians.

By any measure, T.R.M. Howard's life and career were dramatic, with many twists and turns along the way. Born into poverty in the “Black Patch” area of southwestern Kentucky and northwestern Tennessee, Howard in his youth converted to Seventh-Day Adventism and embraced its rigorous ethic of self-discipline and clean living. He found white patrons in the church who sponsored his education and eventual training to become a physician. Although Howard eventually drifted away from the SDA church, its influence on his life and early career was crucial. His move to southern California in the early 1930s to attend its College of Medical Evangelists was what brought him into contact with socialite Helen Boyd, whom he eventually married. Boyd's family in turn made introductions that led to Howard's writing regularly for the *California Eagle*, Los Angeles's largest black newspaper, helping to establish his reputation as a civil rights leader.

Upon completing his medical training, Howard spent several years at Riverside Sanitarium, an SDA hospital in Nashville, Tennessee, and also maintained a private practice while continuing to speak to churches and civic groups about civil rights. In 1941, he accepted

an invitation to become chief surgeon at a new hospital in Mound Bayou, Mississippi, an all-black town in the state's Delta region. It was in Mound Bayou that Howard became a wealthy man through both his medical practice and entrepreneurial activities in banking, insurance, and agriculture. In fact, the Beitos claim that Howard became one of the most prosperous black farmers in Mississippi, with over 1,000 acres to his name and dozens of tenant farmers who resided on his land. In Mound Bayou, Howard also built a recreational center, which included a restaurant managed by his wife.

During his early career, Howard took a stance on civil rights that could plausibly be called conservative. The Beitos provide a number of quotes demonstrating his admiration for Booker T. Washington's philosophy and willingness to work within a regime of racial segregation provided that the doctrine "separate but equal" actually resulted in equal public accommodation for blacks. Howard received considerable, favorable attention in the white press for his emphasis on black self-improvement and economic development. His early political activity in Mississippi, as seen in his organization of the Regional Council of Negro Leadership in 1951, did not directly challenge the status quo.

However, Howard eventually became more confrontational in his advocacy for civil rights. He publicly decried persistent inequalities in Mississippi such as the mismatch in publicly funded education for white and black children and the legal system's effective failure to prosecute crimes against black victims (whether the perpetrators were white or black). Whites in the Delta began to take more notice of Howard when he helped lead an effective economic campaign against gas stations that did not provide restrooms for black customers. Activities such as these helped expose the contradictions and weaknesses in a system that paid lip service to, but failed to deliver on, the "separate but equal" doctrine; the Beitos call it a "weaving together [of] pragmatism and radicalism." (p. 99)

Racial tensions in Mississippi continued to mount in the wake of the 1954 *Brown v. Board of Education* ruling, and the Beitos ably document Howard's continued campaigns of economic and political pressure in opposition to the white "Citizens' Councils" that had formed in an effort to preserve the racial *status quo*. Howard gained national recognition even as a spate of murders of civil rights leaders in Mississippi made his life more dangerous.

Then the murder of Emmett Till and the subsequent trial put Howard into the spotlight. His home became a sort of “command center” for the prosecution’s allies, featuring armed guards and a security checkpoint. Till’s mother stayed there. Journalists and civil rights activists from around the country visited. Howard actively sought out witnesses for the prosecution, offering them protection and (if necessary) relocation to Chicago following the trial. The eventual acquittal of the two defendants by a prejudiced jury was no surprise to anyone, and a white backlash against Howard (including attention from the FBI, which Howard had publicly criticized) finally pressured him to leave Mississippi the following year. However, by that point he was very popular in the national black press and well positioned for his transition out of the region.

Howard joined the Second Great Migration of black Americans out of the South, relocating to Chicago, which was experiencing an explosion of its black population at that time. There he established a new medical practice and continued his efforts on behalf of civil rights, mounting an ultimately unsuccessful candidacy for Congress as a Republican in 1958. He also became one of Chicago’s most prominent providers of illegal abortions. According to the Beitos, by the early 1960s Howard was performing around six abortions per day on both black and white women in addition to the more licit activities of his medical practice. Howard’s success in bribing local law enforcement kept him out of trouble for the most part, and physicians in states where abortion was legal consulted with him on the practice. He lived to see abortion in Chicago legalized as a result of the Supreme Court’s *Roe v. Wade* decision in 1973. Howard died in 1976 with his final major project, the Friendship Medical Center, in serious financial trouble. Its pending failure meant that Howard left almost nothing to his surviving family members, despite his having made so much money over the course of his life.

A strength of the Beitos’ narrative is the soundness of the economic analysis at several points. (This feature should never be taken for granted when reading most historians’ writing.) For example, when discussing the socio-political context into which Howard was born, the Beitos provide a clear description of the attempt by large farmers in the Black Patch to cartelize tobacco production via the “Planter’s Protective Association” and the violence that eventually resulted from the plan. Later discussion of Howard’s entrepreneurial

activities is refreshingly free of the anticapitalist tone so commonly found in histories of business and businessmen.

*T.R.M. Howard* is well sourced, featuring frequent citations of interviews conducted by the authors along with archival evidence from newspapers, court documents, and private papers. In an age of hyper-partisanship, academic biographers are not always immune to the temptation to portray their favored subjects in a hagiographic manner. Commendably, the Beitos resist this urge with respect to Howard, giving the reader a “warts and all” portrait. While clearly admiring of Howard’s efforts on behalf of civil rights and entrepreneurial achievements, they do not shy away from a frank treatment of his severe character defects, most notably his frequent extramarital affairs and treatment of the women who bore his numerous out-of-wedlock children. (Helen Howard was unable to bear children.) Progressives drawn to Howard’s civil rights activism and heroics during the Till trial must contend with Howard’s Republican politics and penchant for big-game hunting. Conservatives who admire Howard’s entrepreneurship and disdain for government handouts must confront his gambling habit and willingness to perform illegal abortions for profit. In fact, the Beitos plausibly point to this impossibility of appropriating Howard wholly for partisan purposes as a likely reason for why he has received relatively little scholarly attention in recent decades.

*T.R.M. Howard* offers a corrective to overly simplistic narratives about the civil rights era and African-American history more generally. The Beitos convincingly show that figures like Howard could and did accumulate and deploy economic resources in significant ways to defend their communities’ interests against state-sponsored injustices and to bring about social change. The philosophies of both Booker T. Washington and W.E.B. DuBois found effective expression in the life and career of this remarkable entrepreneur.

