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AGREE OR DISAGREE? ON THE ROLE OF NEGOTIATIONS FOR THE VALUATION OF BUSINESS ENTERPRISES

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ABSTRACT: In the division of labor, economizing valuations require an appraisement of the structure of market prices of goods beforehand. Yet, investment decisions concerning the purchase of an entire business enterprise, for example, necessitate considerations beyond appraisement. An economizing valuation of businesses must be based upon both appraisement and a genuine investment appraisal which provides the valuing person with the marginal price he can barely accept. However, even though the computation of this marginal price is a necessary step towards an economizing investment decision, it is still not sufficient. In case of a company purchase, the price to be paid is unknown beforehand. Therefore, an economizing valuation of firms not only requires both appraisement and investment appraisal but also a negotiation of the final price to be paid.

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Because the corresponding negotiation process must be characterized as a *terra incognita* in Austrian economics, this paper investigates in depth the negotiation between the involved parties as the final step towards their economizing valuations and discusses purposive negotiation tactics.

1. INTRODUCTION

In an autistic economy, valuation alone is a sufficient condition for economizing decisions (Mises, 1998 [1949], p. 329). In the market economy, however, things look different. In the division of labor, valuation needs to be based upon appraisement to result in economizing decisions (Mises, 1998 [1949], p. 329). While this insight holds true for each and every good to be valued, in the case of financial investment decisions, and particularly concerning the purchase of an entire business enterprise or a substantial share package, acting man's final valuation must be based upon both appraisement and investment appraisal (Herbener and Rapp, 2016, pp. 10–11). Moreover, contrary to the typical purchase of a consumer good, the asking price of a business enterprise is *unknown* beforehand. In cases of particular investment decisions, therefore, valuing persons need to engage in a negotiation about the price to be paid (Matschke, Brösel, and Matschke, 2010, p. 6). Apart from appraisement and investment appraisal, this negotiation is the last condition necessary for this person's final valuation. To date, the Austrian-informed literature lacks a comprehensive analysis of such negotiation process. This paper aims to fill this gap by thoroughly investigating what role negotiation plays for the valuation of, in particular, a business enterprise and how it can be operationalized purposefully.

In order to do so, the paper is structured as follows: In section 2, we will illustrate the requirements for economizing decisions in different economic settings and for different goods. Section 3 will serve to review the status quo of Austrian theorizing on the issue of negotiating in isolated exchanges, to analyze the negotiation process in depth, to illustrate its relevance for valuation, and to discuss tactics for successful negotiations. Finally, section 4 will present the main conclusions which can be drawn from our analysis.

2. VALUATION, APPRAISEMENT, AND INVESTMENT APPRAISAL

Value is neither intrinsic nor objective in any sense; rather, *valuation* is an individual act of comparing and, eventually, ranking alternative courses of action in aiming at particular ends, which is necessarily subjective in nature (Menger, 2007, pp. 120–121). Valuation is reflected in a value scale which varies both from one person to another and—for the very same acting human—as time goes by (e.g., Hering, Toll, and Kirilova, 2015a, p. 24; Olbrich, Quill, and Rapp, 2015, p. 20; Rapp, Olbrich, and Venitz, 2017, p. 16), and is demonstrated through action (Mises, 1998 [1949], p. 95). As a consequence of these facts, Mises (1990, p. 56) rightly rejects the very idea of intrinsic value as "the naive conception of the layman."[1]

Mises (1998 [1949], p. 233) emphasizes that

> [i]n order to conceive the market fully one is forced to study the action of hypothetical isolated individuals [...] [and in] studying interpersonal exchange one cannot avoid dealing with autistic exchange.

Mises (1998 [1949], p. 195) defines an autistic exchange as an "action [...] performed by an individual without any reference to cooperation with other individuals."

In an *autistic economy*, then, economizing decisions are solely made through valuations without further ado, in particular without reference to money prices (e.g., Herbener and Rapp, 2016, p. 7). For example, if Robinson Crusoe had two options to choose from, say, to spend his time either (1) going fishing or (2) collecting berries to satisfy his hunger, he will make an economizing decision solely through preferring either (1) fishing to berry picking or (2) berry picking to fishing based upon his personal preferences.

In juxtaposing an autistic economy with society, Mises (1998 [1949], p. 195) asserts:

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[1] On the flaws and fallacies inherent in the investment strategy "value investing", which claims and is built upon the existence of intrinsic value, see Rapp, Olbrich, and Venitz (2017) as well as Rapp, Olbrich, and Venitz (2018).

> Within society cooperation substitutes interpersonal or social exchange for autistic exchanges. Man gives to other men in order to receive from them. Mutuality emerges. Man serves in order to be served.
>
> The exchange relation is the fundamental social relation. Interpersonal exchange of goods and services weaves the bond which unites men into society. The societal formula is: *do ut des*.

Necessarily, interpersonal exchange both requires and reveals exchange ratios for the goods and services subject to market transactions. In a monetary market economy allowing for indirect exchange through the application of a generally accepted medium of exchange, these ratios become evident in market-clearing money prices (Mises 1998 [1949], pp. 206, 218, 287, 324). While valuation is a prerequisite for economizing decisions in the *division of labor* too, it is not by itself sufficient. Rather, it must be supplemented by *appraisement*, which aims at the anticipation of the structure of such market prices or—in other words—at the assessment of the purchasing power of the money concerned (Mises 1998 [1949], p. 329). To rank order in value a particular amount of money, say $1, against a particular good, say an apple, a consumer must know the alternative uses of the dollar, say the purchase of two oranges. Consequently, for decisions in the division of labor to be economizing they must not be based on valuation only; rather, valuation must be well-grounded on appraisement.

While combining both appraisement and valuation usually allows for economizing decisions of consumer goods, there are financial investments, in particular those concerning entire business enterprises, which require additional considerations (for this entire paragraph see Herbener and Rapp, 2016). In buying consumer goods, acting man aims at *non-financial* ends, for example, to satisfy hunger. A person can directly evaluate in his mind the contribution of a particular consumer good to reaching such ends. In contrast, financial investments are mostly undertaken to fulfill *financial* ends. How the possession of a firm, for example, contributes to reaching such ends cannot simply be assessed at first glance, that is, directly by one's mind without economic calculation. In this respect, Menger (2007, p. 255) emphasizes that the "value [of factories] can be determined only after a careful investigation of all the relevant circumstances." Therefore, acting man needs to apply a particular tool of economic

calculation as a decision method, which allows him to evaluate the degree to which the firm contributes to reaching his (financial) ends. Specifically, this tool is to be found in a genuine *investment appraisal*.[2] Its purpose is to provide the decision maker with the most important financial piece of information he needs for his economizing decision: the marginal price he can barely accept in a transaction without suffering an economic loss (fundamentally Matschke, 1975; further, e.g., Hering, 2014, pp. 5–6). This marginal price is highly individual data, determined by the (financial) ends a person aims at and the (financial) means available to him in reaching those ends. Following investment theory, which is rooted in early Austrian economics (Schmalenbach, 1919, p. 334; Schmalenbach, 1937, p. 27; Hering, 2014, pp. 27–28; Olbrich, Quill, and Rapp, 2015; Herbener and Rapp, 2016, pp. 12–13), it equals the present value of the individually predicted future earnings, discounted with the correct individual discount rate, that is, the internal rate of return of the best alternative use of funds which is derived from the person's consumption preference.[3] In reflecting the present value of expected future earnings from a particular person's perspective, the marginal price manifests the contribution a firm, for example, is expected to make in reaching particular ends and, therefore, allows for an economizing ranking against the asking price.

However, in contrast to the regular purchase of a consumer good, for example, an apple in a grocery store, in cases of the acquisition or sale of a firm, the asking price is unknown beforehand. Consequently, a person cannot establish his final value scale beforehand. Therefore, to rank the business concerned against a certain amount of money and, eventually, to act accordingly requires a negotiation about that price beforehand.

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[2] Note that the application of investment appraisal to compute the present value of the expected financial benefits of a particular course of action does not prohibit valuing man from complementing this financial analysis with considerations outside of the mere financial sphere. For the role of non-financial aspects in investment decisions and their impact on valuation, see Herbener and Rapp (2016, p. 11).

[3] In this respect, Herbener (2011, p. 14) notes: "As a temporal being, man distinguishes between sooner and later. He can, therefore, judge the value of attaining an end sooner differently than attaining it later. Just as the principle of preference is implied by man's finitude, time preference is implied by his temporality."

3. NEGOTIATION AND ITS RELEVANCE FOR VALUATION

3.1 Catallactics and the Status Quo of Austrian Theorizing

Whately (1831, p. 6)—objecting to the formerly established term "political economy"—originally introduced the term "catallactics" to frame the sphere of economics and defined it as the "Science of *Exchanges*."[4] Following Whately's (1831, p. 6) definition of man as "[a]n animal that makes exchanges," catallactics, then, ultimately deals with exchanges conducted by acting man in the marketplace. As Mises (1998 [1949], p. 233) describes it:

> [T]he task of this branch of knowledge [is] to investigate the market phenomena, that is, the determination of the mutual exchange ratios of the goods and services negotiated on markets, their origin in human action and their effects upon later action.

It was Mises who revived the term "catallactics" (Rowley, 1994, p. 289) integrating it into his broader analysis of human action, that is, praxeology (Mises, 1998 [1949], p. 233). Mises (1998 [1949], p. 3) concludes:

> The economic or catallactic problems are embedded in a more general science, and can no longer be severed from this connection. No treatment of economic problems proper can avoid starting from acts of choice; economics becomes a part, although the hitherto best elaborated part, of a more universal science, praxeology.

Ever since Carl Menger's (1871) fundamental work, Austrian economists have approached market phenomena progressively by distinguishing various forms of interpersonal exchange, based on the structure of both the supply side and the demand side of markets. Apparently, the simplest case of interpersonal exchange one can imagine consists of one particular seller and one particular purchaser only and, thus, has been labeled "isolated exchange" (Menger, 1871, p. 179 [2007, p. 197]). The investigation of such isolated exchange has been used frequently as a starting point to gain deeper understanding of market transactions in more complex

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[4] Rothbard (1951, p. 946) similarly defines catallactics as "The Theory of Voluntary Interpersonal Exchange."

circumstances (e.g., Menger 1871, pp. 175–212; Mises, 1998 [1949], p. 324; Rothbard, 2001, pp. 106–126). However, Austrian economists characterize isolated exchanges as rather rare and occasional while mainly occurring at early stages of the emergence of civilization. For instance, Menger (2007, p. 197) notes:

> This case, which could be termed isolated exchange, is the most common form of human trade in the early stages of the development of civilization. Its importance has survived to later times in sparsely populated backward regions and it is not completely absent even under advanced economic conditions, since it can be observed in highly developed economies wherever an exchange of goods that have value only to two economizing individuals takes place, or where other special circumstances economically isolate two persons.

Mises (1998 [1949], p. 324) describes such isolated exchange as "an occasional act of barter in which men who ordinarily do not resort to trading with other people exchange goods ordinarily not negotiated."

However, even in highly developed economies, such as our own, isolated exchanges turn out to be much more than merely occasional acts. Most of the firms or larger share packages being bought and sold in the market are subject to situations, in which there is neither competition on the demand side nor on the supply side; the latter being impossible anyway due to the uniqueness of the asset concerned, at least as long as the potential exchange concerns a share package exceeding 50 percent of a company's stocks. Therefore, the Austrian investigation of isolated exchange matches the circumstances in which most presumptive sellers and presumptive purchasers of a business enterprise find themselves. In consequence, it seems worthwhile to review the status quo of Austrian theorizing on the catallactics of isolated exchanges in order to ascertain which fundamental insights can be drawn from previous analyses for the assessment of the role of negotiations for the valuation of firms.

In a monetary market economy, "objective prices [...] are reflections of subjective values" (Ritenour, 2016, p. 21). Mises (1998 [1949], p. 324) explicates, prices

> are determined between extremely narrow margins: the valuations on the one hand of the marginal buyer and those of the marginal offerer

> who abstains from selling, and the valuations on the other hand of the marginal seller and those of the marginal potential buyer who abstains from buying.

Due to the lack of competition on both the supply side and the demand side within isolated exchanges, however, "the ratio of exchange is determined only within broad margins" (Mises, 1998 [1949], p. 324). These margins result from the individual marginal prices of both the presumptive seller and the presumptive purchaser (e.g., Olbrich, Quill, and Rapp, 2015, p. 31). Austrian economists have concluded that catallactic analysis proper cannot say with certainty what the final price involved parties eventually agree upon will look like (Mises, 1998 [1949], p. 324; Rothbard, 2001, p. 109); one thing catallactics can tell us, though, is that if the exchange is finally conducted, the given margin must have allowed for a mutually beneficial agreement, and that the final price is established somewhere within that margin. For instance, Menger (1871, p. 177 [2007, p. 195]) concludes:

> Hence, whatever the price that is finally established for 40 units of wine in an economic exchange between A and B, this much is certain, that it must be formed between the limits of 80 [the seller's minimum price in this example] and 100 [the buyers maximum price in this example] units of grain, above 80 and below 100 units.

Böhm-Bawerk (1930, p. 199) forms the following general proposition:

> In isolated exchange—exchange between one buyer and one seller—the price is determined somewhere between the subjective valuation of the commodity by the buyer as upper limit, and the subjective valuation by the seller as lower limit.

Accordingly, Mises (1998 [1949], p. 324) underscores that

> [c]atallactics, the theory of exchange ratios and prices, cannot determine at what point within these margins the concrete ratio will be established. All that it can assert with regard to such exchanges is that they can be effected only if each party values what he receives more highly than what he gives away.

Similarly, Rothbard (2001, p. 109) emphasizes that

> [a]ll analysis can say about this problem is that, since the exchange must be for the mutual benefit of both parties, *the price of the good in isolated exchange will be established somewhere between the maximum buying price and the minimum selling price* [...] We cannot predict the point that the two will agree on, except that it will be somewhere in this range set by the two points.

While any sound attempt to deduce a generally applicable law of how the price eventually established will look like in isolated exchange is doomed to failure,[5] Austrian economists have at least named potential determinants of that price. Particularly, they have pointed to the fact that the opposing parties will engage in a process of negotiating about the final price (Menger, 1871, p. 177 [2007, p. 195]; Gross, 1884, pp. 46–47; Schullern-Schrattenhofen, 1889, p. 31; Böhm-Bawerk, 1930, pp. 198–199; Rothbard, 2001, p. 109) which will be influenced by both the negotiators' abilities (e.g., Endres, 1995, p. 4) and their position within the negotiation (e.g., Gross, 1884, p. 131).[6] For example, Menger (1871, p. 177 [2007, p. 195]) while coining the term "*Preiskampf*"[7] ("price duel"; "price conflict"; "price war") states that

> it appears equally certain to me that the outcome of the exchange will prove sometimes more favorable to one and sometimes more favorable to the other of the two bargainers, depending upon their various individualities and upon their greater or smaller knowledge of business life and, in each case, of the situation of the other bargainer.

Similarly, Rothbard (2001, p. 109) analyzes that the finally established price "depends on the data of each particular case, on the specific conditions prevailing. In particular, it will depend upon the *bargaining skill* of the two individuals."

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[5] We classify the attempts to formulate a general bargaining theory as unsound for such "bargaining theory [is] rarely applicable in the real world" (Rothbard, 2011, p. 365).

[6] With reference to Hermann (1874) and Schäffle (1873), Gross (1884, p. 131) argues that "whether or not the price will approximate the minimum or maximum limit, apparently depends on the position the entrepreneur has within the price duel, whether his position is superior to his counterparty's one or not" (authors' translation).

[7] This term has been frequently used by Menger's disciples Gross (1884) and Schullern-Schrattenhofen (1889), see Streissler (1972, p. 437, footnote 54). For more recent applications see, for example, Spitznagel (2013, p. 22).

Moreover, Böhm-Bawerk (1930, p. 199) explicates with more detail:

> According as in the conduct of the transaction the buyer or the seller
> shows the greater dexterity, cunning, obstinacy, power of persuasion, or
> such-like, will the price be forced either to its lower or to its upper limit.

Rothbard (2001, p. 363) notes that "[l]ittle of value has been said about bargaining since Böhm-Bawerk" (footnote 27) and that "[e]conomists have always been very unhappy about bargaining situations of this kind, since economic analysis is estopped from saying anything more of note."

Unlike economists in the tradition of Menger, Böhm-Bawerk, Mises, and Rothbard, however, neoclassical economists have attempted to overcome this barrier to economic analysis by formalizing the bargaining process. This development has been a natural extension of their formal-modeling approach to explaining human behavior. To construct a mathematically tractable model of human action, neoclassical economists assume economic agents, instead of human persons, whose simulated behavior is determined by stipulated underlying conditions, namely, the agent's utility function and objective circumstances whose value in an agent's behavior is determined by its utility function. Neoclassical economists have modeled every functional type of human action as optimization under constraint: consumption, production, and exchange. Price setting eluded formalization, however, until the advent of game theory after the Second World War. Before that time, neoclassical economists typically assumed the existence of an auctioneer compiling bids and offers made by all buyers and sellers in a market, then computing the equilibrium price, and finally announcing the price after which all trades would be made.[8] Since the early 1950s, neoclassical economists have developed game-theoretic models of bargaining.[9]

As Rothbard notes in the quote above, economists in the tradition of Mises have considered bargaining an entrepreneurial activity

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[8] See Hahn (2008) for an overview of the Walrasian auctioneer in general equilibrium theory and Negishi (2008) on advancements beyond tâtonnement as a process of price setting in neoclassical economics.

[9] See Serrano (2008) for an overview of game-theoretic bargaining.

not subject to economic-theoretical laws.[10] Such laws describe the universal, cause-and-effect structure of human action. Under adequately competitive conditions, for example, the level of the price of a good is completely determined by the preferences of buyers and sellers, which in turn are subject to the laws of utility. The preferences of the marginal traders are so near to each other that no bargaining range exists. Any seller can always sell to the marginal buyer if any buyer attempts to negotiate for a lower price. And any buyer can always buy from the marginal seller if any seller attempts to negotiate for a higher price. If a market is inadequately competitive, then a bargaining range will exist and the level of price will be determined, not solely by the laws of utility which are universal principles of human action, but by the particular conditions of person, place, and time in which bargaining takes place as noted above in isolated exchange, the extreme case of an inadequately competitive market.

Although it is indeed true that catallactics has no means to completely determine the actual final price in any isolated exchange, additional theoretical insights can be discovered about isolated exchange in cases of investment appraisal in contrast to cases of valuation (and appraisement) alone. The following two sub-sections are devoted to a praxeological investigation of the negotiation process between a presumptive seller and a presumptive purchaser in the special case of an entire business enterprise.

3.2 Negotiation Process and Possible Scenarios

The negotiation about the purchase/sale of a firm, basically, consists of price *offers* executed by the involved parties, either directly or indirectly through the proposal of an appraisal method or corresponding data (Matschke and Brösel, 2013, pp. 615–616). Every potential price offered by one of the parties is the outcome of that party's valuation. Through the action of proposing a certain price, that party demonstrates its particular value scale, that is, how it has ranked the business concerned against the suggested price. Inversely, to the opposing party, the offered price serves as an input variable

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[10] The quote (Rothbard, 2001, p. 363) was originally published in 1962, before the game-theoretic treatment of bargaining gained ascendency in neoclassical literature.

for its valuation. The opposing party compares the quoted price to its marginal price and, eventually, ranks the offered price against the business enterprise in question. Therefore, the negotiation process must be interpreted as a series of repetitive valuations reflected in the proposal, acceptance, or rejection of price *offers*, both from the presumptive buyer's and the presumptive seller's perspective.