## REFERENCES

- Beito, David. 2000. *From Mutual Aid to Welfare State: Fraternal Societies and Social Services, 1890–1967*. Chapel Hill: University of North Carolina Press.
- Beito, David, and Linda R. Beito. 2009. *Black Maverick: T.R.M. Howard’s Fight for Civil Rights and Economic Power*. Champaign, Ill.: University of Illinois Press.



## REVIEW ESSAY

### *THE ECONOMIC THEORY OF COSTS: FOUNDATIONS AND NEW DIRECTIONS*

MATTHEW McCaffrey, Ed.

LONDON AND NEW YORK: ROUTLEDGE, 2018, XIV + 270 pp.

KARL-FRIEDRICH ISRAEL

This collection of essays edited by Dr. Matthew McCaffrey deals with one of the most fundamental fields of economic research: *The Economic Theory of Costs*. Indeed, it is so fundamental because of its close connection to all other central areas of research in theoretical economics, such as the theory of choice, value, price, capital, production, risk, uncertainty, and entrepreneurship. All of these are covered in some way in the book.

It spans over 263 pages and is separated into five parts, each containing two essays. Only the last part includes a third essay by the editor himself. Almost all of the eleven chapters are published for the first time in this collection and constitute pieces of original

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research. The one exception is chapter 4. It contains the first but ultimately discarded draft of Rothbard's fifth chapter for *Man, Economy, and State* that was uncovered in the Rothbard archives at the Mises Institute a couple of years ago by Dr. Patrick Newman. He has re-edited and published it previously in this journal (Rothbard and Newman, 2015).<sup>1</sup>

McCaffrey sets the stage with an introductory chapter, explaining that the contributions contained in the volume stand in the "causal-realist" tradition (McCaffrey 2018, p. 2), which is closely related to the distinctly Mengerian variant of the *Marginalist Revolution* and the research program that emerged out of it: Austrian economics. The purpose of the book is "to showcase a variety of research strands within the modern Mengerian tradition that relate in some way to the theory of cost" (p. 3). Menger and his intellectual heirs reconstructed economic theory on thoroughly subjectivist grounds, showing that costs in their various forms are derivatives of the subjective values of ends pursued or foregone. The subjective nature of costs is highlighted directly in the first part of the book entitled "Cost and Choice." From there on the contributions proceed to different areas, applying the basic insights of the theory of costs to some relevant theoretical problems. We will go over them in the order maintained in the book, expanding on a number of selected issues that are of particular importance according to the undoubtedly subjective assessment of the reviewer.

## PART 1 – COST AND CHOICE

In the first chapter of the book, Dr. Jonathan Newman clarifies some of the foundations of the notion of costs, which he ultimately always considers to be opportunity costs. In particular,

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<sup>1</sup> In the volume it is also indicated that chapter 5 by Dr. Guido Hülsmann is a reprint of an earlier publication in the *Quarterly Journal of Austrian Economics*. This is incorrect. Hülsmann's essay has only been published very recently as a GRANEM working paper (Hülsmann, 2017). The provided reference actually corresponds to the earlier publication of Rothbard's draft chapter (fn. \*, p. 144). The page numbers in the earlier reference to the first publication of the draft chapter given in the book are wrong (fn. \*, p. 126). The reviewer earnestly promises that the rest of the review will be less pedantic. In fact, these are the only errors of this sort that have been spotted.

he highlights their subjectivity and forward-looking nature: "The ordinality and subjectivity of preferences applies to both value and cost. Just as value is appraised in action *ex ante*, so are costs" (p. 12). An opportunity cost, in this *ex ante* sense, is the subjective value of the next best perceived alternative course of action, all expected consequences taken into account.

Newman identifies two common but contradictory notions of opportunity costs in the standard literature. The first simply defines them as the subjective value attached to the next best choice alternative. According to the second they are objective physical production trade-offs. Both notions are typically presented side by side in modern standard textbooks. This might account, as Newman persuasively argues, for some of the confusion on the topic identified in the literature and by experimental research (Ferraro and Taylor, 2005).

Probably more interesting for readers of this journal, however, is Newman's discussion of George Reisman's stance on opportunity costs as well as the recent back-and-forth between Dr. Eduard Braun and Dr. David Howden on the topic (Howden, 2015, 2016b, 2016a; Braun, 2016a, 2016b). Howden criticized Braun in a review of his book *Finance Behind the Veil of Money* (Braun, 2014), for among other things abandoning the opportunity cost concept. This critique triggered the debate. Newman sides with Howden and reiterates and expands on his convincing arguments for why the notion of opportunity costs, understood as forward-looking subjective expectations of the value of alternative courses of action, is important and useful to analyze human choice. Howden also showed why the *ex post* evaluation of opportunities is indispensable to find out whether one could have done better than one actually did. Yet these points are not even disputed by Braun. Both Howden and Newman fail to appreciate the actual problem hinted at in Braun's analysis, namely, the identification of profit in human action and, more specifically, the *ex post* identification of monetary profits.

Taking *ex post* opportunity costs as the relevant benchmark for identifying monetary profit leads to a very strange result: A profit could only be made if one had actually invested in the best (or shall we say *most* profitable) project out there. Imagine tech investor Pete who happens to have picked the project *FB* for his investment. *FB* turns out to be the best among all the projects. Pete strikes it rich

and actually makes a monetary profit. The latter is determined by the difference between the generated monetary income from *FB* and the unrealized monetary income Pete could have earned by investing an equal amount of money in the next best alternative.

Now assume that instead it turned out that there was an even better project. Let us call it *Twtr*. It has generated, for some other investors, an even higher monetary return than *FB*. This means that Pete would have made a loss instead, as Reisman and Braun lament by providing a number of other examples of this kind. Under this notion of opportunity costs, only investments in *Twtr* would have generated a monetary profit. This led Braun to focus instead on costs understood as historically incurred monetary outlays for his analysis of financial markets and interest rates. In fact, Newman implicitly acknowledges that Braun has a point when he considerably narrows down the applicability of the opportunity cost concept by stating “that opportunity costs cannot be identified in hindsight and that opportunity costs may only be identified for one choice at a time” (p. 20). If that is so, then good for Braun that he got rid of it for his purposes.