In the potential transaction of an entire business enterprise, basically, we can distinguish three scenarios:

1. The presumptive seller's marginal, that is, barely acceptable price exceeds the presumptive purchaser's marginal price; in other words, the presumptive seller needs to earn more than the presumptive purchaser is willing to pay.

2. The presumptive purchaser's marginal price is identical to the presumptive seller's barely acceptable price; in other words, the presumptive buyer may at most pay what the presumptive seller at least needs to earn.

3. The presumptive purchaser's marginal price is greater than the presumptive seller's barely acceptable price; in other words, the presumptive buyer can be willing to pay more than the presumptive seller needs to earn.

In *scenario 1*, no potential area of agreement exists, since the presumptive seller needs to earn more than the presumptive purchaser may pay:

Figure 1: Presumptive Seller's Marginal Price > Presumptive Buyer's Marginal Price
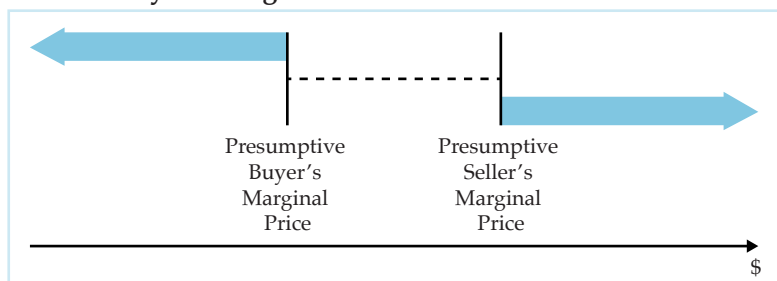
Rothbard (2001, pp. 107–108) illustrates this scenario using two opposing parties' value scales as follows:

> Smith would be willing to acquire a horse from Johnson if he could give up *100 barrels of fish or less*. One hundred barrels or less are less valuable to Smith than the horse. On the other hand, 101 or more barrels of fish are more valuable to him than the horse. Thus, if the price of the horse in terms of the fish offered by Smith is *100 barrels or less*, then Smith will make the exchange. If the price is 101 barrels or more, then the exchange will not be made [...] Johnson will not give up his horse for less than 102 barrels of fish. If the price offered for his horse is less than 102 barrels of fish, he will not make the exchange. Here, it is clear that *no exchange will be made*; for at Johnson's minimum selling price of 102 barrels of fish, it is more beneficial for Smith to keep the fish than to acquire the horse.

In this scenario, consequently, the negotiation process will be rather short, since there is no price both parties will accept voluntarily which they will realize fairly quick. In any case, one party will value the status quo higher than the transaction, which will be reflected in the rejection of the deal.

Contrary to scenario 1, in *scenario 2* a potential area of agreement exists, since the presumptive purchaser may offer a price which is also acceptable to the presumptive seller:

Figure 2: Presumptive Seller's Marginal Price = Presumptive Buyer's Marginal Price

If both the presumptive purchaser's and the presumptive seller's marginal prices equate to one another, however, the *only* price acceptable to both parties equals their common marginal price. Rothbard (2001, p. 109, footnote 23) discusses the same scenario and eventually concludes: "Thus, if Smith's maximum buying price is 87, and Johnson's minimum selling price is 87, the price will be uniquely determined at 87."

Given the identical marginal prices, however, while both parties would not suffer engaging in the transaction which might indeed lead them to conduct it at their shared marginal price, neither can the presumptive purchaser benefit from the transaction by paying less than the business is worth to him nor can the presumptive seller benefit earning more than the business is worth to him respectively (e.g., Menger, 2007, p. 185). Consequently, as both parties cannot improve their state of affairs by means of the trans-action, they might—as their equally valuable action alternative— simply abstain from undertaking it, that is, no price at all might be established. The fact that conducting the exchange does not make any of the involved parties better off, leads Menger (2007, p. 185, footnote 5) to classify "indifferent exchanges such as this as definitely non-economic since in them the provident activity of men is set in motion aimlessly quite apart from all the economic sacrifices they may entail."

Hence, the process of negotiating between the involved parties might again be rather short, since none of them has an incentive to actually conduct the transaction. Either of the parties' valuations will most likely become evident in the rejection of the deal even-tually. Rothbard (2001, p. 108), thus, concludes that "[i]n order for an exchange to be made, then, the minimum selling price of the seller must be lower than the maximum buying price of the buyer for that good" since, as Menger (2007, p. 194) points out, "[both buyer and seller] will agree to an exchange only if it enables [...] [them] to make better provision for [...] [their] needs than would be possible without the exchange."

Similarly, Böhm-Bawerk (1930, p. 193) argues that

> [exchanges] are not made simply for amusement. People who take the—not always trifling—trouble to exchange the goods which they possess for other goods, do so for a rational and material end, and, in nine hundred and ninety-nine cases out of a thousand, this end is to better their economical condition by the exchange.

Unlike scenario 2, *scenario 3* allows for more than one particular solution to the *Preiskampf*. The potential area of agreement is estab-lished because the purchaser's barely acceptable price exceeds the seller's minimum selling price:

Figure 3: Presumptive Seller's Marginal Price < Presumptive Buyer's Marginal Price
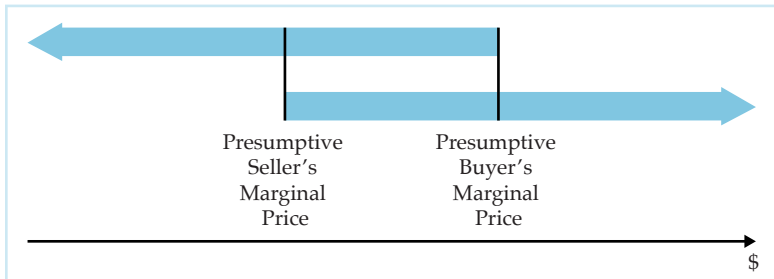
Any price offer within the range between the marginal prices serves as a potential final price, since each of them is mutually beneficial (e.g., Matschke, Brösel, and Matschke, 2010, p. 10). In discussing the same scenario, Böhm-Bawerk (1930, p. 198), therefore, appropriately claims that "it is certain that there will be an exchange; in the assumed circumstances each of the contracting parties can make a considerable profit by the exchange."

Owing to the existence of potential prices beneficial to both buyer and seller, the involved parties have an incentive to seriously negotiate with each other about the final price since both parties seek to improve their state of affairs through means of the transaction.

3.3 Negotiation Tactics and Appraisal Methods

Before engaging in negotiation, both presumptive seller and purchaser separately compute their strictly confidential (Matschke, 1975, p. 11; Matschke, 1976, p. 519; Matschke, 1979, p. 18) individual marginal prices applying investment appraisal (e.g., Hering, Toll, and Kirilova, 2015b, p. 1), which, then, limit the range of acceptable prices, that is, the potential area of agreement (Matschke, 1979, p. 57). Since man is a purposeful being (e.g., Herbener, 2011, p. 14), his action always aims at particular ends. Mises (1998 [1949], p. 11) emphasizes:

> Human action is purposeful behavior. Or we may say: Action is will put into operation and transformed into an agency, is aiming at ends and goals, is the ego's meaningful response to stimuli and to the conditions

of its environment, is a person's conscious adjustment to the state of the universe that determines his life.

The action of negotiating does not form an exception to this rule; rather, acting man engages in negotiation to reach a certain goal, his negotiation tactics serve a particular purpose. According to the end involved parties aim at, that is, wealth maximization (e.g., Mises, 1998 [1949], pp. 241–243; Rothbard, 2001, pp. 104, 213, 231), both buyer and seller intend to maximize their share of the transaction's benefit through negotiating with each other (Matschke, 1975, p. 11; Matschke, 1976, p. 521; Olbrich, Quill, and Rapp, 2015, p. 32).[11] To do so, they will want to reach an agreement at a price as close as possible to the opponent's marginal price, that is, one that is still acceptable since beneficial to him. Rothbard (2001, p. 109) explicates:

> Clearly, Johnson will try to set the price of the horse as high as possible, while Smith will try to set the price as low as possible. This is based on the principle that the seller of the product tries to obtain the highest price, while the buyer tries to secure the lowest price.

Even though a price slightly below (purchaser) or slightly above (seller) the marginal price is beneficial and, hence, acceptable, both parties will engage in a purposive negotiation aiming to maximize their share of the gain to be established through the exploitation of the potential exchange. Menger (2007, p. 195) notes:

> It is easily seen that A [, given his marginal price of 100 units of grain,] could provide better for the satisfaction of his needs even if he should have to give 99 units of grain for the 40 units of wine, and that B [, given his marginal price of 80 units of grain,] would be acting economically on the other side if he were to accept as little as 81 units of grain in exchange for his 40 units of wine. But since there is an opportunity for both econo-mizing individuals to exploit a much larger economic advantage, each of them will direct his efforts to turning as large a share as possible of the economic gain to himself. The result is the phenomenon which, in ordinary life, we call *bargaining*. Each of the two bargainers will attempt to acquire as large a portion as possible of the economic gain that can be derived from the exploitation of the exchange opportunity, and even if

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[11] For practice-oriented guidance on how to negotiate, see, e.g., Ury (1991); Fisher, Ury, and Patton (2011); Voss and Raz (2016). Herbst et al. (2018) as well as Nagler et al. (2018) provide some current insights on negotiation management.

he were to try to obtain but a fair share of the gain, he will be inclined
to demand higher prices the less he knows of the economic condition of
the other bargainer and the less he knows the extreme limit to which the
other is prepared to go.

In order to reach a worthwhile agreement, involved parties,
therefore, necessarily need not only know their own marginal prices
but also need to form an assumption about the opponent's marginal
price (Matschke, Brösel, and Matschke, 2010, p. 6; Brösel, Toll, and
Zimmermann, 2012, p. 95; Matschke and Brösel, 2013, p. 622).

Within the negotiation about the transaction of a firm, involved
parties usually agree upon a certain appraisal method and negotiate
about the corresponding input data rather than merely proposing
actual price offers as commonly known from, for example, auctions
or flea markets (Matschke, 1976, p. 520; Matschke and Brösel, 2013,
pp. 615–616). A party's negotiation tactics and its proposal for
applicable appraisal methods being subject to the negotiation are
neither arbitrary nor random; rather, acting man will select the
appraisal method and choose the negotiation tactics he prefers
purposefully in light of the overall end of the negotiation process, that
is, to reach the most profitable agreement. Basically, every imaginable
method, which serves to support the quoting party, can be reasonably
applied for that purpose. However, methods that are widely known,
generally accepted, arbitrarily adjustable, and considered to result in
"fair" and "impartial" prices suit best to convince the opposing party
of a particular agreement (Matschke, 1976, p. 523; Matschke and
Brösel, 2013, p. 624). In other words, conventional appraisal methods
are the best fit for negotiation purposes. In recent years, so-called
market-value-oriented[12] methods dominate among business
appraisals and, hence, are considered the state of the art (e.g., Olbrich,

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[12] Mises (1951, p. 113) emphasizes: "Only the individual thinks. Only the individual
reasons. Only the individual acts." Since individual action is the visualization
of man's valuations (Mises, 1998 [1949], p. 120), furthermore, only individuals
value. Therefore, the prevalent term "market value" is—at best—delusive. Unlike
any individual, the market in the aggregate does not and cannot value anything;
rather, the market reflects prices resulting from individuals' valuations and
actions. Only under the rigid and unrealistic assumptions that underpin neoclas-
sicism, values and prices equate to one another. Only then does a reference to
"market value" make any sense. In the real world, however, the term is nothing
but preposterous.

Quill, and Rapp, 2015, pp. 6–8). Market-value-oriented methods subsume both (1) neoclassical finance-theory-based *discounted cash flow methods* (DCF) and (2) methods of so-called *relative valuation* (e.g., Matschke and Brösel, 2013, pp. 125–126).

While both concepts suffer from various profound issues and are, hence, of no use to support valuing man in an investment *decision* (e.g., Olbrich, 2000, pp. 458–459; Hering, Olbrich, and Steinrücke, 2006, pp. 411–413; Brösel, Matschke, and Olbrich, 2012, pp. 241–242; Olbrich, Quill, and Rapp, 2015, pp. 12–17; Herbener and Rapp, 2016, pp. 20–23), they perfectly meet the demand for *negotiation* purposes (e.g., Brösel, Toll, and Zimmermann, 2012, p. 96–97; Matschke and Brösel, 2013, p. 624),[13] since they are (for whatever dubious reason)[14] generally accepted, adjustable as needed, and seemingly objective. As long as market participants believe in the superiority of such "objective" methods of business appraisal, subjectivists can make use of that misbelief in order to reach a preferable negotiation result (e.g., Matschke and Brösel, 2013, p. 624; Hering, 2014, p. 222).

One exemplary DCF variant, the flow-to-equity method, can be illustrated as follows (similarly Matschke and Brösel, 2013, p. 725):

$$\text{Appraised firm value } = \sum_{t=1}^{T} \frac{\text{Cash flow to equity}_t}{\left(1+\text{cost of equity}\right)^t}$$

To allow for face saving of the quoting party throughout the negotiation, an appraisal method suits best if it incorporates a certain degree of adaptability without seeming questionable (Matschke, 1976, pp. 523–524; Matschke and Brösel, 2013, pp. 620, 665). DCF methods' adaptability can, for example, be shown by means of analyzing the popular and Nobel Memorial Prize awarded Capital Asset Pricing Model (CAPM) usually serving to deduce the so-called cost of equity,[15] that is, (parts of) the discount

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[13] *Functional business valuation theory* stresses the significance of purpose-orientation for each and any business appraisal. See, for example, Matschke, Brösel, and Matschke (2010) and Matschke and Brösel (2013).

[14] Olbrich, Quill, and Rapp (2015, pp. 7–8) provide some insights on the unbounded popularity of prevalent DCF methods.

[15] Even though frequently applied in the broader sphere of finance, the term "cost of equity" is meaningless. (Money) costs are caused by the *input* factors of, for

rate (e.g., Fama and French, 1997, p. 153; Koller, Goedhart, and Wessels, 2015, p. 286). CAPM's essential conclusion (the expected return of a particular security j ("μ_j") equals a "risk-free" rate ("i") plus a risk premium which reflects the surplus of the expected return of the market portfolio ("μ_M") over the "risk-free" rate multiplied by the beta-factor ("β_j")) can be visualized as follows (e.g., Hering, 2015, p. 301):

$$\mu_j = i + (\mu_M - i) * \beta_j$$

The practically applied data for the "risk-free" rate, the expected market return, and the beta-factor cannot perfectly match the theoretical demands of the CAPM (e.g., Hering, 2017, p. 309) simply because its assumptions are not met in reality as the model has an entirely hypothetical nature (e.g., Herbener and Rapp, 2016, p. 22). Hence, the input data are never correct or false; rather, they are the outcome of a willful choice. For instance, the appraiser will usually select a particular government bond (country, maturity, …) as an approximation for the "risk-free" rate (Damodaran, 2012, pp. 154–155), and a certain stock index (country, industry, period, …) as a substitute for the theoretically correct market portfolio (Hering, 2017, pp. 302, 309) which shall incorporate the performance of *every* risky asset rather than merely stocks (Damodaran, 2012, p. 66; Hering, 2017, p. 298). Therefore, CAPM's inherent degrees of freedom alone—apart from other factors within a DCF appraisal such as the estimation of future cash flows or the computation of a weighted average cost of capital—allow for the justification of basically any price offer supporting the quoting party taking into account both its own and the opponent's marginal price.

In contrast to the present-value-based DCF methods, so-called "relative valuation"[16] aims to capture the "market value" of a business

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example, a product, such as raw materials or labor. The dividends distributed to a company's shareholders, however, reflect the appropriation of a firm's net income, that is, the *output* of its operations. Therefore, to refer to (money) costs while actually meaning appropriation of net income mixes two entirely different things up and is, hence, both inaccurate and fallacious. For the critique of the term "cost of equity" see also Schneider (1998, p. 1474).

[16] The pleonastic term "relative valuation" fails to describe the special features of this approach sufficiently, since every valuation is in relative terms in the sense that it takes into account at least one alternative course of action.

either based on that business's market capitalization or the market capitalization of or prices recently paid for (seemingly) comparable companies (Olbrich, 2000, pp. 455–457). For instance, one particular variant of "relative valuation" seeks to compute the appraised firm value of a particular company ("A") through assessing the market capitalization of one comparable company or several comparable companies ("CC"), dividing it by a particular reference figure of the comparable company or the comparable companies, such as the EBIT, EBITDA, or net income, and to multiply the resulting factor with the respective reference figure of the company being appraised (Olbrich, 2000, p. 456). Hence, it can be visualized as follows:

$$\text{Appraised firm value}_A =$$

$$\text{Market capitalization}_{CC} / \text{Reference figure}_{CC} * \text{Reference figure}_A$$

Comparable to the application of DCF methods, "relative valuation" suits well for negotiation purposes, since this approach incorporates a high degree of both adaptability and credibility. For example, the selection of comparable companies, the assessment of their market capitalization, and the selection of applicable reference figures allow for more or less arbitrary modeling (e.g., Olbrich, 2000, p. 459; Matschke and Brösel, 2013, p. 680). Moreover, the justification of "fair values" based on observable prices in the marketplace appears to be credible (e.g., Matschke and Brösel, 2013, p. 678). Therefore, this approach suits well for negotiation purposes too.

4. CONCLUSIONS

Robinson Crusoe engages in autistic exchange only. His actions aim at substituting one state of affairs by a more preferable state of affairs without referring to other individuals. In such an autistic economy, valuation alone is a sufficient condition for economizing decisions. In a market economy, in contrast, economizing decisions concerning, for example, consumer goods rely on both appraisement and valuation. While economizing decisions concerning investments, for example, the purchase of a firm necessitate both as well, however, they are different in two respects: First, appraisement and valuation are necessary yet not sufficient. Investment decisions require knowledge of the barely acceptable

price, that is, the application of investment appraisal. Second, the final valuation of a business enterprise is infeasible in the first place, since one lacks knowledge of the asking price beforehand. The price, therefore, must be negotiated. Praxeologically, the negotiation process has to be interpreted as a repetitive series of valuations reflected in the proposal, acceptance, or rejection of price *offers*. To maximize their share of the benefit of the transaction, both buyer and seller will purposefully engage in a negotiation aiming to reach a price which ought to be as close to the opponent's marginal price as possible. To accomplish such worthwhile agreement, application of DCF methods and "relative valuation" suit best as they are both highly adaptable and credible.

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Is the Virus of International Macroeconomic Interventionism Infectious? An ABCT Analysis

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ABSTRACT: According to Austrian business cycle theory (ABCT), there is no macroeconomic market failure. Under laissez faire capitalism, with extremely limited or no government, there will be no credit-induced business cycles. However, suppose one part of the world engages in credit expansion, which, according to ABCT *creates* the business cycle, while another does not. Will the former infect the latter? Or will the latter be impervious to the governmental depredations of the former? We take the position that although the free market society will not remain impervious to the government failure of the interventionists, it will be sheltered from the full impact of the boom-bust cycle. Do the residual malinvestments constitute a market failure? After all, a free market, in

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this case, is indeed "failing" to bring about the greatest satisfaction of consumer preferences. We deny this claim.