Moreover, it is not quite correct to accuse Braun of denying the importance of alternative uses of resources and foregone opportunities altogether. They are precisely what determines the monetary outlays necessary to acquire the means of production for any given investment project. The higher the expected subjective value of the alternative ends, to the attainment of which those factors could have been dedicated instead, from the perspective of the relevant market participants, the higher will be their money prices, and hence the monetary outlays necessary for the realization of the project.<sup>2</sup> The investor thus has to compensate for the alternative ends forgone. Costs understood as monetary outlays are indeed, in this very important sense, opportunity costs.

In the second chapter of McCaffrey’s book, Dr. Joseph Salerno presents a very dense theoretical discussion of the “unitary valuation process” (p. 32) that gives rise to money prices paid for goods on the market. He tries to show why there is no such thing as an income effect as a result of price changes along the demand

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<sup>2</sup> This argument is made, for example, in chapter 10 of the book by Dr. Per Bylund.

curve for a specific good in causal-realist price theory, and thus responds to a long-standing debate in neoclassical economics.

He argues first of all, following the causal-realist approach to price theory, that an individual's demand curve for a certain good is a higher-order abstraction. It can be derived on the basis of an ordinal value scale, on which all relevant goods including money are ranked, as well as the existing stocks of these goods in possession of the individual at the given moment. Second, the ranking of money relative to other goods presupposes a given purchasing power—"or rather, a definitely anticipated purchasing power of money" (p. 36). In other words, the purchasing power of money has to be held constant in order to derive the demand curve at the given moment in the first place.

All that happens in response to changes in prices along the demand curve are then substitutions with other goods according to the value scale of the agent. There is no income effect, or as Salerno terms it, *purchasing power effect*, because a given purchasing power is a prerequisite for the derivation of the demand curve. The income effect is then merely an "illusion" (p. 35) stemming from the misapplication of demand curves.

However, the reviewer is puzzled by the question of how a price change could be possible without also changing the purchasing power of money. If the purchasing power of money is to be understood as the array of goods that can be bought with a given amount of money, then surely a price change for some good necessarily changes the purchasing power of money. But if a constant purchasing power is presupposed for the derivation of a demand curve, must the very idea of a price change along a given demand curve then not be considered bogus? Rather, under these assumptions, an exogenous change in the supply curve of a good that causes "price changes along the demand curve" must also trigger an alteration of the demand curve itself, to the extent that the subjective value of money changes in light of changes of its purchasing power.

To the reviewer it seems wrong to assume that the purchasing of money as such needs to be held constant in order to construct the demand curve for a specific good. Rather, one has to hold constant the purchasing power of money *with respect to other goods* and of

course the actor's subjective value scale. In other words, the *opportunity costs* of spending money on the specific good for which the demand curve is derived need to be held constant. If that is done, there seems to be a way to reconcile a kind of "income effect" with causal-realist price theory. In the reviewer's eyes, a better term would be "wealth effect."<sup>3</sup>

Salerno goes on to show why his result does not contradict the possibility of a backward-bending labor supply curve. The latter is possible without an income effect, solely on the basis of the law of marginal utility and a given value scale on which leisure is ranked against money balances. Salerno thus counters a critique raised by Caplan (1999) against Rothbard's denial of the income effect, while still assuming that the backward-bending supply of labor is possible.

## **PART 2 – THE EVOLUTION OF CAUSAL-REALIST PRODUCTION THEORY**

The next two chapters are dedicated to production theory in the causal-realist tradition. Dr. Patrick Newman provides a review of Rothbard's evolving thought on the topic in chapter 3, which is geared to Rothbard's original draft chapter on production theory for *Man, Economy, and State* (Rothbard 2009), republished as chapter 4 in this volume. Rothbard ended up thoroughly revising his production theory and rejected this early version of the chapter. It therefore illustrates the evolution of Rothbard's thought on the topic. Newman's accompanying chapter is of great value for the student as well as the historian of economic thought as a brief comparative outline of different approaches to production theory.

Rothbard's original draft chapter is much closer to the Marshallian partial equilibrium approach to production theory, although it already emphasized a number of weaknesses, such as the fact that one cannot develop a robust theory of investment from the perspective of an isolated firm. Rothbard's final theory of production, however, adopts an Austrian general equilibrium approach as described by Newman. The latter is distinct from the

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<sup>3</sup> This idea is further developed in Israel (2018).

Walrasian general equilibrium approach and essentially characterized by four features.

First, Rothbard rejects the conceptual distinction between competitive and monopoly prices for the analysis of a market economy as being arbitrary. The formal conditions that define a competitive situation are never met in the real world. As Rothbard pointed out even in his earlier draft chapter: "In this interpretation, every seller of an individualized commodity is a 'monopolist'" (p. 85). Second, no firm can be a mere price taker. Every firm has some impact on the prices of its products and in that sense always acts under imperfect competition in neoclassical standard terminology.

Third, the standard isocost-isoquant derivation of factor demand curves is rejected as it obfuscates the causal link of price determination that runs from the money prices of the final product to the prices of the factors of production by backward imputation. In the causal-realist analysis, actual and expected output prices explicitly determine the capitalist-entrepreneur's willingness to pay for factors of production according to their discounted marginal revenue product.

Lastly, the perspective taken in causal-realist production theory is not the one of a manager of some selected firm who in isolation—that is, at specified and constant factor costs—expands production until marginal revenue equals marginal costs. Instead, the vantage point of the capitalist-entrepreneur is taken, who can invest in a variety of different lines of production, which in a dynamic setting will have unequal rates of return. For any individual project it might therefore not be optimal to actually expand production to the point of optimality derived in the Marshallian partial equilibrium approach.

### **PART 3 – RISK, UNCERTAINTY AND COST**

In chapter 5 of the book, entitled "The Myth of the Risk Premium," Dr. Guido Hülsmann sets out to defend a rather bold theoretical claim. He argues that

the prevailing conception of risk as related to the gross rate of interest is ill-founded. It is wrong to conceive of the gross interest rate as the sum of separate components. A closer analysis reveals that the whole idea of

a risk premium within the gross rate of interest is a myth and should be discarded from economic science. (p. 134)

His analysis of risk is based on the Misesian distinction between class and case probability as well as the principle of subjective value. The most fundamental claim in Hülsmann's essay is that probability is not an ontic category, but an epistemic one—that is, probability and more specifically risk is nothing out there in the real world, but it instead refers to our imperfect state of knowledge about the latter. The real world and its transformation is simply what it is: "It is subject to the inexorable laws of cause and effect" (p. 136). These laws are not risky or probable as such, but there is risk involved as far as our knowledge and value judgments about them are concerned.