Even though various countries have "independent" monetary systems… inflation taking place in any one nation may have—and often does have—repercussions which go beyond that country's confines…. Thus, even in the absence of an international monetary system, important economic units can transmit the "virus" of inflation to other countries (Heilperin, 1939, p. 164).

I. INTRODUCTION

Austrian economists often advocate a free market monetary system—one that operates without credit expansion or monetary inflation. Such a system is advocated because it would provide greater economic stability, as it would eliminate the Mises-Hayek-style credit-induced business cycle. At the same time, it is admittedly unlikely that one could expect the entire world to immediately change from the current fiat, expansionary monetary system to free market money. So, given that most of the world operates on a fiat basis, could a single country protect itself from credit-induced business cycles by adopting a free market money and banking system? Or, would the existence of credit-induced business cycles in the rest of the world continue to have an impact on a country that adopted a free market regime? This paper suggests that credit-induced business cycles would indeed transmit to a country with a free market monetary system, but that the misallocative effects of these business cycles from abroad would be significantly dampened. In short: the adoption of a free market money in a fiat money world is beneficial, even if it does not completely insulate the country that adopts this system from credit-induced business cycles originating elsewhere.

This paper draws from two existing literatures. First, from the literature on international business cycle transmission. Second, we base our analysis on Austrian business cycle theory, which

place a strong emphasis on credit-driven distortions in the capital structure and economic calculation.

An extensive literature exists on how business cycles transmit across political boundaries—going at least as far back as the specie-flow mechanism described by David Hume in the 18th century. In examining the transmission of monetary disturbances, neoclassical literature has adopted an expenditure-flow approach in which real production is asserted to move in lockstep with movements in aggregate demand. Within this framework, Frederic Mishkin (1995) summarizes four so-called channels of transmission from monetary disturbances to real production: via interest rates, foreign exchange, asset prices, and credit.

We combine these four channels with Austrian business cycle theory, with its emphases on the capital structure and economic calculation. Following the work pioneered by Carl Menger and Eugen von Böhm-Bawerk, we depict production as a capital structure and changes in production as driven by the profit and loss calculations of entrepreneurs.[1] Specifically, we postulate a conjectural case of a worldwide division of labor and capital structure constructed, maintained, and improved by entrepreneurs operating private enterprises within an international market economy. This construction permits us to explore the particular manner in which resources will be reallocated and the capital structure altered across the world economy by monetary disturbances arising in one geographical area and transmitted to another.

Neoclassical attempts to overcome the confining character of the basic Keynesian model have been limited to modifications of minor assumptions of the framework, instead of augmenting the expenditure-flow model with the microeconomics of production and investment in the market. By introducing elements of complexity in the basic model, neoclassical economists have sought to generate more robust explanations and predictions. The neoclassical synthesis of the 1950s developed the IS-LM model which grafted onto the basic Keynesian framework limited

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[1] Capital structure analysis appears in Carl Menger (1976), Eugen von Böhm-Bawerk (1959), Richard Strigl (2000), F. A. Hayek (2008), Ludwig von Mises (1998), Murray Rothbard (2004), Ludwig Lachmann (1978), Roger Garrison (2001), and Jesús Huerta de Soto (2006).

behavioral assumptions. Within the context of the neoclassical synthesis, Robert Mundell developed his work on the international economy. Mundell (1963) and Marcus Fleming (1962) launched open economy macroeconomics by extending a basic Keynesian macroeconomic model to include international trade. In keeping with its Keynesian framework, the dynamics of the system operate through expenditure flows, which now include net exports along with consumption, investment, and government spending. While such models incorporate the exchange rate along with the interest rate as explanatory factors affecting real production, they still exclude the array of prices of consumer and producer goods and the structure of production. As neoclassical macroeconomics worked toward the new neoclassical synthesis, the extended behavioral assumptions generated more complex macroeconomic models.[2] The New Open Economy Macroeconomics (NOEM) began with the work of Obstfeld and Rogoff (1995) who modified the more complex, closed-economy Keynesian models of that period. More recently, the dynamic stochastic general equilibrium models widely used in macroeconomics have become the basis for NOEM. Despite their greater sophistication, NOEM models incorporate neither the interrelated array of prices throughout the economy nor its integrated structure of production. Mainstream economists tend to continue to use their models to analyze the same problems of system dynamics and the consequences of policy variations among countries. We find this approach inadequate for the discovery of the cause-and-effect structure of a changing international economy.

Meanwhile, Austrian macro-theorists have generally considered business cycles within a domestic context. In recent years, several economists working in the Austrian tradition have sought to move the Austrian business cycle into an international context. As a few recent examples: Hoffman and Schnabl (2011) consider the impacts of credit expansion in large "center" economies on smaller "periphery" economies. Cachanosky (2014) extends the Mises-Hayek theory from the original context of the classical gold standard to a world of open economies and fiat currencies, considering both fixed and floating exchange rates in that context.

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[2] On the new neoclassical synthesis, see Goodfriend and King (1997).

Bilo (2018) places credit-driven business cycles in an international framework, focusing on the coordinating roles of interest rates and exchange rates.

These analyses provide important insights into how Austrian business cycles transmit in the current monetary regime, and, in that way, provide an update to, and expansion of, the work of Mises and Hayek. Our paper builds on the recent literature in three ways: first, drawing from Mishkin (1995), we introduce additional potential channels of transmission to the Austrian analysis. Hoffman and Schnabl (2011) focus primarily on the interest rate channel. Cachanosky (2014) adds exchange rates to the analysis, and Bilo (2018) also focuses on these two channels. We add the asset price channel and credit channel as well. Second, we are explicitly considering a case where one country is operating on a fiat basis while the other is operating on a market-chosen monetary system. Hoffman and Schnabl (2011) and Bilo (2018) do not take a stand on the monetary systems in the countries not currently engaging in credit expansion. In contrast, Hayek (1989) analyzed international aspects of three possible monetary regimes, but assumed that each country adopted a similar policy (commodity, national reserve, or fiat). Similarly, Cachanosky (2014) is quite explicit that the analysis in that paper applies to fiat currencies. Third, we introduce the role of economic calculation, which receives no explicit attention in any of the recent work (though economic calculation certainly underlies the coordination failures described by Bilo (2018)).

In the present paper, we explore a conjectural case not found in the literature, which we call a dichotomous monetary regime. The extant literature postulates a homogeneous monetary regime across the international economy, e.g., fiat money produced by the state in each country. We postulate an international economy consisting of a *laissez-faire* monetary regime in one area and fiat money in the other. This arrangement permits us to develop a complementary conclusion to the one reached by Hayek. He (1989, p. 4ff) began his analysis, conceptually, with an international commodity money and showed that moving toward a monetary nationalism of fiat currencies generated more monetary volatility, a result counter to the claims of proponents of monetary nationalism. Our analysis, in contrast, demonstrates that the process of beginning with an international system of fiat currencies moving toward

monetary decentralization based on a commodity standard leads to superior results for the countries adopting the latter. In the period of transition, a dichotomous monetary regime exists, one sector with market money and the other with a state monetary system. Nor is this case interesting only theoretically; it also has relevance for international monetary reform movements toward a pure market economy. It demonstrates that even unilateral adoption of a commodity money standard in a world economy with fiat currencies will, at least partially, insulate a commodity money country from the effects of monetary inflation and credit expansion arising in the rest of the world.

In section II, we describe the channels of transmission. In section III, we report on the two dimensions of the international structure of capital. In section IV, we review F. A. Hayek's work on the transmission of monetary disturbances in uniform, international monetary regimes. Section V stipulates the conditions for our analysis and draws the implications from these stipulated conditions. In section VI, we assess the claim of market failure in the *laissez-faire* sector of the orthogonal monetary regime international economy. We state our conclusions in section VII, along with suggestions for further research.

II. CHANNELS OF TRANSMISSION

Mishkin (1995) provides a summary of four channels through which business cycles can transmit internationally from one country to another as a result of expansionary monetary policy, within an expenditure flow framework.

First, the interest rate channel transmits the effects of monetary inflation by lowering interest rates, which increases investment spending, resulting in a stimulus to production. The interest rate channel can operate internationally through capital-funding arbitrage. If monetary inflation in country B pushes down interest rates in B, then some of the additional credit will be arbitraged via international financial markets into country A, reducing interest rates and increasing investment spending there also. Hoffman and Schnabl (2011), Cachanosky (2014), and Bilo (2018) provide similar arguments, and apply this channel to Austrian business cycle theory.

Second, the exchange rate channel operates as monetary inflation in country B devalues B's currency relative to that of country A. *Ceteris paribus*, net exports in B rise, stimulating production in B, and in country A net exports decline, suppressing production in A. Cachanosky (2014), and Bilo (2018) apply this argument to the heterogeneous view of capital present in Austrian capital theory.

Third, the asset price channel works via a wealth effect. Monetary inflation in country B increases asset prices in B as interest rates are lowered. Investment and consumption expenditures in country B increase in response and production is stimulated. With world-wide asset markets and international financial markets, the same sequence of effects will occur in country A from monetary inflation in country B. In country A, we can explain the asset price effect on two bases: first, the interest rate effect described above leads country A's interest rates to fall as country B's do, which raises the present discounted value of assets paying future cash flows. In addition to this, the wealth effect in B leads some market participants in B to purchase consumer goods, capital goods, and financial assets in A. So, this international arbitrage simultaneously affects interest rates and asset prices. Thanks to the increased value of domestic assets, people in country B will also increase their investment and consumption expenditures.

Fourth, the credit channel transmits the effects of monetary inflation in country B through a rise in bank reserves and consequently bank lending in B. The additional credit finances more investment and consumption which, in turn, stimulates production in country B. With an international system of banking, the central bank purchase of securities in B can expand bank reserves not only in B but also in A, leading to more investment and consumption in A with the concomitant increase in production in country A. This channel works in concert with the interest rate channel, amplifying the effects. The interest rate channel focuses on the direct impacts of the interest rate on investment decisions, while the credit channel focuses on the impacts of the availability of credit. When monetary policy is expanding credit, both effects typically happen hand-in-hand.

III. INTERNATIONAL CAPITAL STRUCTURE

In contrast to other business cycle theories, Austrian business cycle theory placed the capital structure (as described by Menger [1976]

and Böhm-Bawerk [1959]) at the very center of the analysis. Böhm-Bawerk's framework has been further expanded by later Austrians, especially Hayek (1966), Rothbard (2004), and Garrison (2001). Garrison (2001) suggests that Austrian business cycle theory can be thought of as the "capital-based" explanation for the business cycle.

In the Austrian view, capital is best thought of as concrete capital goods that are somewhat specific in their use in the structure of production. Unlike most other theories, which either omit capital almost entirely or which simplify capital to a single homogeneous variable,[3] in the Austrian tradition, capital is thought of as being arranged based on its relationship to its ultimate purpose: transforming the original factors of labor and land into specific, final consumer goods.

The international capital structure brings together two different dimensions in terms of which entrepreneurs must economize: time and space. Each is open to mal-investments, and may potentially be affected by monetary policy.

First, capital has a time dimension. All action is geared toward the future fulfillment of some want—or "consumption." However, immediate want-fulfillment is typically not possible using only the original factors of production, or is less productive of satisfaction than somewhat delayed round-about methods of want-fulfillment. We can arrange capital based on how far removed from consumption it is. Consumption goods (or goods of the "first order") are directly useful in satisfying human wants. Capital goods require some period of time—typically because of the need for some physical transformation—before they will be capable of satisfying a direct want. (As an example of the simplest case: wine must have time to age for it to attain the greatest value for consumers.) Capital goods then can be divided between lower order capital goods—which are closer to consumption and higher order capital goods—which are further removed from consumption. For example: finished products in transit to retail outlets are very low order capital goods. Raw, unprocessed iron still in the ground is a higher order capital good.[4]

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[3] All too often perfunctorily depicted as "k" and then almost ignored.

[4] Garrison, 2001 speaks of earlier (higher) and later (lower) capital goods; Barnett and Block, 2006, in terms of interest elasticities.

Second, capital is arranged in space. Resources and consumers are not evenly distributed across the terrain, and so capital tends to be geographically concentrated based on ensuring access to resources by consumers. While we are not particularly interested in the spatial allocation of capital in and of itself, we are concerned with the fact that spatial allocation leads capital to be placed in different currency areas. Because of the spatial distance that often separates resources and consumers (as well as complementary capital goods!), inter-regional trade is quite common—and, at times, the regions involved are located in countries that use different currencies. The spatial dimension can also carry with it a financial component. Investors are generally not constrained to only invest in local capital. Rather, through the use of financial assets like stocks, investors can invest in physical capital in a country that uses a different currency than their own. So, while physical capital is more location-bound, the ownership of that physical capital is typically not.

When making investments, entrepreneurs consider these two dimensions of time and space. As in all profit-oriented decision-making, businessmen engage in economic calculation to determine the best temporal and spatial location of capital investments. In their calculations, entrepreneurs will consider the interest rate— which impacts their decisions regarding the time axis, and will also consider currency exchange rates (and especially expected changes in those rates)—which will impact their decisions regarding in which country to locate physical capital or in which nation to invest in financial assets. Since monetary policy can affect both interest and exchange rates, it has the potential to alter entre-preneurs' economic calculations—and therefore decisions—along both the time and space dimensions.[5]

IV. UNIFORM INTERNATIONAL MONETARY REGIMES

In his book, *Monetary Nationalism and International Stability*, Hayek (1989) compared and contrasted the inter-connectedness of

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[5] The Austrian business cycle literature—from Mises (1953) through de Soto (2006)—has emphasized the role of interest rates on the time dimension. The new international Austrian business cycle literature has added a consideration of exchange rates, as seen in Cachanosky (2014) and Bilo (2018).

the economies in various countries under three different monetary regimes: a homogeneous commodity standard; a national reserve system (e.g., the classical gold standard); and independent national currencies (e.g., fiat monies during the decade before the Bretton Woods system).[6]

In a Homogeneous Commodity Standard, there are no monetary disturbances. Neither monetary inflation (deflation) nor credit expansion (contraction) is possible. Instead, the production of money is regulated by profit and loss in the same manner as that of any other good. If demand for money increased (decreased) relative to other goods, then the revenue of money production would rise (fall) relative to its costs of production. In response, entrepreneurs would expand (contract) production of money which would lower (raise) the price of their output and raise (lower) the price of their inputs eventually making even further expansion (contraction) of output unprofitable. Increased (decreased) production of money would be balanced by diminished (augmented) production of other goods. Moreover, the calculation of profit and loss for every item in every location would be in the same monetary unit, allowing entrepreneurs to make direct, worldwide comparisons to determine the most economizing use of resources. Likewise, entrepreneurs would be able to directly compare their appraisements of assets in different lines of investment across the entire worldwide capital structure. All production and investment decisions would survive only by passing the market tests of economic calculation. The result of free enterprise and free trade within such a monetary regime would be the greatest degree of satisfaction of consumer preferences via the most extensive development of the division of labor and of capital accumulation. Goods, including money, would move across borders from territories in which they had lower value into those in which they had higher value.

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[6] Milton Friedman (1953) also examines three international monetary regimes: fixed, flexible, and pegged exchange rates. The first corresponds to Hayek's National Reserve System and the second to his National Fiat Monies (with Independent National Currencies). Hayek does not consider Friedman's third case of pegged exchange rates, the prominent example of which, Bretton Woods, occurred after Hayek's book was published. The case Hayek favored, a Homogenous Commodity Standard, is conspicuously absent from Friedman's analysis.

In a Homogeneous Commodity Standard, Hayek (1989, pp. 17–25) showed that the movement of money from one country to another would occur in response to differences in money demand. As would be the case for any good, entrepreneurs earn profit by moving money from the hands of those who value it less and into the hands of those who value it more. Far from disruptive of production processes, such movements of money, as with any other good, adjust the supply that has been produced to accommodate people's preferences. Trade, then, augments the division of labor, increasing the efficiency with which resources satisfy people's preferences. In this system, international trade is similar to domestic trade. In the latter, a change in demand leads to an alteration in the distribution of goods according to the consumers' new preferences. The same occurs with international trade under this system, with the monetary system causing no specifically monetary disruption to the adjustment process.

While there is a common commodity money used in every country in a National Reserve System, it serves as a reserve for each country's currency which consists of fiduciary media issued by each government or its privileged banks or both. Production of money itself, in such a system, can still be regulated by profit and loss since it entails production costs rendered by the market. Moreover, by defining its currency in terms of commodity money, each country fixes the ratio between its own currency and that of every other nation. Without the issue of fiduciary media in each country, this arrangement would not differ in operation from the Homogeneous Commodity Standard.

The issue of fiduciary media, however, is not regulated by profit and loss, but rather always generates seigniorage for every amount issued up to the point at which the currency is destroyed in hyperinflation.[7] Because it is not regulated by profit and loss, generating seigniorage introduces inefficiency into the operation of the market economy. And when privileged banks issue fiduciary media via credit expansion, it not only is indefinitely

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[7] The term *seigniorage* has been used to describe several distinct phenomena. For examples, see Neuman (1992) and Rolnick (1997). We will use the term *seigniorage* to refer to the net income generated by exercising a legal privilege in the production of money and money substitutes.

profitable to the point of hyperinflation, but sets in motion the boom-bust cycle with its attendant malinvestments of capital investment and misallocations of resources.[8] Because its issue is not constrained by demand for money relative to demand for other goods, any issue of fiduciary media introduces an alien element into the market economy. We can call this alien element monetary inflation (deflation) when fiduciary media increases (decreases). In addition to the disturbances to the economy in each country from monetary inflation and deflation, the disparate issue of fiduciary media in each nation can cause monetary disturbances in one country to be transmitted to another. Monetary inflation and credit expansion in one jurisdiction sets in motion a domestic boom. As prices rise domestically and the exchange rate stays anchored to the underlying commodity price ratio, the purchasing power of the currency becomes higher elsewhere. Imports increase relative to exports. When foreigners obtain the currency of the inflationary country, they redeem it for the commodity reserve and it moves from the inflationary country to others. The outflow of commodity reserve, then, collapses the boom in the inflationary country and the inflow of commodity reserve abroad stimulates a boom there.

As Hayek (1989, pp. 25–34) argued, these twin effects in the supply of money are not, however, identical to those brought about by changes in the demand for money in the two countries. The collapse in one area does not translate into expansion in the other area because the movement of money does not occur to satisfy differences in money demand through voluntary exchange. Instead, the adjustment falls upon a different set of people apart from those with differing money demands. Money moves into the hands of investors in the boom area, not those who desire to hold more money. If the exchange rate does not adjust downward to restore purchasing power parity of the inflationary country's currency across other countries, then profit can be earned by moving the commodity reserve in the inflationary country to other countries, even though this does not satisfy a greater demand for money in the latter relative to the former.

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[8] On Austrian business cycle theory (ABCT), see Mises (1953, 1998), Hayek (2008), and de Soto (2006).

The system of National Fiat Monies consists of government-directed production of currency which serves both as money and as reserve for fiduciary media issued by commercial banks. The government directs monetary inflation by printing additional currency and thereby, increasing bank reserves upon which these firms issue more fiduciary media. In such a system, neither money production nor the movement of money is brought forth exclusively by differing extents of money demand relative to other goods among people in different places. Without any change in people's demand for money schedules (and hence, no demand-induced increase in money's purchasing power to justify more production of money), the government and commercial banks can generate monetary inflation by expanding bank reserves and thus the accompanying credit expansion. Even though this activity is not regulated by profit and loss, it does generate seigniorage for the government and commercial banks. As the purchasing power of money is driven downward by its increased supply and interest rates are suppressed by the expansion of credit, people respond by increasing the quantity they demand of both money and credit. The process over time of the lowering of money's purchasing power will be uneven across persons, places, and times because the new money produced will come into the hands of particular people in particular places sooner and other people in other places later. During this process, money will tend to be moving out of the hands of people in places for which its purchasing power has already been lowered and into the hands of people in places for which its purchasing power has not yet been lowered. Because the production of money is not economizing and therefore, leads to artificial volatility in real production processes, the movement of money from the earlier recipients in some places to the later recipients in other places is not economizing overall either. Instead it transmits artificial volatility, bringing more people and places under its effects.