Case probability refers to the type of imperfect knowledge relevant in the sciences of human action. It refers to cases where actors know some causal relationships, but they know neither all of the related causal chains nor everything there is to know about the relationships that they are aware of, such as their relative importance as compared to other casual factors. Hülsmann explains that subjective value judgments function as a filter through which our partial knowledge becomes relevant for human action. To the extent that one subjectively conceives of a case-probable risk associated with some investment project—that is, a factor that would negatively change its outcome—one attempts to eliminate or diminish that risk as far as possible. At the same time, one tries to amplify the factors that positively influence the outcome. This is the task of entrepreneurship or, as Hülsmann calls it, "the production of success" (p. 138). To the extent that subjectively conceived case-probable risks cannot be eliminated, they have an impact on one's *ex ante* subjective assessment of the future value of that investment, and on the assessment of the marginal value product of related factors, but it has no impact on the discounting of these values as such.

Hülsmann argues that the differences in observable gross interest rates can thus not be explained by a risk premium as part of the gross interest rate. Instead, they simply "result from different subjective appreciations of available investment opportunities" (p. 142). He concludes that



the risk component in the gross interest rate is a sort of optical illusion. Different prices for different assets result from the fact that buyers and sellers appreciate them subjectively. From a microeconomic perspective, the implied differences in yield might be called risk premia. And one might use such premia in computations with an internal interest rate, to distinguish more interesting ventures from less interesting ones. But this does not alter the fact that the idea of a risk premium is an intellectual short-cut. It does not correspond to any real object. (p. 144)

The following essay by Dr. Jeffrey Herbener presents the theory of cost as an “example of the mistreatment of time in economic analysis” (p. 147). He incorporates cost curves, which Rothbard thought would not add anything, into the causal-realist framework of the analysis of production decisions and factor pricing. Herbener uses them very effectively to illustrate two implications of the passage of time.

In a pedagogically useful reconstruction of the theory of factor pricing, he first contrasts the timeless neoclassical general equilibrium theory, in which prices of factors of production correspond to the factor’s *marginal revenue product* and are determined simultaneously with final output prices, with the Austrian analysis of price determination in the evenly rotating economy (ERE). The latter takes production time, or the *time structure* of production, into account. Hence, factor prices correspond to the *discounted marginal revenue product* (DMRP). Future output prices determine the capitalist-entrepreneur’s demand for factors of production and thus determine factor prices in the present. Since there is no uncertainty in the ERE, the capitalist-entrepreneur’s factor demand is always such that the money prices paid for the factors used in production correspond to the DMRP and are thus consistent with future output prices. Any change in consumer preferences alters the equilibrium state as output prices change and hence factor demand and factor prices adjust accordingly.

As Herbener points out: “In actual markets, this adjustment process is rarely, if ever, completed, because the underlying causal factors are continuously changing” (p. 160), and because there exists *uncertainty* of the future. Uncertainty is the second implication of the passage of time for the theory of costs. The passage of time implies change, and change implies uncertainty. According to Herbener, this had not yet been satisfactorily incorporated into

the theory of cost in the causal-realist tradition (pp. 160, 165). Capitalist-entrepreneurs discount the MRP, but in the real world they can only anticipate the latter. Hence, factor prices in the present are determined by the factor's *anticipated discounted marginal value product* (ADMRP).

It is in Herbener's words the "spectrum of foresight possessed by the various entrepreneurs" (p. 166) that determine the "speed and accuracy" of the adjustment process toward the equilibrium state as well as the distribution of profits during that process. As he summarizes:

Those with superior foresight move earlier into what prove to be profitable lines of production and earn profits which will then be capitalized into the prices of assets more specific to that line of production as the less-astute entrepreneurs follow suit. Even when the adjustment process reaches its climax and no additional profit can be earned from a further expansion of production because cost structures have been pushed up by rising prices for the more-specific assets used, the entrepreneurs with superior foresight will have earned capital gains by buying the more-specific assets earlier in the process than less-astute entrepreneurs. (p. 166)

## **PART 4 – CAUSAL-REALIST PRICE THEORY: DEBATE AND SYNTHESIS**

Chapter 7 of the collection contains a revision of the theory of monopsony, a concept that has been dismissed almost completely by both Mises and Rothbard. Dr. Xavier Méra argues that they and their followers "may have gone too far" (p. 170). Méra offers a brief overview of theories of monopsony, arguing that the new standard theory is essentially at a dead end in that it defines a monopsony in very much the same way as a monopoly is commonly defined, namely, in terms of a deviation from the pure and perfect competition model—that is, a situation in which supply and demand schedules from the perspective of the individual buyers and sellers, respectively, are less than perfectly elastic. Méra argues that this criterion "implies a nirvana fallacy," since "such perfection is beyond anybody's reach" (p. 174). Instead, in Rothbardian spirit, monopolies and monopsonies are to be regarded as the result of government intervention, whereby sellers or buyers are granted

privileges over potential competitors. The consequences are to be analyzed in terms of more or less elastic supply and demand curves and how the interventions affect these elasticities.

Elaborating on one of his earlier publications on the topic (Méra, 2010), he argues that, when dealing with a producer, monopoly and monopsony are separable from each other only in so far as there could exist perfect competition on the other markets—that is, either the factor markets in case of a monopolist or the output markets in case of a monopsonist. Since perfect competition never exists, a producer is always both a monopolist and a monopsonist, or indeed neither of the two. A monopsony privilege on the factor markets always amounts to some form of monopoly privilege on the output market, albeit not in the absolute sense, and *vice versa*. Méra explains:

If it is often noticed that a monopoly is a monopsony or a monopsony is a monopoly, this is rarely considered a necessity. And it is true that, with an exclusive grant of monopoly privilege on the sale of a good, one may be its sole seller while still one among many buyers of its non-specific factors of production. However, even in this case competition is hampered on the factors' markets since no competitor is allowed to hire them for the production of the monopolized good. With an exclusive grant of monopsony privilege, one may be the sole buyer of a factor of production while still one among many sellers of a good it helps to produce, provided this factor is not indispensable to its production. Yet even in this case competition is hampered in the product market, because competitors are not allowed to produce the product using this factor. (p. 178)

The important question is to what extent the granted privileges increase the price differential between factors of production and output in response to a restriction of output and factor demand, and thus to what extent they allow for monopoly-monopsony gains. Thus, Méra develops a “theory of monopoly price-gap” (p. 176).