With National Fiat Monies there are two variations. The first, which is the case Hayek examined, may be called Independent National Currencies. In this system, none of the currencies of the various countries serves as a reserve for any other currency. There is no integration of currencies themselves across the various national borders. Changing conditions of demand for and supply

of each currency adapt to demand and supply changes of every other currency through movement in exchange rates. Monetary inflation and credit expansion in one country that lowers the purchasing power of its currency domestically will not result in the movement of its currency to less-inflationary countries. Instead, the exchange rate of its currency will devalue relative to the currency of less-inflationary regions. If the exchange rate devalues before the purchasing power of money declines (rises) domestically, the monetary inflation and credit expansion will increase net exports (net imports) in the more-inflationary (less-inflationary) country and thereby, impose changes in real production processes in less-inflationary countries.

As Hayek (1989, pp. 35–53) pointed out, then, in a regime of Independent National Currencies, the movement of money cannot perform its economizing function at all. He argued that in such a system, actual imbalances between money demands among countries will be dealt with politically. Monetary policy in each country will result in fiduciary expansion and contraction, which brings with it cyclical volatility. This is the very consequence that monetary nationalists claimed to avoid with their program of monetary nationalism. In light of these consequences, Hayek rejected the regime of National Fiat Monies in favor of a worldwide Homogeneous Commodity Standard.

The second variant of a system of National Fiat Monies might be called an International Reserve System. Bretton Woods after the Second World War serves as an example. The currency of one country serves as reserve for those of other countries. Each government pegs its exchange rate with each of the currencies of every other government and buys and sells currencies in foreign exchange markets when necessary to maintain the pegged exchange rates. Monetary inflation and credit expansion of the reserve currency will put pressure on it to devalue against other currencies. Other governments respond with monetary inflation and credit expansion of their currencies in an effort to maintain the pegged exchange rates. As Hayek said about the case of Independent National Currencies, in this case as well neither money production nor its movement can perform the economizing function that entrepreneurs attain in the production and movement of commodity money and other goods. Unlike the case

of Independent National Currencies, however, devaluation that would have occurred as a consequence of sufficient monetary inflation of one currency relative to another will be preempted by monetary inflation of the other currency. Instead of real production processes in the second country being affected solely by the rise in its net imports, it will suffer its own domestic boom from its domestic monetary inflation and credit expansion.

In summary, applying Hayek's analysis demonstrates: (1) both the production and movement of commodity money in a Homogenous Commodity Standard is economizing; (2) the production of commodity money can be economizing under the National Reserve System, but the movement of commodity money set in motion by fiduciary issue in one country generates a boom in foreign lands; (3) the production of fiat money cannot be economizing in a regime of National Fiat Monies; instead there will be monetary inflation and either (3a) the movement of the reserve currency from its country of origin into other countries as a result of monetary inflation will generate booms across them (the sub-case of an International Reserve System) or (3b) the impact of monetary inflation in one country on the money stock of other countries will be determined by politics since the movement of money cannot perform its economizing function (the sub-case of Independent Fiat Currencies).

V. THE DICHOTOMOUS MONETARY REGIME

All the cases that Hayek considered involved a "uniform" international monetary system. That is, he considered examples in which all countries adopted the same type of system. In contrast, we examine a dichotomous international monetary system, in which two countries have adopted different monetary systems. Country A has a market-based commodity money, where the production of money is decided by entrepreneurs engaged in economic calculation of profit and loss, and banks do not issue fiduciary media.[9] Country B has a fiat money and regulates the issue of fiduciary media by commercial banks, but is, otherwise, a

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[9] With this structure, credit-induced business cycles would not occur. See Rothbard, 1962a, 1962b, 1963a, 1963b, 1969, 1983, 1988.

free market economy.[10] Our goal is to analyze the precise manner in which monetary disturbances are transmitted from a fiat money country like Country B into a commodity money country such as Country A, a case Hayek did not study. Given the precise manner of transmission in such an example, we consider a system of "private-enterprise protection" to limit the malinvestments of capital and misallocations of resources in A in response to monetary inflation and credit expansion in B.[11]

Because of international trade linkages, people in Country A would have a limited demand to hold the money of Country B, while those in Country B money would have a limited demand to hold Country A's money. So, international transactions could occur in either currency, allowing for an exchange rate to be established between these currencies (Mises, 1953).

Unlike either the National Reserve System or the National Fiat Currency system with International Reserve Currency, monetary inflation in B does not directly affect the supply of money in A. The money of B cannot become a part of A's money stock. Instead, monetary inflation in B would lead to an appreciation of A's money against that of B as traders in B increase their demand to hold A's money. Even if this appreciation of A's money against B's leads to an expansion of money production in A, the additional production would itself be regulated by profit and loss. With economizing production of money reserve and no issue of fiduciary media, there can be no domestic credit expansion in A. The credit channel's impact is minimal.

Shielded from the possibility of generating its own domestic monetary inflation and credit expansion in concert with the rest of the world, business cycles emanating from B can be transmitted to A

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[10] Austrian business cycle theory describes how this structure leads to business cycles. Keynesianism in its various forms drives this process onward. For critics of Keynesianism, see North, 2013; Block, 1999; Rothbard, 2002; Wapshott, 2012; Cochran and Glahe, 1999; Dempster, 1999; Garrison, 1985, 1992, 2010; Hoppe, 1992; Hutt, 1979; Rostan, 2010; Rothbard, 1992; Skousen, 1992; Hammond, 2012; Ritenour, 2000, Murphy, 2008; Anderson, 2009.

[11] Our literature search included the following, none of whom addressed this possibility, even though all of them write widely and deeply about international economics and macroeconomics: Haberler (1936), Heilperin (1939), Machlup (1943), Roepke (1959), Viner (1937).

by one or more of the other three channels: exchange rates, interest rates, and asset prices. Within the framework of the international division of labor and worldwide capital structure, however, these channels operate, not through expenditure flows themselves but, via the patterns of trade of particular goods and services. As well, resource and capital capacity used in their production according to the economizing position of production and investment that A occupies in the international economy play a role.[12]

Consider first the exchange rate channel. Monetary inflation and credit expansion in B distorts economic calculation, generating a boom in B. The money relation in A, however, is only minimally affected since B's currency is held only to a very limited extent in A's economy. Instead, the pending imbalance in the purchasing power of B's currency in B compared to A will lead to a devaluation of B's currency relative to A's. Entrepreneurs in A, therefore, are in a better position than their counterparts in B to limit the misallocation of resources and malinvestment of capital. Why? This is because the supply of A's commodity money would only increase in response to the increased demand for that money, leaving the purchasing power of A's money relatively stable. Traditional profit and loss accounting is backward-looking. And, generally speaking, there is a temporal gap between when costs are incurred in the purchase of resources and when the revenues from selling the resulting product are earned. If there is a significant change in the money relation—specifically, if the purchasing power of money falls significantly over time, then accounting profit will be overstated. Economic calculation, though forward-looking, is informed by past experience, and when that experience is misrepresented, economic calculation becomes less reliable. Because of the relative stability of the money relation in A, economic calculation in A is more reliable as a guide to production and investment decisions than it is in B. Unless devaluation of country B's currency against that of country A occurs synchronously with the decline in the purchasing power of B's currency domestically, however, the balance of trade will be distorted between the two countries. In the typical case, the devaluation of B's currency

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[12] The effects on the prices and production of particular goods during monetary inflation are attributed to Richard Cantillon (1931). On his contribution to ABCT, see Hülsmann (2001), Rothbard (1995), and Thornton (2006).

occurs sooner than domestic reduction in the purchasing power of B's currency causing net exports (imports) in B (A) to rise. This effect is then reversed as the domestic purchasing power of B's currency falls to parity with its purchasing power in A, given the already devalued exchange rate. The particular goods affected will be those in line with the latent comparative advantages of the two countries.

One would expect B's exports to increase in two ways: first, some goods that B would otherwise consume domestically may now be sent abroad, as the alteration in exchange rates makes exporting look relatively more attractive. Assuming that nominal prices remain nearly the same at first, then the depreciation in B's currency will raise the B-currency price that businesses can receive from exporting simply because a single unit of A's currency has a higher B currency value than previously. Second, non-specific resources initially placed in less export-oriented industries may move into those that are more export-oriented, for similar reasons. This point is emphasized in Cachanosky (2014). Changes in production and investment in the two countries will move along the lines of the worldwide capital structure. Because the exchange rate channel sets in motion a self-reversing effect on profit in particular lines, the effect on production in A depends on the anticipations of entrepreneurs in those lines of production. Just as entrepreneurs in particular lines of production can anticipate[13] other types of cyclical variations in demand for their products, they may be able to keep malinvestments of capital and misallocations of resources within manageable limits. Although the exchange rate channel is not entirely closed, its flow can be mitigated by entrepreneurship exercised in a free market economy.

Consider next the effect of movements of interest rates. As described by Hoffman and Schnabl (2011), credit expansion in B will suppress interest rates in credit markets in that nation. Arbitrage opportunities would arise for financiers who shift investment away from credit markets in B into those in A. As with the exchange rate channel, however, interest rates will operate

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[13] Wagner (1999) argues that businessmen will tend to anticipate the machinations of the Fed which would otherwise create the Austrian Business Cycle, and thus the ABCT is incorrect. For an alternative view, see Block (2001).

through investment in particular lines of production across the capital structure according to latent comparative advantage in A. These investments will increase the prices of assets along particular lines of the capital structure in country A. Unlike the asset channel that operates from monetary inflation and credit expansion within B, however, in A the increased prices of assets will be countered by the decreased prices of other goods. Because any rise in demand for A's commodity money in B will be met by money producers increasing the supply of that money, and there is no other reason for either the demand for A's money relative to other goods or the supply of A's money to alter, the overall purchasing power will change little. Only minimal overall wealth effects will occur. The asset price channel's impact is minimal.[14]

Even though the asset price channel is weak, prices of particular assets in country A will rise along the lines of the boom generated in country B. The extent and timing of asset price inflation will depend upon the anticipations of entrepreneurs who are appraising the realized market price of assets in the future. Alongside these entrepreneurs are investors in financial markets, including foreign exchange, who are, likewise, forming anticipations of the realized market price of future financial assets and currencies. Given an economizing distribution of entrepreneurial acumen across the different lines of entrepreneurial activity in production and investment, the asset price inflation in country B and the devaluation of its currency against that of country A should reflect a similar accuracy relative to the relevant realized market prices. Currency devaluation and asset price inflation set in motion by a given episode of monetary inflation and credit expansion should be roughly synchronous or, at least, more synchronous than currency devaluation and the reduction in its domestic purchasing power. The rise in asset prices in region B, however, will still generate some profit for investors who shift their purchases to A. The extent of the resulting arbitrage, however, will be blunted by devaluation of country B's currency. The more synchronous the devaluation is with the rise in asset prices, the less monetary incentive there will be for such arbitrage.

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[14] As income is reallocated from asset price inflation, distributional effects on wealth may occur. On wealth effects during the business cycle, see Salerno (2012).

To some degree, then, the interest rate channel and exchange rate channel generate offsetting effects on A.

Dornbusch (1976) speaks to the question of timing and how effects on interest rates and exchange rates interrelate. Assuming uncovered interest parity (that is to say: assuming international financial arbitrage), if the interest rates in country A do not immediately and fully adjust when interest rates in country B do, then the exchange rate will "overshoot." Since interest rates are lower in B than in A, the only way for this to be consistent with arbitrage is if B's currency depreciates immediately and severely—so much so that the currency is expected to appreciate over time, to make up for the difference in interest rates. If this is not the case, then investors will continue shifting investments from B to A, which increases the interest rate in B, decreases it in A, and leads to further depreciation of B's currency. This implies that the strength of the interest rate effect and the power of the exchange rate effect are inversely related. If interest rate effects are large, then little overshooting will happen—so the exchange rate effect will be somewhat smaller. If interest rate effects are small, then significant overshooting will occur, resulting in exchange rate effects greater than otherwise would have occurred.

Whatever the residual extent of asset price inflation remains in A, its effect on the broader array of economic activity will depend upon the response of entrepreneurs in the lines of production experiencing asset price inflation. If they resist expanding production, then other lines of production will likewise experience neither significant misallocation of resources nor malinvestment of capital. Whether or not entrepreneurs can provide "private protection" against infection from business cycles generated externally, and if so, in what way they can do this, will be taken up in the next section.

In preparation to addressing this issue, let us summarize the manner in which the virus attempts to spread from B to A. Monetary inflation and credit expansion in country B will generate a boom in B. The money of country A, however, cannot be inflated. Neither can credit in A be expanded. The virus cannot spread significantly through the credit channel. The malinvestment of capital and misallocation of resources in B will be driven by suppressed interest rates and asset price inflation in B and devaluation of its currency against that of A.

Investors in B, who wish to earn the now higher interest rates in A, may do so by purchasing assets and claims to assets in A, which further suppresses the value of B's currency in comparison to A's. Although the asset price inflation in B can have a wealth effect, resulting in further malinvestment and misallocation in B, since the purchasing power of money changes very little in A, only a minimal wealth effect occurs there from the asset price inflation in A. The virus cannot spread significantly through the asset price channel. To the extent that devaluation occurs synchronously with the lowering of the domestic purchasing power of B's currency, the balance of trade between A and B will not change and the asset price inflation infecting A will be limited to the difference between the asset price inflation in B and the decline in purchasing power of B's currency. In the typical case, in which devaluation occurs prior to the lowering of the domestic purchasing power of B's currency and synchronously with asset price inflation in B, net exports (imports) in region B (A) will rise along with the increased demand for assets in area A by investors in B. These effects would then be reversed as the purchasing power of B's currency domestically fell into line with its devalued purchasing power internationally. On net, then, the exchange rate and interest rate channels have offsetting effects on A. In short, the virus of monetary inflation and credit expansion in B does indeed infect country A through changes in the prices of particular goods produced in A along the lines of its comparative advantage. Contrary to the cases of uniform international monetary regimes, in which a boom in one country can lead to a general boom in the other, the transmission of monetary disturbances from fiat money countries into a commodity money country are strictly limited and readily identifiable.

VI. DOES *LAISSEZ FAIRE* FAIL?

Although a commodity money economy would be largely insulated from monetary disturbances generated in fiat money economies, Cantillon effects would occur from the residual asset price inflation in the commodity money country. The consequences for real production processes, however, depend on entrepreneurial anticipations. Entrepreneurs with superior foresight in the lines of production experiencing Cantillon

effects will be less prone to malinvest capital and misallocate resources.[15] They will assess more accurately the extent of asset price inflation and exhibit proper restraint in expanding capital capacity and resource use in production during the boom so as to avoid the losses during the bust. By cutting off the spread of rising entrepreneurial demand for resources and capital capacity at the source, the malinvestment and misallocations associated with the boom-bust cycle can be contained within a narrow scope in country A. Moreover, during the course of the boom-bust cycle, resources and capital capacity tend to move out of the hands of the less insightful and into the hands of those more able to anticipate the future course of events. The less insightful entrepreneurs malinvest capital capacity during the boom and liquidate during the bust. The more insightful ones, by restraining from malinvestment during the boom, put themselves in a position to acquire capital capacity cheaply as the less insightful entrepreneurs liquidate their assets during the bust.[16]

This market process of transferring command over resources and capital capacity away from less insightful and toward more insightful entrepreneurs could be institutionalized into a system of "private enterprise protection."[17] But, here, "protectionism" would take on a very different meaning than that usually accorded to this policy. Entrepreneurs in A would be the agents offering protection to others from the losses of the boom started by B. In contrast with bureaucrats who rely on the ability of the state to punish those who do not comply with regulations, entrepreneurs persuade others to join them in their ventures by finding and offering them mutually advantageous terms for their cooperation. In this case, they would offer protection by persuading others to join them in sustainable lines of production and to avoid the harm to those who might otherwise succumb to the temptation to participate in the boom. Entrepreneurs could form voluntary trade associations to increase the incentives to refrain from short-term gains so as to avoid malinvestments. Voluntary unions among workers could

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[15] On the spectrum of entrepreneurial foresight, see Engelhardt (2012).

[16] John D. Rockefeller's acquisition of oil-refining capacity during the volatility of the 1870s provides an example of the process. See DiLorenzo (2005, pp. 121–130).

[17] On Rockefeller's use of the institution of the trust, see Folsom (2004, pp. 88-89).

reinforce the entrepreneurs' decisions to avoid participation in B's boom.[18] During the boom, entrepreneurs who refrain from increasing production and expanding capital capacity, can still earn profit from higher output prices and equity from the asset price inflation. By forestalling misallocation of resources and malinvestment of capital investment, they can also largely avoid the losses and consequent liquidations of the bust. And although economic calculation is made more difficult by credit expansion elsewhere, movements in foreign exchange rates between the inflated monies and the commodity money provide information that entrepreneurs can use to aid economic calculation which would not be available in absence of at least one country using commodity money. Entrepreneurs have a firmer basis on which to form anticipations of the lines of the boom that might tempt residents of country A into making malinvestments of their capital and misallocations of their resources. Adherence to a free market regime of commodity money would be critical for entrepreneurs to sharpen their anticipations to judge between the lines of production and investment that will prove to be sustainable and those that will not.

Even accounting for "private protection" from the ill effects of monetary inflation and credit expansion generated externally, some residual effects of the boom-bust will remain in the *laissez faire* territory. The final issue, then, is whether or not the residual misallocation of resources and malinvestment of capital investment occurring in A constitutes a market failure.

The main "players" in the market failure literature are monopoly, externalities, public goods, and informational asymmetries.[19] The question now arises: does the fact that economic "infection" can indeed infect economy A constitute a market failure? We deny that this is the case. Why? It is simple. It is not *market* failure that

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[18] Voluntary associations have a long and fruitful role in American life, see Bradley (1965), Dekker and Broek (1998), Gamm and Putnam (1999), Merton (1957), Olasky (1992), de Tocqueville (2003 [1835])

[19] There are literally dozens, scores, maybe even hundreds of others. Here are some of the critiques of this material: Anderson, 1998; Barnett, et. al, 2005; Block, 2002; Callahan, 2000; Cowen, 1988; DiLorenzo, 2011; Guillory, 2005; Higgs, 1995; Hoppe, 2003; MacKenzie, 2002; Rothbard, 1985; Simpson, 2005; Tucker, 1989; Westley, 2002; Woods, 2009a, 2009b.

undermines the economy of A. Rather, it is the *government failure* of B that leads to this result.[20]

Even with the success of voluntary associations to moderate the malinvestments and misallocations arising from Cantillon effects, entrepreneurial errors will occur in A. Some residual malin-vestments and misallocations will remain. We agree with Hayek that a country whose economy is an integral part of the world's cannot be entirely isolated from inefficiencies emanating outside its borders. However, what impairs efficient production in country A is not a market phenomenon but rather one of government intervention in the economy in B, in this case. It is a general conclusion of economic theory that entrepreneurs economize on the use of resources for consumers as best they can in the face of barriers established by government intervention. The reaction by entrepreneurs to government obstacles result in the secondary effects that Mises (1998) demonstrated lead to the tendency for government interventions to accumulate. If the overall result of government intervention and the ensuing entrepreneurial reaction is sub-par compared to the *laissez faire* starting point, the fault lies with the government in B, not the market, in A.[21]

A similar claim can be made about monetary inflation and credit expansion within a given country. It is not a *market failure* that entre-preneurs in A, striving to economize anew in the face of a B central bank driven credit expansion malinvest capital and misallocate resources. The former are, to the contrary, economizing as best they can, given the barriers to doing so instituted by B's central bank policy. Because having a money independent of the inflationary and expansionary process of the central bank would allow them to economize even more fully, entrepreneurs, if given the freedom to choose[22] would establish their own sound money system to insulate

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[20] Contrary to the tendency among neoclassical economists to see market failures everywhere, however, we maintain the Austrian view on this matter that there is no such thing as market failure.