In his discussion of non-specific factors (e.g., labor), Méra makes a very valuable theoretical contribution within the causal-realist framework. He shows that a monopolist-monopsonist could conceivably push money prices even for non-specific factors (e.g., wages) under certain conditions below the market-clearing rate. If the demand for the output that the monopolist-monopsonist sells is *inelastic*, then the buyers' overall sum of money spent on

that output will increase in response to a restriction of supply. This implies a reduction of money spent on other goods. The selling prices of those goods will fall along with the other producers' demand for the non-specific factors of production. Hence, prices of the non-specific factors will, as a result, be pushed downward.

This, however, in and of itself, does not seem to be a sufficient condition for what Méra attempts to show. He neglects a potential offsetting effect. While nominal expenses of the buyers of the monopolist-monopsonist's product on other goods will go down, nominal expenses of the monopolist-monopsonist on various other goods, in his or her capacity as consumer or investor, will go up as a result of the realized monopoly-monopsony gains. This will have exactly the reverse effect, increasing monetary revenues of other producers and hence their demand for the non-specific factors of production. It is not clear where the net effect lies.

Of course, this does not change the fact that Méra has nicely illuminated the mechanism by which prices for non-specific factors, such as wages, might be pushed below the market clearing level as a result of monopoly-monopsony power.

In the next essay, Dr. Mateusz Machaj deals with some Post-Keynesian criticisms of the neoclassical marginalist theory of product pricing and shows that the Austrian theory is mostly immune to those criticisms. Yet, he holds that "in some cases the Post-Keynesian contribution to price theory strengthens Austrian arguments about the market process, especially in those aspects where Post-Keynesians are anti-neoclassical" (p. 195).

Post-Keynesians tend to highlight the relative importance of quantity and inventory adjustments instead of price adjustments in response to changing conditions of demand. Prices tend to be more or less "sticky." Moreover, they argue that output prices are rarely set in such a way that marginal revenue equals marginal cost. Machaj shows that Austrians have at least implicitly already addressed these considerations, which he argues could be interpreted as being "the result of a plain state of rest perspective" (p. 196). In contrast, neoclassical economists "seem to talk about the final state of rest," which is another way of saying that they abstract from uncertainty, change and time as shown and discussed in Herbener's essay in chapter 6 of the

volume. The Post-Keynesian qualms stem from these unrealistic assumptions in the standard neoclassical theory, but “economic reasoning can rely on the realistic momentary equilibrium of the plain state of rest for analyzing the pricing process,” (p. 196) as Machaj argues.

In his discussion of the imputation process (pp. 198–200), Machaj gives the hypothetical example of shirt production. He supposes that blue and green shirts are produced and sold at the same price even though demand for blue shirts is much higher. Sellers have adjusted quantities instead of prices. He argues correctly that such a case would not prove the limitations of the marginalist approach, but his explanation strikes the reviewer as somewhat unsatisfactory. He writes:

According to Böhm-Bawerk, the law of costs is actually an idea about marginal utility in disguise. In the shirts example, for instance, it does not matter that demand (and marginal utility) for blue shirts is higher relative to green shirts. What matters are the marginal utilities of other goods and services that would have to be given up in order to reproduce blue shirts. And since green and blue shirts require basically the same sacrifice, virtually the same marginal utility would have to be lost. If we lose the last-produced blue shirt, we only have to give up the production of the last green shirt and switch green dye for blue (just as when we lose the most important blue shirt we only have to use the marginal shirt as the first). Therefore we have a perfect explanation of why the costs of both shirts are the same—in the end, their marginal utilities of reproduction are the same. (p. 199)

This does not really explain why their selling prices remain the same. In the plain state of rest analysis, they remain the same because of the price-elasticity of demand anticipated by the producers. If they anticipate that price-elasticity is high for whatever reason, they might not raise the price for blue shirts, and instead start to expand blue shirt production as far as this appears to be profitable—that is, simply to the point where marginal revenue equals marginal costs or demand is anticipated to be satisfied at the prevailing price. This in turn increases demand for blue dye and exerts upward pressure on its price. Whether or not “in the end, [...] [the] marginal utilities of reproduction” of green and blue shirts are the same, depends on whether or not blue dye production can be expanded without significant increases in marginal costs.

In the end, the pricing of the factors of production depends on the prices of the final output. Indeed, Machaj puts this fundamental Böhm-Bawerkian insight very vividly:

From the perspective of an individual producer, it may seem that sellers practice cost-based pricing. Yet at the same time, this fact in no way validates the broad marginalist point that costs themselves result from other potential investment avenues that could be undertaken. Once we look at the economy as a whole, we see price-based costing despite the fact that firms attempt to engage in cost-based pricing. (p. 200)

## PART 5 – ECONOMIC ORGANIZATION, ENTREPRENEURSHIP AND THE FIRM

The first chapter of the last part of the book is by Dr. Mihai-Vladimir Topan. It contains a discussion of the compatibility of Austrian economics and “transaction cost economics” as developed most notably by Ronald Coase and Oliver Williamson. Topan comes to the conclusion that transaction cost is a “chameleonic instrument which raises more questions than it solves” (p. 220). Consequently, incorporating transaction costs as a general abstract notion into Austrian economics would in his eyes not improve the theoretical analysis, neither in the areas of economics of property rights nor the theory of the firm, which he specifically investigates.