[21] For example, the unemployment of the least productive workers under an effective minimum wage is not caused by the inability or unwillingness of free enterprise to employ such workers absent the legally imposed wage. Instead, the blame rests with the state.

[22] Milton Friedman (1990) argues in favor of being "free to choose." Yet, he was a bitter opponent of the gold standard, something "chosen" by the marketplace,

their operations somewhat from the ill-effects of expansionary monetary policy. One of the key insights of this paper is that, at times, the blame does not rest on the government of the country that feels the ill effects, A in this case. In some circumstances, one must be willing to look abroad to find the original government failure.[23]

Assume that areas C and D both have a policy of total free trade on a unilateral basis. Whereupon D suddenly imposes protectionist measures on imports from C. Will the economy of C be negatively impacted by this unwise measure? Of course it will be. Specialization and the division of labor will no longer be as thorough and all-encompassing as they once were, before protectionism was introduced by D. Would we then acknowledge that "market failure" had overcome *C*? Of course not. Matters would be clear. We would maintain, instead, that the reason for C's economic plight had nothing to do with *free markets*. Rather, we would lay the blame at the door of D, the originator of tariffs and other interferences with full free trade. In like manner, we arrive at the same conclusion for A and B, and the monetary inflation and credit expansion of the latter. Both of these were examples of government failure, not market failure.

Just as unilateral free trade results in the most economizing use of resources for a country adopting it within an international economy of protectionism in other countries, unilateral movement to commodity money will insulate a country as much as possible within an international economy of fiat money inflation and credit expansion. Such monetary reform improves the economizing operation of the market economy within the country that adopts it.

VII. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Stated very briefly, we conclude that economic "infection" is indeed possible. A, despite its market-based commodity money,

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whenever economic actors were, you guessed it, free to choose. See on this Rothbard (2002); Block (1999).

[23] The South Park Movie featured a song called "Blame Canada." We adopt this as our own, only we substitute "Blame B." See on this: https://www.youtube.com/watch?v=bOR38552MJA

can still "catch" the disease of the Austrian business cycle from B. However, A will be less susceptible to the spread of this sickness than would otherwise be the case. And, this does not constitute any "market failure." Rather, this is yet another example of *government* failure.

Before we move to consider directions for future research, we should consider one question that our analysis has assumed away: why don't the two countries in question use the same money? We have built an argument—centered on the reliability of economic calculation—for why entrepreneurs would prefer a commodity money without credit expansion. So, it is no mystery why Country A limits its use of Country B's money. But, why wouldn't the entrepreneurs in B simply begin using A's money? There are two answers. First, we note that, in the short run, a particular money experiences significant network effects. If most of my trade relations are with those who use B's fiat money, then a market actor would likely hold B's money in his portfolio and would probably keep financial records in B's currency. In our analysis we consider a time frame in which Country B simply has not yet adopted Country A's money. Another possibility is that Country B's fiat money may be supported by interventions such as legal tender laws, which provide a domestic advantage to using B's currency which would not apply to A.

What are our suggestions for further research?[24] One possibility is that we pursue evidence of the insulating effect of sounder money. We recommend for all those interested in pursuing it, an analysis of the severity of the boom-bust across different countries with varying degrees of expansionary monetary policy during the recent boom-bust cycle. For example, Zimbabwe, Argentina and Venezuela would be at one end of this spectrum, the U.S. would occupy a position somewhere in the middle of it, and Switzerland would be located at the other end of the spectrum.

Another possibility would be to consider just one country, say Switzerland, which had a floating currency against the Euro before 2011 and a pegged currency from 2011 to early 2015. Under which system did Swiss entrepreneurs do better, *ceteris paribus*? E.g., under

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[24] Unhappily, the answers to these research proposals are beyond the scope of the present paper.

which regime was the ABC more powerful? Cachanosky (2014) provides a good resource for those considering empirical work in relating Austrian business cycles to exchange rate policy regimes.[25]

A third suggestion is to reconsider the experience of those countries that maintained the gold standard during the Great Depression relative to those that abandoned it. The counterclaim that countries that left the gold standard earlier recovered faster than those that left later, may be, in turn, offset by the fact that nations less integrated into the U.S. economy, like Sweden, suffered less during the depression than those more integrated, for example Canada.[26] In short: the present paper suggests that assuming a strong connection between the domestic monetary system and business cycles, without consideration for international impacts, can lead to misleading conclusions.

Our hope is that this paper provides a theoretical grounding for those looking to do this historical work, and an encouragement to those who do it to look at the impacts of the international monetary system on national economies, since, in some cases, solving the mystery of poor economic performance in a generally free market economy requires looking over the border.

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[25] Other empirical studies of ABCT include the following: Bisman and Mougeot, 2009; Butos, 1993; Carilli and Dempster, 2008; Cochran, Yetter and Glahe, 2004; Cochran, 2011; Gallaway and Vedder, 1992; Hughes, 1997; Keeler, 2001; Montgomery, 2006; Mulligan, 2002, 2005, 2006; Murphy, 2009; Murphy, Barnett and Block, 2010, 2012; Powell, 2002; Wainhouse, 1984; Young, 2005.

[26] On France during the Great Depression, see Irwin (2012).

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THE INCOME EFFECT RECONSIDERED

KARL-FRIEDRICH ISRAEL

ABSTRACT: There is an avoidable tension in a recently presented argument against the income effect from the perspective of Austrian or causal-realist price theory. The argument holds that a constant purchasing power of money is a necessary assumption for constructing an individual demand curve for a specific good, and hence that price changes along the demand curve are by definition incapable of exerting a "purchasing power effect," that is, an income effect in standard neoclassical terminology. Price changes are, however, never neutral to the purchasing power of money. We show that the necessary assumption for the construction of a demand curve for a specific good is not the constant purchasing power of money as such, but rather constant opportunity costs of expending money on the good in question. On this basis we show that it is possible to derive a type of income effect in causal-realist price theory. Yet, it might be more appropriate to call it a "wealth effect." Regardless of important and undeniable differences, the gulf between neoclassical and Austrian microeconomics on this point is thus smaller than it has been made to be.

KEYWORDS: income effect, wealth effect, causal-realist tradition, price theory, demand theory

JEL CLASSIFICATION: B53, D11

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1. INTRODUCTION

In a recent publication, Salerno (2018) argues that the income effect is an illusion of neoclassical microeconomics. He demonstrates his claim on the basis of causal-realist price theory in the tradition of Menger, Böhm-Bawerk, Mises, Robbins, Wicksteed, and Rothbard. He thereby picks up a long-standing debate that emerged with Friedman (1949, 1954), who questioned the Hicksian interpretation of the Marshallian demand curve that became the standard view in modern microeconomic demand theory.

Moreover, Salerno rebuts a critique raised by Caplan (1999) against Rothbard (2009 [1962]). The latter was accused of contradicting himself when he rejected the idea of the income effect, while still considering backward-bending labor supply curves to be possible. In fact, Salerno demonstrates that a backward-bending labor supply curve can be derived simply from the law of marginal utility and a given value scale on which leisure is ranked against money balances. Hence, the backward-bending labor supply curve is in principle independent of the income effect as explained in standard neoclassical micro.

While the gist of Salerno's argument is sound, there is a certain tension related to the *ceteris paribus* assumptions he invokes. A slight adjustment of the assumptions, however, suggests that there is a type of income effect to be identified in causal-realist price theory. A more appropriate label might be "wealth-effect," since what matters in causal-realist demand and price theory are *stocks* of goods that individuals possess and demand at any given moment, rather than *flows* of goods, which are a derivative of exchanges, as Salerno convincingly argues.

We will first summarize Salerno's argument in the next section before the tension caused by his stated assumptions is highlighted. We will then proceed to conduct a similar analysis with an adjusted set of assumptions. Finally, the income or "wealth" effect that emerges is illustrated by means of a numerical example.

2. THE CAUSAL-REALIST ARGUMENT AGAINST THE INCOME EFFECT

Standard neoclassical microeconomics separates the effect of price changes along a given demand curve into substitution and income effects. This analysis was introduced by Hicks (1946 [1939]). The underlying assumptions for the construction of the demand curve for a certain good are that the actor's tastes and preferences, their monetary income, as well as the money prices of all other goods remain constant. Hence, a change of the money price for the good under consideration along the demand curve has an impact on real income and the corresponding budget constraint.

Since then, the income effect has enjoyed a long-lasting but scattered debate in neoclassical microeconomics as summarized by Salerno (2018, pp. 27–30). He argues that Friedman and his followers were adopting a specific set of assumptions for positivist reasons. These assumptions would rule out an income effect.[1] The Friedmanite income-compensated demand curve would facilitate the formulation of empirically testable predictions. Salerno thus closely follows Yeager's (1960) review of the *Methodenstreit* over demand curves.

In contrast, the causal-realist rejection of the neoclassical income effect is not based on these positivist considerations that motivated Chicago School economists. Salerno attempts to show that the causal-realist rejection is at least implicitly contained, for example, in the writings of Wicksteed (1933), Mises (1998 [1949]) and Rothbard (2009 [1962]) (see also Salerno 2011, p. 14), and that it can be logically justified as an implication of the existence of value scales and the law of diminishing marginal utility.[2]

Demand curves in that tradition are taken to be pedagogical tools used to illustrate the inverse relationship between the money price

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[1] These assumptions include that real income remains constant, that is, a price change along the demand curve for the good under consideration goes hand in hand with offsetting price changes for other goods (Friedman, 1949, pp. 465–466).

[2] Salin (1996) has previously presented a similar critique of the neoclassical income effect. He concluded that it is a "myth" and since he regarded it as a necessary condition for a backward-bending labor supply curve, he drew the erroneous conclusion that the latter is impossible. Salerno (2018, pp. 37–43) demonstrates why this conclusion is false.

of any good and the quantity demanded, which is an essential part of the process of market price formation. Demand curves are thus not seen to be "real" or anything measurable and observable in the external world. They are abstractions from subjective ordinal preference rankings, which are more fundamental and in an important sense "real," as they partly reveal themselves in every action and choice: "Without the concept of a scale of values, it would be impossible to even describe an acting being or speculate meaningfully about the subjective processes that give rise to purposeful behavior" (Salerno 2018, p. 31).

Different individual value scales in combination with the existing stocks of goods owned by those individuals determine the equilibrium structure of quantities and prices of goods exchanged on the market. As Salerno (2018, p. 31) puts it: "This momentary equilibrium position denotes a state in which all consumers allocate expenditures across goods so that the marginal utility of the last unit of each good purchased just exceeds the marginal utility of the sum of money expended for its price." Demand and supply curves are just means to facilitate the grasp of that mechanism.

One fundamental distinction from the standard neoclassical view that can be drawn directly from this statement is that money itself is treated as a valuable good in causal-realist analysis. It is not simply taken to be a measure of value, or a numeraire. Another important difference is that income as a flow of money plays only a secondary role. In fact, income is the result of market exchanges at certain money prices that one seeks to explain, but "[a]t the moment before any set of exchanges is consummated all that objectively exists are given individual stocks of goods and money" (p. 32).

Salerno does not deny the indirect impact that expected future income may have on the subjective value of existing cash balances in the present. However, for actual monetary exchanges occurring on the market, it is precisely the latter that is crucial: the subjective valuation of cash balances at the moment immediately before the exchanges are realized.[3]

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[3] Salerno (2018, p. 32) explains the special role of the concept of income in economic theory as follows:

In order to derive a demand schedule, certain *ceteris paribus* assumptions are necessary. According to Salerno (2018, p. 32),

> [b]ecause it seeks to explain prices as the outcome of a unitary valuation process that includes money, causal-realist price theory holds the following data constant in deriving the individual demand curve: 1. the buyer's value scale; 2. his money balances; 3. all other prices; and 4. the (anticipated) purchasing power of money.

Thus, in Salerno's (2018, p. 34) presentation of the argument, in order to be able to rank units of money along with various units of other goods on an ordinal unitary value scale a given purchasing power of money must be presupposed:

> In the causal-realist derivation of the individual demand curve, then, units of various goods and of money are ranked and compared with one another by the individual. But in order to intermingle units of money with units of goods on a unitary value scale and judge their relative utilities, a pre-existing purchasing power of money must be assumed.

This assumption is deemed necessary by Salerno, because one has to "abstract from the complexities of the value scale […] to trace out a curve that isolates the relationship between the price and quantity demanded of a single good" (p. 35). Hence, if variations in the purchasing power are not permissible, when constructing

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The notion of (net) income as a "flow" is the outcome of the individual entrepreneur's judgment of a recorded sequence of concrete transactions during a definite period of the past; or it may refer to his summary appraisement of quantities of goods or money that will accrue from discrete acts of exchange expected to take place during a relevant future time period. In either case, it is the product of a subjective judgment, because income in economic theory exists on a different plane of abstraction from realized prices and present stocks of goods and money. The concept of a stock of goods or a realized price is a first-order abstraction of an observable phenomenon referring to an objective result of valuation and action. The twin concepts of income and capital are, in contrast, derived abstractions referring to unobservable mental categories used by the actor in calculating the costs and returns of alternative uses of the objective means of action. These categories are employed in the intellectual process of economic calculation to establish a quantitative distinction that enables capitalist-entrepreneurs and factor owners to net out the consumable product from the gross revenues of their productive activities and to thereby maintain intact the capital value of their resources and their level of consumption in the future.

demand curves, there can be no such thing as an "income effect," which relies on changes in the purchasing power of money. This is why Salerno calls it more appropriately "purchasing power effect." He summarizes his argument as follows:

> Put another way, the demand curve is based on a person's overall economic position and his expectations prevailing in the moment preceding action […] If this were not the case, if the demand curve did not refer to a period temporally and logically antecedent to action, it would be impossible for individuals to formulate a coherent value scale, because the purchasing power of money would be unknown and units of money could not be meaningfully ranked against units of goods. The very existence of money prices thus logically implies the absence of an income effect or, more properly, a "purchasing power effect." That is, in causal-realist analysis, the individual's ex ante real money stock cannot vary with movements along the demand curve, because the curve can only be derived based on an already existing and "known"—or rather, definitely anticipated—purchasing power of money. (Salerno 2018, p. 36)

The effect emerging from a price change along a given demand curve would then have to be interpreted entirely as a substitution effect (Salerno 2018, pp. 36-37).

3. THE TENSION IN THE ARGUMENT

The problem with the argument presented by Salerno (2018) lies in the *ceteris paribus* assumptions that hold all other prices (3) as well as the purchasing power of money (4) constant, while the price of the good under consideration is allowed to change along the demand curve. If the assumption of a constant purchasing power is really necessary to construct the demand curve in the first place, then an obvious tension emerges once we allow the money price for the good to vary along that curve. Changes of the money price of a good are inextricably linked to the purchasing power of money.

The purchasing power of money corresponds to the array of goods that can be exchanged against a given sum of money on the market. Hence, whenever some money price is allowed to change *ceteris paribus*, it has a direct effect on the purchasing power of money. When a money price increases along the demand curve,

then the exchange value of money and hence its purchasing power decrease, and *vice versa*. If, however, the demand curve for a specific good is itself contingent on the purchasing power of money, a price change along a given demand curve is contradictory as it destroys the underlying assumption on which the demand curve is based. In other words, a price change along the demand curve affects the demand curve itself as it changes the purchasing power of money. There could thus be no price change along the demand curve.

Salerno (2018, p. 34) himself is aware of the problem to a certain degree, but he seems to be convinced that it is sufficiently mitigated by invoking the time element:

> The marginal utilities of goods today are derived directly from the varying importance of the wants they are expected to satisfy today. However, judging the subjective marginal utility of money today necessarily entails knowing yesterday's objective purchasing power of money, that is, the inverse of the structure of money prices in all their particularity. This means that before an individual can formulate his value scale in anticipation of today's exchanges, he must refer back to the purchasing power of money that emerged in the immediately previous round of exchanges. In other words, an individual's value rankings and marginal utilities of goods and money, which are operative in determining today's structure of prices, are based on today's valuations of goods and money. But the valuation of money today must refer back to yesterday's purchasing power of money, because it is the only means by which its prospective purchasing power in today's market can be anticipated and its marginal utility set. If money did not have a pre-existing purchasing power – that is, if money never exchanged against goods in the past – market participants would lack the knowledge needed to assign a value ranking to it and, consequently, no one would accept it in exchange for goods today. […] Every money price therefore always contains a time component. […]
>
> There is, therefore, no contradiction in assuming that the purchasing power of money is constant *and* that the price of the good whose demand curve is being analyzed is permitted to vary. For the purchasing power of money that is held constant and on the basis of which the individual establishes his demand curve today is the purchasing power of money expected to prevail today, which refers back to yesterday's structure of prices as the starting point for the forecast.

This is unconvincing, since the purpose of the whole exercise is to illustrate and "explain the formation of ´realized prices'," as Salerno (2018, p. 32) pointed out earlier in his article, that is, in other

words, the purpose of the exercise is to explain the purchasing power of money, at least partly, with respect to a certain good. If the demand curve derived rests on the assumption that the purchasing power of money remains constant, then it does not give us what it is supposed to, namely, the isolated relationship between the price and quantity demanded of a single good and hence an illustration of an essential part of the price formation process on the market that in turn explains changes in the purchasing power of money.

There is no question about the necessity of *ceteris paribus* assumptions in order to derive a demand curve from a hypothetical subjective value scale. We obviously have to keep that value scale constant, but the assumptions cannot extend to the phenomena we seek to explain. Fortunately, the problem is easily solved with a slight adjustment of the assumptions.

The demand curve is supposed to give us the quantities of a good that an individual would purchase at different prices. The trade-off that the individual faces is thus between the marginal value of units of money versus the marginal value of units of the good in question. The marginal value of units of money are essentially given by the opportunity costs of expending a given sum of money in exchange for the good in question. These opportunity costs are indeed closely related to the purchasing power of money. More precisely, however, it is the purchasing power of money with respect to *other* goods that the person values and might want to acquire. There are other factors that might come into play, such as the expectations about the future development of the purchasing power of money, future monetary income etc. Whatever it may be, the important assumption for the construction of a demand curve from an ordinal value scale is that the subjective value of money does not vary relative to the subjective value of the good in question.

Hence, what is needed in order to derive an individual demand curve for a good is simply a fixed ordinal preference ranking of units of money and units of the good. Since, that ranking is subjective and the relative importance of the factors that influence it ultimately is subjective too, we cannot boil this assumption further down. Taking for granted that the only purpose of money is to be exchanged and that its subjective value derives essentially from its purchasing power, we could reformulate the

assumption in very much the same way as Hicks did, namely, that money prices for all other goods would have to remain unchanged. Hence, with respect to Salerno's stated assumptions, there is only a minor adjustment needed. One has to hold constant: 1. the buyer's value scale; 2. his money balances; 3. all other prices; and 4. the (anticipated) purchasing power of money *with respect to other goods*.[4] However, strictly speaking, what has to be held constant for the construction of the demand schedule are the opportunity costs of expending a given sum of money on the good in question, whatever the influencing factors of this subjective notion may be.

It is important to realize that for the derivation of a demand schedule we cannot use a fixed preference ranking for units of *all* conceivable goods on a unitary scale, since such a ranking is indeed dependent on the price structure and would be altered by price changes along the demand curve as Salerno (2018, pp. 36–37) explains. Whether or not an agent would rather have the first unit of good A than the first unit of good B depends on the opportunity costs of acquiring them. The latter are most notably determined by their money prices. Hence, starting from a fixed unitary value scale that ranks units of multiple goods as well as money, we cannot derive the demand curve that we set out to construct, namely, one that allows for analyzing price changes along the curve, because again, price changes along the curve would jeopardize the underlying assumption of the fixed unitary preference ranking that was used to construct the curve in the first place.

Instead, we simply need a fixed preference ranking for units of money and units of the *one* good that we wish to analyze. No other goods appear in the ranking. On such a scale, the changes in the relative ranks of units of the good with respect to units of other goods remain implicit—hidden behind the units of money actually ranked. In fact, this way we could not illustrate substitution effects between different specific goods directly. We can, however, illustrate substitution effects between the one good under consideration and money.

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[4] Only the italics at the end have been added to Salerno's original list of assumptions. Given our notion of the purchasing power of money defined as the array of money prices for various goods, it has to be noted that point 4 is already implied in point 3.

This point deserves emphasis: deriving the demand curve for a good requires fixing its ranks on a unitary value scale. However, changing the money price of the good along the demand curve is not neutral to that ranking, *unless* the only good against which it is ranked is money. The necessary assumption for such a fixed ranking is that the opportunity costs of expending any given amount of money on the acquisition of the good as well as the subjective value of the good itself remain constant. We can thus analyze the substitution effect between that good and money. The substitution effects with other goods that the latter entails remain implicit. Moreover, it becomes easy to also illustrate a type of income effect, which might rather be referred to as a "wealth effect."

In fact, as we will show below, the wealth effect is, in a sense, the more fundamental of the two. It is a direct consequence of any price change along the demand curve. A substitution effect only emerges for price changes along a segment of the curve for which the quantity actually changes, and it effectively adds to the wealth effect only in cases where demand is price-elastic.

4. ILLUSTRATION OF THE "WEALTH EFFECT" IN CAUSAL-REALIST PRICE THEORY

The best way to illustrate the above point is to construct a concrete example. We thus imagine a Bavarian farmer who visits the *Oktoberfest* in Munich, Germany, in order to consume beer.[5] He holds a cash balance of €200. The quantity of one-liter units of beer (a *Masskrug* in German)[6] that the farmer consumes, depends on its money price, his subjective valuation of beer, as well as his subjective opportunity costs of expending a given sum of money on beer consumption. All of these factors that we assume for the following analysis to remain constant are captured in the farmer's ordinal value scale given in Table 1.

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[5] The example is obviously absurd. A Bavarian farmer would much rather stay at his local pub to drink beer than go to the touristy *Oktoberfest*, since the quality of the *Festbier* is relatively low and its price is heavily inflated. Teaching experience shows, however, that absurd and even annoying examples stick in the mind much better.

[6] To be precise, the original *Masskrug* of beer, or simply a *Mass*, contains 1.069 liters of beer.

Table 1: Ordinal Value Scale of Bavarian Farmer Holding a Cash Balance of €200

€200.00
€100.01
(1st *Masskrug*)
€100.00
€40.01
(2nd *Masskrug*)
€40.00
€20.01
(3rd *Masskrug*)
€20.00
€11.26
(4th *Masskrug*)
€11.25
€6.01
(5th *Masskrug*)
€6.00
€3.34
(6th *Masskrug*)
€3.33
€1.43
(7th *Masskrug*)

This representation of the value scale follows the notation used in Rothbard (2009 [1962]), where the units of the good to be acquired are put in brackets and are ranked amongst the amount of money to be given up in exchange for one unit. From the ranking in Table 1, we can infer that the farmer will always hold on to at least €100 of his initial cash balance of €200, before he consumes the first *Masskrug*. His reservation price for the first unit of beer is €100. At any price above that threshold, he would abstain from beer consumption entirely. At any price below, he would at least consume one *Masskrug*. Moreover, he would buy a second unit of beer only at a price below or equal to €40. From the ordinal value scale in Table 1, we can thus derive his entire demand schedule as summarized in Table 2.

**Table 2: Bavarian Farmer's Demand Schedule for Beer Derived
From His Ordinal Value Scale**

Money Price per *Masskrug*	# of *Masskrug* demanded
> €100	0
€100.00 - €40.01	1
€40.00 - €20.01	2
€20.00 - €11.26	3
€11.25 - €6.01	4
€6.00 - €3.34	5
€3.33 - €1.43	6
€1.42 - €0.00	7

Figure 1: Bavarian Farmer's Demand Curve for Beer
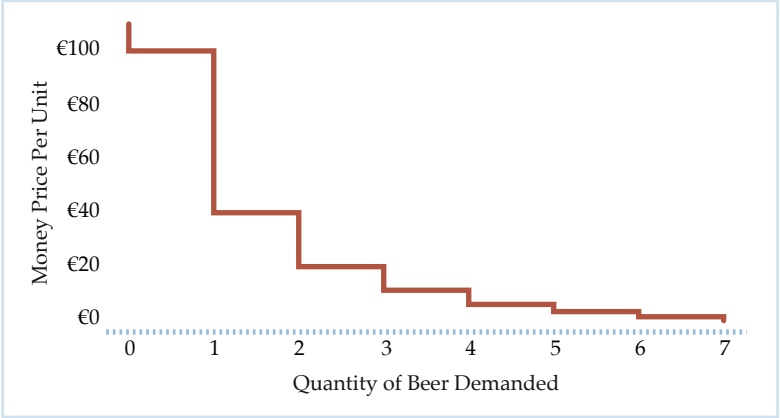
The corresponding demand curve is plotted in Figure 1. As the farmer decides to consume discrete units of beer, his demand curve is a downward-sloping step function.[7]

Every price-quantity combination along the demand curve for beer corresponds to a certain amount of money that the farmer retains in his cash balance, that is, his *retention demand* for money. In

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[7] For the sake of simplicity and brevity, we abstract from the possibility of purchasing half a *Masskrug* here, which would be an insult to Bavarian culture anyway, as far as a Northerner can tell.

our analysis, the sum of money retained corresponds to the farmer's ability to satisfy other wants than his thirst for beer. This includes his demand for other goods that he might also want to consume, such as a roasted chicken, a potato salad, and a good Caribbean cigar, or it might indeed reflect his demand for money as such. The more money he retains, the better he can satisfy his demand for other goods.

At a price above €100 per *Masskrug* of beer, the farmer retains his entire cash balance of €200 as his opportunity costs of purchasing beer at the *Oktoberfest* would be too high. If the price falls below €100, he starts to spend money on beer consumption. He retains 200-$P*Q(P)$ units of money, where P corresponds to the unit price of beer and $Q(P)$ to the quantity of beer demanded at that price. His retention demand for money is plotted in Figure 2. Due to the discrete changes in the quantity of beer consumed, the retention demand for money follows a zigzag pattern.

Figure 2: The Farmer's Demand for Beer and His Retention Demand for Money as a Function of the Money Price Per Unit of Beer
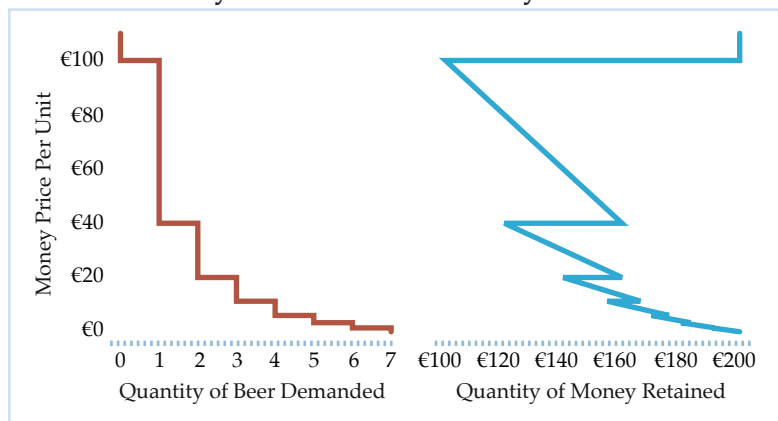
Overall, the retention demand for money increases back to €200 as the price falls from €100 to zero. The zigzag movements of the curve correspond to substitutions between beer and money in the farmer's cash balance, that is, between beer and any other conceivable good that he might want to acquire with the money retained. When the price falls below a certain threshold, he lowers his retention demand for money in order to increase his demand for beer. For example, as the price falls below €40, the farmer

demands a second *Masskrug* of beer and lowers his cash balance accordingly. He foregoes other ends he might want to pursue with the money in order to consume a larger quantity of beer.

However, the overall trend towards a bigger cash balance retained (over the relevant segment of the curve) as the price for beer decreases, captured in the right panel of Figure 2, also encapsulates a change that can be interpreted as a *wealth effect*. This wealth effect with respect to the cash balance becomes obvious over any segment of the demand curve for which the discrete quantity of beer consumed remains constant, that is, a segment of the curve for which the price-elasticity of demand is perfectly inelastic. For any such segment, there is nothing but an increase in the cash balance retained as the price for beer decreases and the quantity consumed remains the same. This means that the farmer's ability to purchase other goods increases while his consumption of beer stays constant. In that sense he becomes wealthier due to decreases of the price for beer along his demand curve.

Figure 3 illustrates this wealth effect with respect to the cash balance as the price per *Masskrug* of beer decreases from €10.50 to €6.50. The farmer demands four units of beer for any of the two prices, but his cash balance increases from €158 to €174, leaving him better off, that is, wealthier, *ceteris paribus*, however he decides to use the additional units of money retained.

Figure 3: Illustration of the Wealth Effect with Respect to the Cash Balance as the Price Per Unit of Beer Drops From €10.50 to €6.50
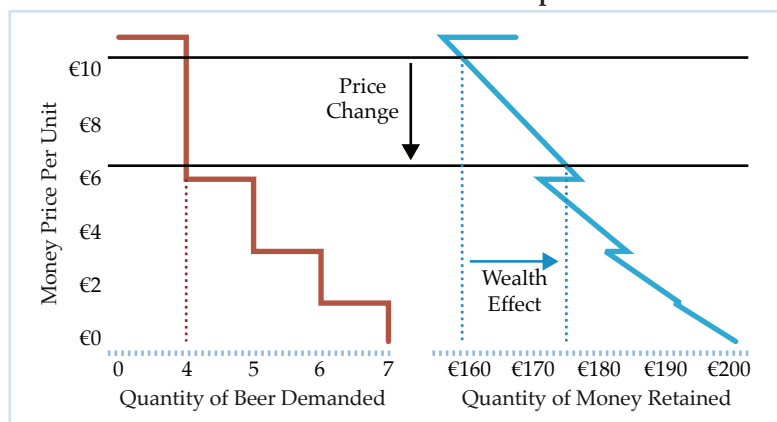
A critic of the above analysis might argue that the example captured in Figure 3 is merely a special case, since the quantity of beer consumed remains constant for the price change under consideration.[8] This is certainly true. The example as such does not suffice to show that something akin to the income effect exists in causal-realist price theory. Yet, it already conveys the basic idea. The example can easily be extended to a case where the price-elasticity of demand is not perfectly inelastic and that includes both wealth and substitution effects with respect to the cash balance and their translation into changes in the quantity of beer demanded.

We simply assume a price change from €10.50 to €4.00 as illustrated in Figure 4. Again, at the initial selling price the farmer consumes 4 units of beer and his retained cash balance is €158. At a selling price of €4 per unit he consumes 5 units of beer and the retained cash balance is €180. Both his cash balance and beer consumption have increased. In that sense, he is obviously wealthier than before. There clearly is a wealth effect. Yet, there is also a substitution effect.

The two effects can be separated from each other in the following way. In a first step, we hold beer consumption constant at 4 units. The farmer thus saves €26 because of the price change (4*[10.50 − 4]). His cash balance as a function of the price of beer at constant beer consumption of 4 units is given by the dashed line in Figure 4. It is simply the prolongation of the first segment of the retention demand for money at point (176, 6) under unchanged beer consumption.

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[8] This has in fact been pointed out by an anonymous reviewer of an earlier version of this paper.

Figure 4: Illustration of Wealth and Substitution Effects with Respect to the Retained Cash Balance as the Price Per Unit of Beer Drops from €10.50 to €4.00
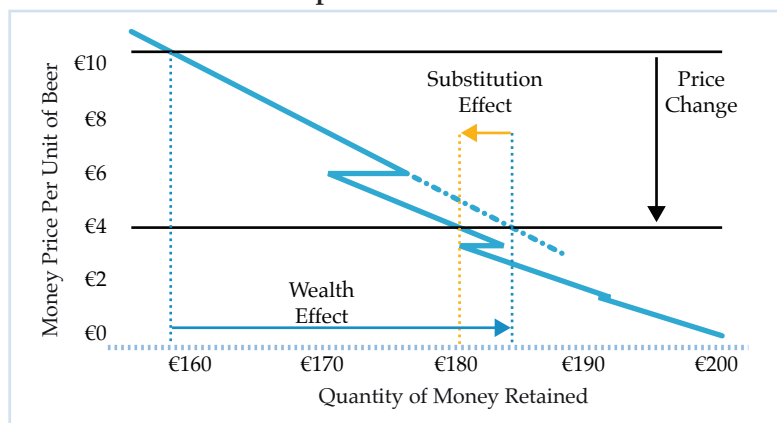
In a second step, we adjust the quantity consumed. The cash balance would be €184 without such an adjustment. However, given the value scale of the farmer, we notice that due to the increased cash balance, the marginal value of money has fallen to the point that the farmer would rather *substitute* another €4 for the fifth unit of beer. This is the substitution effect.

The net effect on the retained quantity of money is an increase by €22, from initially €158 to €180. Solely with regard to the farmer's retained cash balance the overall effect of the price change along his demand curve for beer consists of a wealth effect of 26€ and a substitution effect of -€4. The substitution can thus be financed entirely out of the farmer's wealth improvement in terms of his increased cash balance.

In the above example the overall sum of money spent on beer consumption is lower at a unit price of €4 than at a unit price of €10.50. This means that the farmer's demand for beer is still inelastic, albeit not perfectly inelastic, between the two points considered. However, the same decomposition can be applied to other points on the schedule between which demand is price-elastic, that is, for which the substitution effect outweighs the wealth effect as described above.

**Figure 5: Illustration of Wealth and Substitution Effects with
          Respect to the Retained Cash Balance as the Price Per
          Unit of Beer Drops from €6.50 to €5.90**
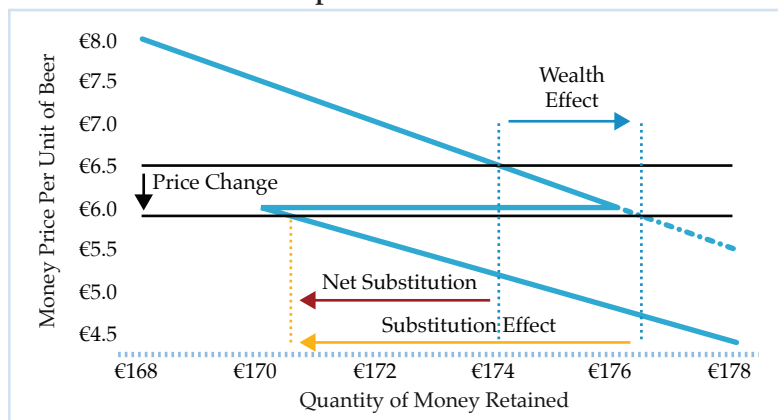

Take, for example, an initial price of €6.50 and an exogenous price drop to €5.90. Analogously to the above case, the wealth effect this time would amount to €2.40 (4*[6.50-5.90]). Without an adjustment of beer consumption, the retained cash balance would thus increase from €174 to €176.40. This would lower the marginal value of money sufficiently to make a substitution of €5.90 for a fifth unit of beer beneficial. The net effect on the farmer's cash balance is then -€3.50. He ultimately holds a cash balance of €170.50. This case is illustrated in Figure 5.

Only in this last example, for which the demand for beer is price-elastic, that is, the substitution effect outweighs the wealth effect, a *net* substitution between beer and money occurs. In other words, the increase in beer consumption cannot be financed entirely out of the wealth effect.

In the previous case, shown in Figures 4, the demand for beer is price-inelastic. Hence, there is no sacrifice to be made in terms of a lower cash balance, as compared to the cash balance retained at the initial price, in order to increase beer consumption. There is no net substitution. At the lower price for beer the farmer can increase his beer consumption by one unit and also demand larger quantities of whatever goods happen to have the highest marginal value for him—be that money itself, or any other good he wants to

consume. The adjustment in the farmer's consumption decisions is better interpreted as a pure *wealth effect*.

In the last example, there is a net substitution. Expansion of beer consumption by one unit as the price falls from €6.50 to €5.90 requires the sacrifice of a diminished cash balance as compared to the cash balance that would have been retained at the higher price. The change in consumption can thus partly be interpreted as a net substitution effect. This, however, does not mean that there is no wealth effect at all. There always is a wealth improvement when the price of one good falls, *ceteris paribus*, because any basket of goods that could have been acquired without the price change can also be acquired with the price change. Any net substitution must then correspond to a wealth improvement that goes even beyond the wealth effect with respect to the cash balance as described above.

Focusing on the cash balance allows us to express both wealth and substitution effect quantitatively. Only in the case where the substitution effect outweighs the wealth effect, as in Figure 5, a net substitution or sacrifice in terms of a diminished cash balance is necessary to expand the consumption of beer. This means that only a part of the substitution can be financed out of the wealth improvement due to the wealth effect. The remainder of the substitution requires a decrease in the quantity of money retained[9] and hence diminishes the farmer's capacity to acquire other goods.

It is the net substitution with respect to the cash balance that can be interpreted as a genuine (or net) *substitution effect* with respect to the quantity of beer consumed. The other part, as it is financed out of the wealth effect with respect to the cash balance, can be interpreted as a wealth effect akin to the income effect in standard neoclassical price theory.

Both effects can be expressed in relative terms. The wealth effect in Figure 5 is €2.40. Hence, 40.68 percent of the increase in beer consumption from the fourth to the fifth unit at a unit price of €5.90 are financed out of the wealth effect, while 59.32 percent of the increase require a net substitution. The net substitution of €3.50

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[9] One should always keep in mind that the decrease referred to in this discussion occurs with respect to the cash balance that would have been retained at the higher price.

translates into the substitution effect with respect to the quantity of beer. This is illustrated in Figure 6.