The most obvious problem with the notion of transaction costs is that it is not well-defined. Topan argues that it is based on a misleading dichotomy between *production* and *exchange*, or the *firm* and the *market*. Transaction costs are somehow related to the latter but not the former. Topan explains the problem:

Praxeologically, as Mises would say, any human action has the structure of an exchange—autistic exchange or interpersonal (direct or indirect) exchange—involving the giving up of a certain state of affairs in favor of another that is expected to be more satisfactory. [...] Thus, the general category of costs, understood as opportunity costs of the actions undertaken by human agents, cannot *theoretically* be split into two categories—production costs and exchange (or transactions) costs. They are simply part of the same general category of cost with no substantive difference to set them apart. (pp. 209–210)

The vague notion of transaction costs has thus been applied to all kinds of questions in economics. There is what Topan calls a “transaction cost imperialism” (p. 217), in which attempts are made to explain not only firms, but markets themselves as well as all kinds of market phenomena, such as money, in terms of transaction costs. The notion ends up proving too much: “Coase suggests that the effects of transaction costs are ‘pervasive in the economy.’ The problem is that if transaction costs explain everything, they end up explaining nothing” (p. 218).

The next essay in McCaffrey’s volume does not deal with the elusive concept of transaction costs, but rather applies the more common notion of opportunity costs in order to show, in a first step, that *value* logically precedes *costs* even if understood as outlays for production. Indeed, Dr. Per Bylund explains that it is the anticipated value of investment projects that leverages the costs in existing lines of production in an entrepreneurial economy. This is because the demand for factors of production increases when new lines and methods of production are explored. This is again an application of Böhm-Bawerk’s theory of factor pricing via imputation that was discussed and applied previously in the book.

The new element in Bylund’s chapter, with respect to the rest of the book, is his discussion of *entrepreneurship* and *management* as distinct economic functions. He draws certain implications from this distinction for the socialist calculation debate. His analysis seems to be targeted towards rebutting a recent contribution to the debate by Denis (2015). The latter has argued that one could have public ownership of, but decentralized decision making and control over, the means of production. This arrangement, which he terms “several control,” would provide market prices and thus allow for economic calculation.

Without having studied Denis’s contribution and judging solely from Bylund’s brief description, the reviewer suspects that such an arrangement of “several control” could strongly resemble what we observe in the real world today, for example, in Sweden or the US. After all, there is no full-blown private property, but rather a “fiat property” arrangement. There is decentralized “ownership” or control over the means of production and their revenue product only to the extent that a centralized state, or, if you like, a democratic collective, grants it.

Bylund argues that in Denis's world there could be no entrepreneurship. There would merely be management. The validity of this claim depends, of course, on the definition of the terms. However, from Bylund's outline, one gets only an intuition, and by no means a clear-cut answer as to where exactly the line is drawn. At one point, he states: "The entrepreneurial function is here one that provides value creation relative to other types of production that already exist in the market" (p. 230). The entrepreneur develops "new supply functions that disrupt the market and discover previously unknown demands [...] [T]hey require new uncertainty-bearing and are consequently entrepreneurial" (p. 232). In contrast,

within the firm's production process, the manager can improve its technical efficiency [...] or the effectiveness of the already-established production process by reducing waste and lead times, and consequently increasing overall resource utilization. [...] The product can also be refined in its functionality, features, and quality, particularly as the firm learns about its customers' specific wants and can therefore better target those most highly valued. (p. 235)

What precisely distinguishes refinement of an existing good and the creation of new ones is not perfectly clear, but surely both, if successful, create value and thus economic growth. So does the reduction of waste.

At one point, the distinction is made more specific, when Bylund claims that entrepreneurship, that is, the "creation of a new supply function entails the withdrawal of capital from its existing use and the subsequent investment in the new endeavor, which requires ownership" (p. 232). If ownership is a necessary condition, then indeed in Denis's world there can be no entrepreneurs by definition.

However, a lot seems to depend on how such an arrangement of "several control" is exactly exercised. As mentioned above, it could look more or less exactly like the US or Sweden today, where presumably there are at least some entrepreneurs. To what extent there will be interference with the free exchange of rights to *control*, exchange, and combine resources and factors of production in different endeavors is simply an extra layer of uncertainty. Successfully bearing this uncertainty requires entrepreneurial skill.



Now, one might not want to call that entrepreneurship, but this is a semantic issue and actually not the most important point of the essay. More importantly, Bylund argues that a pure management economy would be regressing or shrinking even if there are market prices. It is important to note that he does not directly criticize and reject Denis's claim that one could have market prices under "several control." Thus, Bylund seems to accept the idea that a pure management economy could have market prices.

It seems to the reviewer that a well-managed economy without entrepreneurial innovation, where market prices exist, would not necessarily be shrinking. It could expand and grow in at least three respects, namely, as mentioned above, by the reduction of waste, the refinement of existing goods, and through the accumulation of capital and the expansion of the physical output of known goods in existing lines of production. If the relative demand in terms of known goods changes, a well-managed economy would also be capable of redirecting factors of production from one existing line to another. The managers who are confronted with increases in demand could bid away factors of production from others.

There are, of course, undeniable problems if there truly is no innovation in the economy. Exhaustion of non-renewable resources might serve as an example. But this does not change the fact that Bylund's conclusion that in a management-driven economy "value will not only not be created but will be actively destroyed" (p. 239) is exaggerated. The theoretical discussion does not suffice to support this claim.

The last essay is entitled "Economic Calculation and the Limits of Social Entrepreneurship." It is written by the editor of the volume. McCaffrey links the Misesian theory of economic calculation to aspects of "social entrepreneurship." In the introduction, social enterprises are defined as follows:

Social enterprises are business organizations that are not motivated by the desire to generate monetary profits for traditional shareholders. Instead, the profits of social enterprise are used to solve "social" problems, often by addressing the same kinds of needs as charitable organizations. Social enterprises are special, however, because they support their missions through successful commercial ventures rather than through donations. (p. 244)

Indeed, the weasel word “social” requires further explanation here. McCaffrey explains that “action is ‘social’ to the extent it fosters cooperation and thereby encourages specialization and the division of labor” (p. 245). It is thus ultimately “inaccurate to contrast social with non-social enterprises” (p. 246) in this broad sense of the word. Enterprises are always social, but may be so in different ways.

Moreover, using Fetter’s notion of *psychic income*, and the Misesian derivative of *psychic profit*, McCaffrey shows that it is likewise untenable to call any enterprise strictly “not-for-profit.” Social enterprises are bound up with a kind of profit motive too. If the “social cause” pursued by the enterprise involves giving money in some form or another to certain groups, it must generate monetary income if it attempts to be more than a mere charity organization, as McCaffrey points out (p. 249).