Figure 6: Illustration of Wealth and Substitution Effects with Respect to the Quantity of Beer Consumed as the Price Per Unit of Beer Drops from €6.50 to €5.90 and Beer Consumption Increases from Four to Five Units
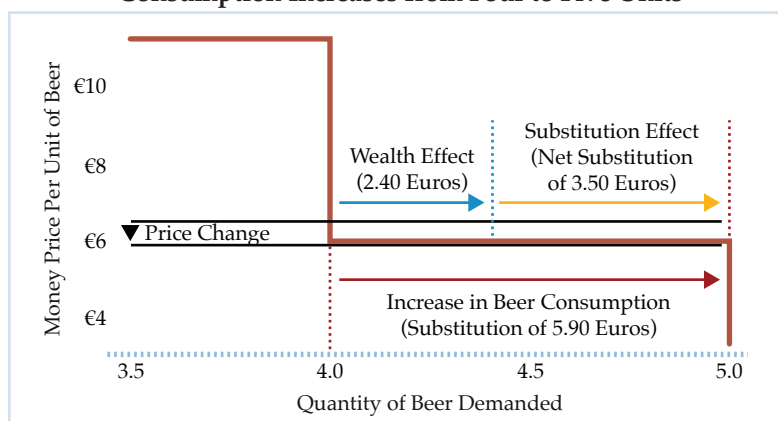
The proposed decomposition has the following implications. First of all, it allows to quantify the substitution and wealth effects with respect to the retained cash balance in all conceivable cases of an exogenous price change.

When, as a result of a lower unit price, the consumption of beer increases but is price-inelastic (Figure 4), the entire increase in consumption is interpreted as a wealth effect. Since there is no net substitution in such a case, there is no substitution effect with respect to the increased quantity of beer. This is because the cash balance that would have been retained at the higher price is taken to be the relevant benchmark and it is smaller than the cash balance retained at the lower price. Hence, the increase in beer consumption can be financed entirely out of the wealth improvement with respect to the cash balance.

In the case of price-elasticity (Figure 5), there is a net substitution. The cash balance retained at the lower price is smaller than the cash balance that would have been retained at the higher price. Only a part of the increase in beer consumption can be financed

out of the wealth effect with respect to the cash balance. This part translates into the wealth effect with respect to beer consumption. The remainder is interpreted as the substitution effect.

The other goods that the farmer might want to acquire remain implicit in the above examples. If we wanted to exemplify the substitution and wealth effects further, we would have to set up a second value scale on which money is ranked against other goods than beer that the farmer wants to purchase at the *Oktoberfest*.

In order to set up the second value scale, the money prices for these goods have to be held constant.[10] From that scale, we could then in very much the same way as above derive the farmer's demand for other goods as a function of the sum of money he retains after beer consumption. Table 3 contains such a mapping.

Table 3: Bavarian Farmer's Demand for Other Goods as a Function of the Sum of Money Retained After Beer Consumption Given a Fixed Price Structure for Other Goods (€12 roasted chicken, €6 potato salad, €6 cigar)

Sum of Money Retained After Beer Consumption (Price per Beer; Quantity of Beer)	Other Goods Demanded
€158.00	1 roasted chicken, 1 potato salad,
(€10.50; 4 *Masskrug*)	remaining cash balance of €140.00
€170.50	1 roasted chicken, 1 potato salad,
(€5.90; 5 *Masskrug*)	remaining cash balance of €152.50
€174.00	1 roasted chicken, 1 potato salad, 1 cigar,
(€6.50; 4 *Masskrug*)	remaining cash balance of €150.00
€182.00	1 roasted chicken, 1 potato salad, 2 cigar,
(€3.00; 6 *Masskrug*)	remaining cash balance of €152.00

We assume a fixed price structure for the other goods. As the money price for a *Masskrug* changes along the farmer's demand schedule for beer, we can now trace the wealth and substitution effects in terms of

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[10] For this extended exemplification of the wealth and substitution effects we thus have to adopt the standard Hicksian assumption of constant money prices for all other goods.

real consumption decisions. At a price of €10.50 per unit of beer, the farmer retains €158 after beer consumption. However, he decides to also purchase a roasted chicken at €12 and a potato salad at €6, thus reducing his cash balance further to €140. As the price per unit of beer decreases to €6.50, the farmer does not change the quantity of beer consumed, but instead buys an additional supplement rounding up the evening, that is, a cigar for €6. Even though his real consumption increases, his final cash balance is even higher, namely €150, due to the strong decrease in the unit price of beer.

If the unit price was to fall even further to only €3, the farmer would expand his consumption of beer and cigars by one unit each, and still end up with a higher cash balance of €152 at the end. Again, there is no net substitution required.

We can exemplify a net substitution in Table 3 as we imagine again a price change per unit of beer from €6.50 to €5.90. At €6.50, the farmer demands 4 *Masskrug* and enjoys 1 cigar as a supplement. He holds a final cash balance of €150. At €5.90, however, he would rather drink the fifth *Masskrug* of beer and forego the enjoyment of the cigar. He would hold a final cash balance of €152.50. He foregoes the consumption of the cigar because the opportunity costs are too high, that is, he prefers to hold a cash balance of at least €146.50 over the consumption of the first cigar. Hence, he substitutes the fifth *Masskrug* and a slight increase of his cash balance by €2.50 for the first cigar.

We want to emphasize again that there is also a wealth effect associated with the price change from €6.50 to €5.90 per *Masskrug* of beer. The farmer saves 60 cents on the first four beers he consumes, adding up to an amount of €2.40. This is, taken as such, undoubtedly a wealth improvement. The above approach that takes account of the cash balance allows to give a quantitative expression of the wealth effect. It goes without saying that it does not provide us with an exact measure of the wealth improvement in terms of subjective utility that results from a lower price per unit of beer.

5. CONCLUSION

Salerno (2018) argues that the neoclassical income effect is a theoretical illusion. However, as our analysis has shown, there

is a kind of income effect, or rather "wealth effect," to be iden-
tified in causal-realist price theory that plays essentially the same
role as the income effect in standard microeconomics. Salerno's
conclusion that everything that emerges from a price change along
the demand curve for a specific good are substitution effects,
must be regarded as too strong a claim. Salerno is misled by his
assumption that the purchasing power of money needs to be held
constant in order to derive the demand curve for a certain good.

As seen above, not the purchasing power as such, but the oppor-
tunity costs of expending any given amount of money on the good
in question need to be held constant. These opportunity costs are
undoubtedly related to the purchasing power of money, but it is
the purchasing power with respect to *all other* goods that matters
here. If we regard the latter as the only relevant factor, then our
assumption for the derivation of the demand curve essentially
boils down to Hicks's original assumption, namely, that the money
prices for all other goods have to remain constant. The actual gulf
between the standard neoclassical view and the causal-realist or
Austrian take on substitution and income effects thus becomes
much less pronounced.

However, there are two important points of divergence. First,
in the causal-realist tradition, money is treated as an actual good
that is valued as such and that is demanded or retained. It is not
simply a numeraire. It is through the ordinal ranking of units of
money against units of a specific good on a unitary value scale that
we can derive the individual demand curve for that good. Second,
income plays only an indirect role. The relevant magnitude is the
cash balance of an economic actor immediately before exchanges
take place. Expected future income may indirectly affect how these
cash balances are valued in the present. But the present valuation
of the cash balance is decisive, whatever the influencing factors are.
Hence, the effect we have illustrated above is more appropriately
called wealth effect. It can be given a quantitative expression in
terms of changes in the cash balance retained that translates
directly into the actor's capacity to acquire additional goods.

The presented approach provides an easy and direct illustration
of a very real phenomenon that most people intuitively understand,
namely, that consumers are made better off when a given good can
be acquired at a lower money price. The wealth improvement with

respect to the cash balance may be used to finance an increase in the quantity of the good demanded. This is the wealth effect. Only the remainder, in case of a price-elastic demand schedule, requires a net substitution. This is the substitution effect.

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HOMOGENEITY, HETEROGENEITY, THE SUPPLY CURVE, AND CONSUMER THEORY

IGOR WYSOCKI AND WALTER E. BLOCK

ABSTRACT: In this paper we try to wrestle with the triviality objection to the concept of the same good. If we define two resources as serving the same list of ends, then whether these items can be subsumed under the rubric of the "same good" revolves around *how* we conceive of ends. If ends are at least partly language-dependent, that is, the way of individuating ends depends on the level of generality with which we refer to them, then the notion of the same good seems trivial. In extreme cases, we can specify ends in such a manner that no two items would fall into the-same-good category. Or, we can construe ends so generally that all resources would be conceptualized as the same good for they would serve the same general ends; e.g., of benefitting their owners. After presenting the problem in detail, we study the implication of our construal of ends. We conclude by showing that the triviality objection cannot undermine Austrian subjectivism.

KEYWORDS: supply curve, homogeneity, heterogeneity, consumption, consumer theory

JEL CLASSIFICATION: B53, D11

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I. INTRODUCTION: STATING THE PROBLEM

The problem of the triviality objection has already been hinted at (Wysocki and Block, 2018), in which these authors suggest an improvement on Machaj's (2007, p. 236) contention that: "We recognize some things as 'supplies,' because we realized they could *serve the same end*." What Wysocki and Block offered instead was:

> We claim that Machaj's grain of analysis is too crude to capture the concept of the same good. For let us imagine that an economic actor is confronted with a car and a scooter. Obviously, the two serve some common ends. Yet, unless the actor is blinded to the non-overlapping ends both serve, he would *falsely* treat them as the same economic good. If an actor's crudely described end is to travel from A to B without specifying either the velocity of the travel or the overall comfort thereof, can these two (with a huge stretch of imagination) be considered two units of the same good?

On the face of it, it appears to be a satisfactory rebuttal of Machaj's position. The fact that two items satisfy *the same end* is insufficient to make them the same economic good for there can be other non-overlapping ends they can serve, which would effectively make them distinct economic goods. So far, so good. Yet, there is a crucial intervening factor that is easy to miss. For the question arises: how do we construe ends; or, more precisely, how do we *individuate* ends? What level of specificity should be involved in individuating them? The proper way of referring to ends is no trivial matter because we are going to arrive at different conclusions as to *a list of ends* depending on how specifically/ generally they are described.[1]

In Section II we attempt to sharpen the formulation of the problem. The burden of Section III is to study the implications of the framework of ends and choices we propose here. In Section IV

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[1] We should bear in mind that ends, being mentally envisaged, are described in intensional terms. For instance, when we have *a need* to go to a cinema to see a film, what would satisfy this need is at least some set of action-tokens. It could be a film F_1 in cinema C_1 or film F_2 in cinema C_2 etc. Our ends are rarely if ever specific as to be satisfied by *only one* action token. This fact allows us for referring to ends in intensional, rather than extensional, terms, which, in turn, gives rise to our problem of ends being at least party language-dependent.

we explain why the notion of supply must be relative to a given economic actor. We conclude in Section V.

II. SHARPENING THE FORMULATION OF THE PROBLEM

Let us illustrate our above rather abstract considerations. To give the *triviality objection* as sharp a formulation as possible, we make these two claims:

1) we can pick such ways of referring to ends that would necessarily render all resources as the same economic good (the same supply) and,

2) alternatively, we can choose such ways of referring to ends that would necessarily render *all* resources as distinct economic goods.

Both outcomes seem highly unwelcome. The first would render the predicate "the same economic good" utterly useless, for this relation would be always instantiated between any two resources (objects) to which we can refer. Hence, the predicate "the same good" would be utterly uninformative and therefore useless. It would be impossible to think of at least one pair of objects such that the relation of "the same good" does not hold between them. There is a rule in logic to the effect that if there is no object that this predicate does not apply to, then the predicate is dispensable for it does not refer to any distinctive property. After all, *ex hypothesi*, all the objects share it.

The second, on the other hand, renders "the same economic good" a relation *sui generis*, something which closely resembles the relation of *identity*. It would follow that the relation of the same economic good would divide the universe of resources into non-overlapping one-item categories. There would not be any two distinct objects that could instantiate the relation of the same economic good. In other words, such a concept of the same good would render as many singletons as there are individual physical objects.[2] Then, the notion of supply would not make any

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[2] There would be an indefinitely large number of these, but not an infinite one. This is because for Austrian economists, resources are discrete, not infinitesimally small. That is, strictly speaking, no supply curve, nor any on the demand side

sense at all. There would always be *only one element* in the supply of any good.

Let us now illustrate how ends should be specified to arrive at our two—equally unwelcome—outcomes. First, for everything to stand in relation of "the same economic good" to everything else (and to itself!), we must refer to ends in most general terms possible. One such example is "to satisfy *a need*" (Wysocki and Block, 2018). When we choose such a criterion for identifying ends, then, trivially, everything that counts as an economic good satisfies that criterion, for it consists of the satisfaction of a need that distinguishes economic goods from all other matter. In this extreme case, we would end up with a supply of one economic good. The point is, all economic goods necessarily satisfy a need, otherwise, they would not be found in this category.[3] Given such a level of specificity of ends to satisfy, cars, women, films and music would be *economically indistinguishable*.

Now let us turn to illustrating how we can end up with each economic good constituting a distinct one from all the others, which is a situation of economic goods being as numerous as resources. Here, the whole universe of economic goods ordered by the thus conceived relation of *sameness* would yield *sui generis* sets. Each would contain only one economic good. There would be no two goods that would be considered identical; e.g., as part of the same supply. It is not difficult to determine how to yield such an outcome. It is enough to describe an end so specific that only one

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either, are smooth, and thus differentiatable or integrateable. For a praxeological criticism of mathematics in mainstream economics that would deny this contention, see Anderson (2001, 2002); Barnett (2003, 2004); Barnett and Block (2006, 2010); Bratland (2000); Bylund (2011); Callahan (2001); Cachanosky (1985, 1986); Hazlitt (1959); Herbener (1996); Hutt (1979); Jablecki (2007); Kirzner (1990); Leoni and Frola (1977); Levinovitz (2016); Menger (1973); Mises (1977, 1998 [1949]); Murphy (2008); Murphy, Wutscher and Block (2010); Pfleiderer (2014); Reekie (1984a, 1984b); Rizzo (1979b); Röpke (1956); Rothbard (1960, 1988, 1993, 1997b, 2011a, 2011b); Shostak (2002); Spadaro (1956); Syrios (2017); Wolfram (2002); Wutscher (2005).

[3] Logical positivists would dismiss this claim as a mere tautology. We claim, in contrast, that it is, instead, a synthetic *a priori* insight. For more on this see Block (1973, 1980, 1999), Batemarco (1985), Fox (1992), Hoppe (1989, 1991, 1992, 1995), Hülsmann (1999), Mises (1969, 1998 [1949]), Polleit (2008, 2011), Rizzo (1979b), Rothbard (1951, 1957, 1960, 1971, 1973, 1993, 1997a, 1997b, 1997c, 1997d), Selgin (1988), Wiśniewski (2014).

resource can fit the description. For instance, let us consider an end such as "quenching thirst at a unique place," with the location being specified in terms of Cartesian coordinates. Our entire supply would then be the universe of drinks at this precise spot.[4] But now, alas, each of them constitutes a different economic good. In this situation, we cannot speak of *a* supply of drinks but rather of as many supplies of drinks as there are drinks (as understood as physical objects) and as many spots or places there are in the universe. What is more, equipped with such a finely-grained conceptual apparatus, we can finally do justice to Machaj's (2007) intuition that a wedding ring on your fiancée's finger is a distinct economic good from all the other wedding rings physically indistinguishable from that one. Now, we can render Machaj's insight trivially true by calibrating the level of specificity/generality of an end that the rings are supposed to serve. To make the ring actually given to a fiancée economically distinct from all the other physically identical rings, the specification of an end should run along, more or less, these lines: "to derive satisfaction from an *actual* fact of receiving a gift from a loved one."

With the distinction between potentiality and actuality, we can easily make any otherwise physically identical stack of items economically distinct. At the very least, such a stack would split into two distinct classes of economic goods, with one a mere singleton containing the ring actually given as a gift. That is, one class would be a singleton encompassing an actually given ring, while the other ones would include all the other physically identical wedding rings. The same would apply to any other type of item in question.[5] An actually received book can (on this account) be considered a different economic good from its identical copies, or counterparts, etc.

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[4] Assuming that there are non-drinks that we can economize under such circumstances, there must be some other criterion to single out other economic goods in this example. Yet, the point remains valid: with an end specified in such a manner, all the drinks are economically distinct.

[5] Similarly, we can attain this end simply by resort merely to geographical space. No two things can occupy the same exact location. Therefore, all rings, or anything else for that matter, necessarily occupy different places in the universe. No matter how identical they may be in other regards, in this one they are different. Hence, each constitutes the supply of a separate good.

As an aside, it is worth noticing that the actuality/potentiality distinction applied as a criterion to determine whether a heap of items are the same economic goods or not closely resemble the well-identified fact that that two goods are the same economic good cannot be by any means demonstrated in action (Wysocki and Block, 2018). Action is analogous here to actuality and prior-to-actual-choice situation is analogous to potentiality. It has been long recognized by Block[6] that there can be no indifference demonstrated in action.[7] Now, we can see which assumption lay behind Block's contention: he believed (and made it explicit) that when we are confronted with a heap of physically identical items and we happen to pick up a particular one, the inference is that the one *actually* picked up immediately starts constituting a different economic good, distinct from the ones we did not choose. Seen in this light, it is no surprise that Block maintained[8] that a bunch of identical dollar bills are the same economic goods before action, but then split into two classes of distinct economic goods once a particular dollar bill has been picked up; e.g., for the purpose of making payment. However, we can specify serviceability in such a manner that actuality (an actual choice) plays no role. For example, we would be inclined to say that this bunch of dollars are all the same economic good whether they were acted upon or not because we construe their serviceability only as a *potential*. That is, even if we choose a particular dollar, we can claim that equally well any other dollar *could have been picked up* and that is why they are economically on a par. This counterfactual statement cannot be demonstrated in action either, but the relation of sameness between economic goods does not yield itself to demonstration easily.

III. IMPLICATIONS OF SPECIFYING ECONOMIC GOODS IN TERMS OF DIFFERENTLY CONSTRUED ENDS THEY SERVE

Since we established (or stipulated?) that whether two goods fall into the same-good category depends on at what level of

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[6] Block (2009), Block and Barnett (2010).

[7] And so the fact that two resources are the same economic goods cannot by the same token be demonstrated via human action.

[8] See fn. 9, *supra*.

generality we specify the ends they respectively serve, we are now ready to carry on with our agenda and study the implications of our concept of supply and hence the supply curve.

First of all, we posit that whether two items represent the same economic good always depends on how a given economic actor envisages his ends. This, in turn, implies that there can be no inter-subjectively correct answer to the question of whether two physical goods can be subsumed under the category of the same good. For the answer thereto is always contingent upon the way of referring to an actor's ends. Or, in other words, the decisive factor is the way an actor mentally frames his choices. For instance, consider a person who envisages his choices (in intensional mental terms) as (in the descending value scale):

1. Going to a cinema with a woman

2. Playing football with friends

3. …

Taking this description seriously, we must conclude that (prior to taking any real action), any ordered pair (a, b), where a stands for cinemas and b stands for the companionship of women, would do equally well. That is, as envisaged, there would be no real choice[9] between cinemas and neither would there be between accompanying women as the use of an indefinite article suggests. After all, an economic actor frames his most important end as going to a cinema with a woman. This implies that it is any cinema and any woman in combination that would allow this economic actor to achieve his end. Economically speaking, all female companionship falls into the same class (they constitute one and the same supply for this actor) and the same applies to available cinemas.[10] What

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[9] At least as believed by this actor. Equivalently, we might say that the actor believes that any cinema is as good as any other and the same applies to the companionship of women. Technically speaking, all available cinemas would constitute the same economic good and all female companionship also fall into one and the same class of economic goods—though that class is obviously distinct from a class of the cinemas mentioned earlier.