These considerations show that it is much more difficult to clearly distinguish the social and mundane types of entrepreneurship. There is no clear-cut theoretical distinction between them that makes their analysis in terms of economic calculation fundamentally different. This is the underlying point of McCaffrey’s essay. He nonetheless maintains that “[e]conomics provides wide-ranging theories of social interaction, value, calculation, profit, and pricing that can be used to rigorously define the domain of social entrepreneurship” (p. 259). However, the “social element” is ultimately simply one form of consumption, which has to be financed in some way.

McCaffrey discusses *complementary social enterprises*, which operate exactly like mundane enterprises, except that they donate their profits to some “social” cause and let their costumers know it. Yet, when it comes to *integrated social enterprises*, the pursuit of the “social” cause is tied up into the production process itself. In practice, this means that the entrepreneurs are willing to pay *more* for some factors of production. They might hire homeless workers and pay them a salary above their discounted marginal revenue product (p. 257).

In so far as the pursuit of the “social” cause is valued by the customers, the entrepreneurs will attract additional revenue. It might turn out after all that the homeless workers are really not paid

above their marginal revenue product as McCaffrey shows. If the pursuit of the “social” cause does not attract additional revenue from customer spending, it must be financed out of other sources. These could be the “entrepreneur’s profits, the capital of the enterprise, the land of the enterprise, or the wages of other employees if they are willing to forego part of their potential earnings, as in the case of volunteers for a charitable cause” (p. 257).

McCaffrey thus shows in his article that enterprises in pursuit of a “social” cause are limited by profit and loss and hence by economic calculation, just like mundane enterprises. If they generate monetary profits, they can better promote the cause. If they incur losses, the continued existence of the enterprise and promotion of the cause becomes a matter of charity on the part of the entrepreneurs or other stakeholders. One way or the other, the subjective value creation, that is, the psychic income or want satisfaction, created by the enterprise has to be strong enough to attract finance of its expenses.

## CONCLUSION

McCaffrey’s edited volume *The Theory of Costs* is a worthwhile read for both students and researchers. It contains valuable criticism of the standard neoclassical approach and some original ideas on how to develop causal-realist economics in the Mengerian tradition further. It is rich in content and will hopefully stimulate further research and debate. The points criticized in this review are thought of as a first step in that direction.

## REFERENCES

- Braun, Eduard. 2014. *Finance Behind the Veil of Money: An Essay on the Economics of Capital, Interest, and Financial Markets*. Liberty.me.
- . 2016a. “A Comment on Dr. Howden’s Review of *Finance Behind the Veil of Money*,” *Quarterly Journal of Austrian Economics* 19, no. 1: 121–123.
- . 2016b. “Reply to Dr. Howden on Opportunity Costs,” *Quarterly Journal of Austrian Economics* 19, no. 2: 173–177.

- Caplan, Bryan. 1999. "The Austrian Search for Realistic Foundations," *Southern Economic Journal* 65, no. 4: 823–838.
- Denis, A. 2015. "Economic Calculation: Private Property or Several Control," *Review of Political Economy* 27, no. 4: 606–623.
- Ferraro, Paul J., and Laura O. Taylor. 2005. "Do Economists Recognize an Opportunity Cost When They See One? A Dismal Performance from the Dismal Science," *Contributions to Economic Analysis and Policy* 4, no. 1: 1–12.
- Howden, David. 2015. "Book Review of Finance Behind the Veil of Money: An Essay on the Economics of Capital, Interest, and the Financial Market," *Quarterly Journal of Austrian Economics* 18, no. 4: 578–583.
- . 2016a. "Finance Behind the Veil of Money: A Rejoinder," *Quarterly Journal of Austrian Economics* 19, no. 2: 178–186.
- . 2016b. "Finance Behind the Veil of Money: Response to Dr. Braun's Comment," *Quarterly Journal of Austrian Economics* 19, no. 1: 124–128.
- Hülsmann, Jörg Guido. 2017. "The Myth of the Risk Premium." *Document de Travail Du GRANEM No. 2017-01-056*.
- Israel, Karl-Friedrich. 2018. "The Income Effect Reconsidered." Working Paper. Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3289600](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3289600).
- McCaffrey, Matthew, ed. 2018. *The Economic Theory of Costs: Foundations and New Directions*. London and New York: Routledge.
- Méra, Xavier. 2010. "Factor Prices Under Monopoly," *Quarterly Journal of Austrian Economics* 13, no. 1: 48–70.
- Rothbard, Murray N. 2009. *Man, Economy, and State: A Treatise on Economic Principles - With Power and Market: Government and the Economy*. Auburn, Ala.: Ludwig von Mises Institute.
- Rothbard, Murray N., and Patrick Newman. 2015. "Man, Economy, and State, Original Chapter 5: Producer's Activity," *Quarterly Journal of Austrian Economics* 18, no. 4: 487–561.

## *THE PRICE DETERMINED BY THE COST AND COSTS DETERMINED BY PRICES: A REPLY TO ISRAEL*

MATEUSZ MACHAJ

**M**y comments on Karl-Friedrich Israel's criticism (2018, p. 393) of my piece (Machaj, 2018) are not really a typical reply as I fully accept his criticism of my explanation from his thoughtful and in-depth review of the book. While being grateful for his discussion, I would like to develop the point of reproduction further, as quarrels about price-cost relations may be ambiguous.

Israel points out that "price-elasticity of demand" is essential in understanding how prices (and costs) are formed. That is certainly true, but what remains to be explained is: which price elasticity. The main point of my short discussion was to demonstrate that the price for blue shirts does not only depend on marginal utility of blue shirts (demand for them). Moreover, the prices for blue shirts may go up, because costs went up, *even if absolutely nothing changed in the demand for blue shirts*. The answer how this happens lies in the Böhm-Bawerkian explanation of cost formation and causal-realistic considerations of how costs go up in the first place.

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Assume that blue shirt purchasers are the most eager and determined in obtaining cotton related products. Imagine a catastrophe happened to cotton industry and world production has been cut in half. The potential production of cotton related products is lower, *for all cotton related products*. Marginal utility of the last cotton related product goes up, because of decreased supply. Henceforth the value of that last produced cotton product is imputed back to the price of cotton as a factor of production. That implies that costs of cotton are higher as entrepreneurs are bidding more for a shrunk supply. Those increased costs of production would lead to higher prices of our considered blue shirts, provided they would still be in high demand as initially.

Consequently, even if nothing changed in the demand for blue shirts, their prices are directly related the cost of production. One may ask the question—if they were so high in (inelastic) demand, why did the price did not go higher in the first place? Because of forces of competition. The key in understanding how price formation works is the force of rivalry. Yes, producers focus on demand elasticity, but they are interested in *individual* demand and price elasticity *for their own product*. And that one is elastic even if total demand curve is inelastic, because as they raised the price for blue shirts, they would lose customers in favor of other producers, who would take advantage of lower costs and offer product with a lower price margin. Henceforth forces of competition are keeping the final price of a product in close relation to its costs. Let me emphasize that this does not mean that costs are the ultimate cause here, since they themselves are reducible to marginal utilities of all cotton products.

Böhm-Bawerk expressed that thought quite well in a similar copper example:

Again, we must not endeavor to find in the law of cost either more or less than the Austrian economists have found in it, namely, a universal law of leveling. And this is an influence which operate not merely upon certain final elements, but also at every stage of the productive process. There is a leveling or equating not merely of the final elements, labor and the disutility of labor, but also of productive goods and of utility with utility. This last takes place independent of, and oftentimes in direct opposition to the influence of the final elements. Why, in our example of the copper kettle, does the price rise from fourteen to eighteen dollars? Simply because through the common cost it can and must be leveled to the price of the other commodities produced from copper, i.e., in this

case to the price of the strongly demanded copper wire. But why have prices in the entire copper business advanced? Because, and in so far as, through the increased demand for copper, the marginal utility of this material has been raised (Böhm-Bawerk, 1962, pp. 367–368).

A summary of the example could therefore be: the price for blue shirt is determined by the cost of cotton, but costs of cotton are in the final instance determined by utilities of cotton related products, represented in their final prices. In other words, when entrepreneurs are considering costs in their decisions, they are considering others' expectations of competing marginal utilities sort of disguised as costs of production. Monetary costs of factors are a price we pay for withdrawing other projects from materializing (they simply are a form of opportunity cost).

Additionally, considering the forces of competition I would be careful with the neoclassical notion of equalizing marginal costs and marginal revenues. Such an approach does not have a typical place in the usual Austrian reasoning. It has to be very stretched and highly adjusted to make sense in real world examples. This is primarily because definition of "marginal cost" is actually quite subjective and depends on the chosen (longer or shorter) run (Rothbard, 2009, p. 695). It also wrongly suggests that fixed costs play no role in price formation and production decisions. For the real world companies they do.<sup>1</sup> Only sunk costs, capitalized losses, do not play such role, but not all fixed costs are sunk.<sup>2</sup> Consider the case of purchased real estate. It is a fixed cost, but usually a substantial part of it can be recovered very easily by selling it to someone else. That is why while making production and pricing decisions companies consider fixed costs in their calculations all the time (not just marginal costs). Since virtually all of the ones staying afloat do so, fixed costs are part of strategic decisions. If the consumers are backing out from purchasing a product, losses are revealed and the signal is sent that the particular real estate has

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<sup>1</sup> In general, the equation  $MR=MC$  is not really mistaken, since it may be tautological and true under the chosen assumptions. The problem lies a step back, in the assumption that costs can be easily divided into fixed and variable, and that the division can easily separate the apparently relevant from the apparently irrelevant.

<sup>2</sup> On the very significant difference between sunk and fixed costs see an underrated paper: Wang and Yang 2001.

an alternate employment which should be considered. Such is the process which through Internet revolutionized typical in-house stores. Many of them became closed, because a different selling channel had been created, so to stay profitable the cost of real estate would have to fall. But the cost cannot go much further down, because there are other potential renters having other marginal utilities in mind, which will justify profitable renting of the real estate. In other words, there are other marginal utilities which justify paying a higher cost. If an in-house store cannot secure a sufficient money stream for that rental price, then it means that goods sold in that place do not have sufficiently high marginal utility to the consumers. That is how *all costs* (not just marginal) are actually influencing and shaping entrepreneurial decisions all the time. This is a notion that comes from the Austrian version of marginalism—much stronger than a neoclassical one.

Henceforth, while I accept Israel's blue dye point, I would state it without referencing neoclassical  $MC=MR$  rule, and with a Boehm-Bawerkian style of reasoning.<sup>3</sup> Blue shirts and other shirts usually in the market will have similar prices even if they have radically different marginal utilities. They could have different prices, for example, if the price of a particular dye (blue) went up. Under those circumstances the price of a blue shirt would go up, but that increased cost would reflect higher marginal utility of alternate blue dye employment, whereas marginal utility of cotton in both blue and other shirts would be along similar lines.

## REFERENCES

- Böhm-Bawerk Eugen. 1962. "Ultimate Standard of Value" in *Shorter Classics*. South Holland, Ill.: Libertarian Press.
- Herbener, Jeffrey. 2018. "Time and the Theory of Cost" In Matthew McCaffrey, ed., *The Economic Theory of Costs: Foundations and New Directions*. London and New York: Routledge.
- Israel, Karl-Friedrich. 2018. "Book Review of *The Economic Theory of Costs: Foundations and New Directions* edited by Matthew McCaffrey," *Quarterly Journal of Austrian Economics* 21, no. 3: 287-306.

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<sup>3</sup> Also criticized in the same book from another perspective by Newman (2018, pp. 64–67). See also Herbener (2018, pp. 161–165).



- Machaj, Mateusz. 2018. "Costs and Pricing: an Austro-Post-Keynesian Synthesis?" In Matthew McCaffrey, ed., *The Economic Theory of Costs: Foundations and New Directions*. London and New York: Routledge.
- Newman, Patrick. 2018. "From Marshallian Partial Equilibrium to Austrian General Equilibrium: The Evolution of Rothbard's Production Theory." In Matthew McCaffrey, ed., *The Economic Theory of Costs: Foundations and New Directions*. London and New York: Routledge.
- Rothbard, Murray. 2009. *Man, Economy, and State with Power and Market*. Auburn, Ala.: Ludwig von Mises Institute.
- Wang, Henry X., and Bill Z. Yang. 2001. "Fixed and Sunk Costs Revisited," *Journal of Economic Education* 32, no. 2.