[10] There can be an interesting objection raised against us; that is how we do know that in our scenario female companionship and cinemas constitute distinct economic goods? After all, both female companionship and cinemas contribute to the satisfaction of this end and our very criterion of distinguishing between different

is more, any pair instantiating the generically described action of going to a cinema with a woman would be preferred to any action-token exemplifying playing football with friends.

However, undeniably, the choice specification may be subtler. To that effect, consider what follows:

1. Going to cinema *C* with *a* woman

…

Now, no other cinema than *C* would do equally well although the actor still considers the companionship of all available women as constituting the same economic good. Now, any ordered pair (*C*, *b*), where *C* is a proper name of that given cinema, and *b* again ranges over some universe of available women would be, from the point of view of the actor in question, as good as any other, which implies that all available female companionship falls into the category of the same economic good.

Finally, an end may be specified as specifically as possible, e.g.

1. Going to cinema *C* with a woman *W*, traveling along the road *R*

Now, any means contributing to that end are necessarily hetero-geneous; that is, it is only cinema *C*, woman *W* and road *R* that will do. No other alternatives are equally good. It follows that cinema *C* is economically distinct from any other cinemas available, and the

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economic goods is by consulting which ends (given by intensional descriptions) a given means can satisfy. Now, if it were the case that the only end a cinema can satisfy is to go with a woman thereto and the only end female companionship can satisfy is go to a cinema so accompanied, we would apparently be at a loss. For it would then be the case that the ends served by the two would be co-extensive and therefore equivalent. In the absence of cinemas, female companionship would cease to be an economic good; whereas in the absence of female companionship, cinemas would lose their economic character; nay, they would even lose the character of a good—they would then be useless. Our reply is two-fold. First of all, even if co-extensive, these two economic goods would be accounted for by *different* descriptions: *cinemas* would still serve as a place to take a woman, while *female companionship* would serve to go to a cinema so accompanied. Even if services are co-extensive (if female companionship is an economic good, you take the woman to a cinema; and when a cinema is an economic good, you go there with female companionship), these two rather constitute perfectly complementary goods. Second, and less philosophically, our economic actor could easily envisage some ends female companionship can satisfy outside cinemas, which would conclusively render cinemas and female companionship economically distinct.

same point holds for women and roads. Summarizing, whether any given pair of goods are in the same supply depends on how a given economic actor frames his ends. A pair of items would thus constitute the same economic good *relative* to one way of describing ends but not from the other.

IV. WHY THE NOTION OF SUPPLY MUST BE RELATIVE TO A GIVEN ECONOMIC ACTOR

First, it must be noted that since we construe of the same economic good as encompassing the items that are believed by an economic actor to serve the same ends (goals being framed by that actor himself), physical sameness does not readily translate into economic identity (see: Machaj's example of a wedding ring). What is more, belonging to the category of the same economic good could be *imputed* by an actor on items of different physical constitution since he might find them equally serviceable *with respect to some end*, as specified by him. In other words, there are no implications at work here: physical and economic sameness are not synonyms.

The correct inference from the above consideration is that a notion of a supply cannot be constructed along the lines of physical sameness. It is simply not necessarily the case that a stack of physically identical items would always constitute one and the same supply. Let us consider persons A and B and their respective, mentally framed, ends. A's end is to travel from C to D (at any velocity, under any circumstances); whereas B's goal is to depart from C and arrive at D with a velocity ranging from 80–100 mph. Certainly, different items would satisfy these respective ends. A would find all vehicles equally serviceable; whereas B would make some finer distinctions; that is, a car would do for him but not a bike or a plane for that matter. Since for these two persons, the items falling under the category of the same economic good would differ, we cannot stack those clearly distinct supplies on a two-person scale, let alone draw up a supply curve taking into account the both of them. What is worse, one man's meat is another man's poison. It can turn out to be the case that an item which is an economic good for A constitutes an economic bad for B or *vice versa*, which would again preclude the derivation of any social notion of the supply. Therefore, given that, it seems that our

two extremes alluded to in the introductory section can be exemplified. There can be an individual for whom all goods would be perfectly heterogeneous, while there can be another one for whom everything is economically the same.

If we are to escape from the Scylla of only one good, and the Charybdis of an indefinitely large number of them, we must resort to Austrian subjectivism.[11] That is to say, for some people, cars, female companionship, films and music are the same good. For others, for most of us, this is just plain silly. Thus, there is no one right way to determine the supply of a good. It varies from person to person, and, for each individual, it varies over time, as tastes change.

Precisely the same dilemma confronts advocates of antitrust lawsuits under neoclassical monopoly theory. The plaintiff[12] wants to define the industry as narrowly as possible, so that the concentration ratio can be maximized. For him, the desiderata are not all food, nor all breakfast food, nor all cereal, nor, even, all dry cereal. In his view, even further industrial considerations must be employed, for example, whether the product includes sugar, or raisins, or anything else he can think of to raise the concentration ratio. In sharp contrast, the defendant desires as wide as possible a definition, so that the concentration ratio vanishes into thin air. For this side of the lawsuit, cars, female companionship, films and music will do just fine, and, even better if ski vacations, violins, bananas, shoe laces, etc., are tossed into the mix as well. So, who is correct? The plaintiff or defendant? The response emanating from the subjectivist economist is, don't be silly. Any answer will necessarily be arbitrary. And yes, as the entire antitrust philosophy requires a coherent response to this challenge, it, too, must be jettisoned.[13]

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[11] States Hayek (1979, p. 52): "And 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." Also, see the following on this issue: Barnett (1989), Block (1988), Buchanan and Thirlby (1981), Buchanan (1969, 1979), Butos and Koppl (1997), Cordato (1989), DiLorenzo (1990), Garrison (1985), Gunning (1990), Kirzner (1986), Mises (1998 [1949]), Rizzo (1979a, 1980), Rothbard (1979, 1997), Stringham (2008).

[12] Whether a private party or the government.

[13] For an Austrian critique of this legislation see Anderson, et. al. (2001), Armentano (1972, 1982, 1989, 1999), Armstrong (1982), Barnett, et al. (2005, 2007), Block (1977, 1982, 1994), Block and Barnett (2009), Boudreaux and DiLorenzo (1992), Costea

V. CONCLUSION

Does the triviality objection pose any problems for Austrian subjectivism?

We contend that the answer to the above question is 'not at all.' Quite the reverse, once we construe the same economic good as this class of items that are perceived as serving the same ends, these being specified intensionally, we predict that there *can be* such economic actors for whom perfect economic homogeneity or perfect heterogeneity of goods will hold.[14] In fact, Austrians believe that any human action demonstrates heterogeneity of goods even if they are physically indistinguishable.

Finally, perfect heterogeneity and perfect homogeneity must be a part and parcel of Austrian subjectivism. Certainly, since economic actors usually exhibit some finer discriminatory abilities (they frame ends more specifically), these two extremes are expected to be rarely instantiated.[15]

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[14] Neither is likely, but it does not constitute a logical contradiction to posit it exists.

[15] To reiterate, heterogeneity is ubiquitous—any human action evidences it. After all, the claim that two items are the same economic good cannot be demonstrated in action. But two means can constitute the same economic good if they are believed to be equally serviceable with respect to some end/ends.

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BOOK REVIEW

THEORIA GENERALIS: DAS WESEN DES POLITISCHEN

ULRICH HINTZE
BAD SCHUSSENRIED: GERHARD HESS VERLAG, 2018, 599 PP.

PAUL GOTTFRIED

Ulrich Hintze, an unassuming German dentist who belongs to multiple learned societies, has produced a massive work intended to provide what its author describes as a "general political theory." This theory, however, may be less noteworthy than the journey through which Hintze escorts us, which is a *Wanderreise* through the thought-provoking work of other thinkers. Hintze's theory is based on several reasonable assumptions about valid political authority, e.g., that political responsibility requires the freedom of the individual. Moreover, freedom presupposes the existence of order that is necessary to protect its practice, and order is dependent on the sense of responsibility among the citizenry.

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According to Hintze, the operation of these principles ensures a "constructive" politics, one that unleashes the vitality of those who are subject to its order. The opposite of this desirable state is a "destructive" politics, one in which the government is predatory on the work of its subjects and acts in a generally arbitrary fashion.

Hintze develops his arguments primarily through the work of three German-language thinkers, the interwar socialist Hermann Heller, the father of Germany's "new existentialism" Hermann Schmitz, and the social economist Ludwig von Mises. His examinations of the thought of Schmitz and Heller were for me instructive excurses, and this was particularly true of Hintze's efforts to extract a liberal nationalist core from Heller's "moderate" social democratic views. In the case of Schmitz, he is uncovering unexplored ground for most American readers (even for a German intellectual historian like myself). Although a widely read thinker in Germany, Schmitz's meditations are not an easily acquired taste on this side of the Atlantic. His strenuous attempts to ground his variation of Heidegger's *Existenzphilosophie* in natural science and more specifically in the physical body may be the most inaccessible topic in Hintze's work.

What for me is the most interesting aspect of that study is its extensive use of Mises to create a *Staatslehre* (theory of the state). In the process Hintze takes aim at the anarcho-capitalists who draw on Mises's writings to invalidate any involuntary political association. He seems especially bothered by the view taken in the writings of Murray Rothbard and Hans-Hermann Hoppe, that order and a general legal structure can be maintained in the absence of a state. Hintze quotes against this position the view of the *Rechtsstaat* (the state under law) which Mises presents in *Im Namen des Staates oder die Gefahren des Kollektivismus*, a work that the economist produced in Geneva in 1938–39, after his flight from Nazi Germany. Although that work was first published in a very limited edition in Switzerland, it did not become widely available until it was republished in 1978. It is discussed in, among other places, Guido Hülsmann's comprehensive English-language biography of Mises, which Hintze cites to good effect. Hintze notes that although Mises's book is best remembered as a warning against lawless government and as a very pointed polemic against Nazi tyranny, Mises carefully contrasts this despotism with what he considers a lawful regime. It is one that

protects property and accepts limits on its own authority. Hintze argues from these passages that Mises never rejected political authority altogether but seems to have advocated something of the kind that I describe in *After Liberalism* as "the bourgeois liberal model of the nineteenth century."

Where Mises failed in his political thinking, according to Hintze, was in believing that democracy and the modern party state can be counted on to preserve liberal freedoms. Hintze is at his best in showing why this is not the case. Contrary to what Mises hoped, modern "liberal democracies" have created "destructive" governments, which treat income and property as political spoil, attack historic liberties through parasitic, uncontrolled public administration, and think nothing of launching wars. Although I'm not sure that Hintze's suggested remedies (a return to local governments with restricted citizenship) is any longer feasible, he is dead on in his political criticisms. He is also perceptive in pointing out the inherent contradiction of modern democracy, which treats equality as a fetish and creates a vast bureaucracy with vast power to ensure its implementation. Apparently increasing disparities in power is necessary in order to make people more equal.

Where Hintze is also at his strongest is in examining the political implications of Mises's understanding of social-economic problems. Mises's insistence on subjectivism in understanding economic choices and his stress on the complexities of market transactions have political lessons to teach. In extending this line of thought, Hintze also draws on Schmitz's notion of "*Meinhaftigkeit*," the self-discovery of the individual through the recognition of what is his. He points out the conceptual overlap between this idea and Mises's focus on the subjective basis of economic and moral situational decisions. Hintze defends subjectivism in the context of exploring the right and ability of the state to impose purposes and preferences for individual lives. Throughout the book he comes back to what he thinks are the sensible, justified limits as to what the state should be doing for us. Its function is to protect, not to replace individual choices with its grand plans.

Two small quibbles: Hintze's discussion of Mises's ideas about individual actors pursuing rationally their subjective purposes recalls Max Weber and his treatment of *Zweckrationalität*. Although Hintze offers a vast panorama of German social and political

thought, he should have furnished some discussion of Weber, a German intellectual titan whom Mises undoubtedly read. It seems that Mises not only studied Weber but in *Epistemological Problems of Economics* (as I learned from Dr. David Gordon) he set out to differentiate his subjectivism from Weber's purposive rationality. *Pace* Hintze's treatment of Carl Schmitt, I'm not sure that Schmitt's *The Concept of the Political* demonstrates "destructive politics," if that is what Hintze is suggesting (which is not quite clear in the pages devoted to Schmitt). In this interwar classic, Schmitt is not urging, as Hintze at least suggests, "that we name, combat and defeat our enemy and build friendships with that in mind" as everyday political practice. He is proposing a "criterion of the Political," just as there are criteria for other "relatively independent areas of human activity, such as the moral, aesthetic and economic." Just as in these other areas, we are led to draw necessary distinctions, for example between the beautiful and the ugly, in the political realm we distinguish between friends and enemies. Although Schmitt views the "Political," properly understood as the most intense human antagonism, he is depicting an existential state, not necessarily a directive for supervising the building of roads or enforcing commercial contracts. Schmitt was certainly no liberal (in the true nineteenth-century sense), but in *The Concept of the Political* he is not calling for the war of all against all. To Hintze's credit, he never explicitly states this.

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BOOK REVIEW

THE HIGH COST OF GOOD INTENTIONS: A HISTORY OF U.S. FEDERAL ENTITLEMENT PROGRAMS

JOHN F. COGAN
STANFORD: STANFORD UNIVERSITY PRESS, 2017, 513 PP.

MARK THORNTON

Entitlement programs such as Social Security, Medicare and Medicaid are the "elephant in the room" for America. They are projected to expand enormously and to destroy the US economy in the coming decades, but little is being discussed or implemented to address the seriousness of the issue. Indeed, the trend has been to expand entitlements over the last half century.

Economist Lawrence Kotlikoff has estimated that the present value of the "fiscal gap," i.e. the projected entitlement expenditures minus projected entitlement tax revenues, to be in excess of $200

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trillion! That figure leads me to thoughts of hyperinflation and the severe damage it can do to society.

One approach towards improving our understanding of the issue and the problems it causes is by studying the history of entitlements. John Cogan provides an excellent introduction and overview of entitlements in *The High Cost of Good Intentions: A History of U.S. Federal Entitlement Programs*.

Cogan describes the current state of affairs as: "The scale of federal entitlement assistance today is unmatched in human history…. While the massive expenditure has significantly reduced poverty among senior citizens, poverty rates for all other adults and for children are no lower today than they were a half century ago." (pp. 1, 2)

However, the idea that poverty rates are still as high for non-seniors can only be sustained if you ignore all the monetary and nonmonetary benefits that the "poor" are given. When those benefits are accounted for, the people in the bottom of the income distribution statistics are not much worse off than the working middle class. (Gramm and Ekelund, 2018)

Cogan's historical investigation finds at least two major problems. The first is that as "well meaning and beneficial as many entitlements may be, they have come at a high cost. They have undermined the natural human desire for self-sufficiency and self-improvement." The second problem is the book's central theme: "the creation of entitlements brings forth relentless forces that cause them to inexorably expand." (p. 4)

President Franklin Roosevelt's "New Deal" and Lyndon Johnson's "Great Society" produced the modern and most famous entitlements, but the history of U.S. entitlement programs is much longer and broader. Indeed, this deeper history highlights some important lessons about the origin, growth, and reform of entitlements.

The early entitlement programs were targeted at war veterans and followed similar paths of development. The Revolutionary War initially provided entitlement benefits to members of the Continental Army and Navy who were disabled during the war and to family members of those killed in the war. Benefits were extended over time to veterans of the state militias, those who were

disabled after the war and eventually to all living veterans. Thus a disability program was transformed into a pension program.

The Civil War, WWI and other military conflicts resulted in military entitlements too. At first, they were limited to veterans that were disabled during the war. The entitlements expanded on the backs of budget surpluses to include veterans disabled after the war and eventually to all remaining veterans. The good thing about entitlements for veterans is that if you do not have wars, eventually the entitlement will be retired for lack of beneficiaries.

The early navy pension fund was financed from the sale of captured ships and cargos of enemy boats, e.g. pirates. As the fund expanded, Congress voted to increase benefits to such an extent that they completely drained the fund and the pensions had to be supported with general funds. Therefore, it is a likely precursor of Social Security, how it expanded and what will become of it.

In Chapter 7 Cogan deals with the birth of the modern entitlement state: the New Deal. It was a "progressive" revolution. Prior to the New Deal, most assistance for the needy was provided by the private sector: mostly civic organizations, clubs, and churches. There was also assistance provided by state and local governments.

Here Cogan finds that it is not just Congress behaving badly, but also the beneficiaries who have bad incentives. "Regardless of where eligibility rules were drawn, the provision of assistance would create incentives for potential recipients to modify their behavior to qualify for aid, often in ways detrimental to their own long-run interests." (p. 82) In today's framework, this would be people gaining enough body weight to qualify for disability benefits.

Early "outdoor relief" provided money to people who were unable to provide for themselves. However, this was found to encourage too many people to request aid who were actually able bodied. In response, governments started emphasizing "indoor relief" where the poor elderly would be housed and feed in almshouses, children in orphanages, the insane in mental asylums, and the able bodied in workhouses. This not only reduced people seeking assistance, but it also provided progressive reformers the opportunity to save the souls and livers of the retched.

One surprise from the book was that President Franklin Roosevelt opposed most entitlement benefits for veterans. He was able to

successfully cut those benefits, at least temporarily. His vision was that government benefits should not be based on class, i.e. military service, but should rather be open to all Americans. Roosevelt's approach led to the largest reductions in entitlement spending for veterans in US history and "served as a template nearly fifty years later for Ronald Reagan, the only other twentieth-century president to achieve significant entitlement restraint." (pp. 74–75)

Roosevelt's New Deal was first and foremost about providing security, so it included Social Security and unemployment insurance where individuals pay in over time and eventually collect benefits. Cogan shows that the Supreme Court was a big part of the problem. He does not deal with Roosevelt's preferred approach to relief, that of make-work jobs and public works. It should be noted that his approach not only sounded better to taxpayers, in that it required work and produced public goods, but it also served as an enormous source of political patronage that sustained FDR politically throughout the 1930s.

One deficiency of the book is its seemingly intentional neglect of the role of ideology. For example, he mentions all of the progressive characters that were responsible for bringing New Deal entitlements to life, as described by Rothbard (1996). However, he does not discuss the deep ideological themes that unite them. In the background of progressive thinking there is the drive to create a heaven on earth in preparation for the return of Jesus. In the foreground there is the statist ideology of Progressivism, the American version of socialism. Ideology explains the why, when and where of the emergence and evolution of entitlements throughout this period.

The book goes on to report on post-WWII entitlement programs, such as the GI Bill, the continuous expansion of Social Security entitlements, and the failure to introduce national health insurance before coming to President Lyndon Johnson's War on Poverty. The Johnson administration had promised that the welfare rolls would shrink with his policies. Instead, like most other such promises, the number of people on the rolls soared to record levels. Instead of being lifted up, the welfare family was increasingly living in broken homes due to illegitimacy, divorce, separation, and desertion.

According to Cogan "Welfare was also becoming a way of life for an increasing number of AFDC households…. The bold and

confident promises of the War on Poverty's architects were turning out to be empty." The cost of the programs was skyrocketing far beyond projections.

Shockingly, according to Cogan:

> The main beneficiaries were the service providers, mainly middle-class professional social workers in and outside of government welfare agencies, educators in schools of social work, legal services lawyers and academicians. The federal government was spending more on professional social workers than on school lunches for poor children. (p. 207)

The rest of the book chronicles the period from the late 1960s to the present. It's not a pretty picture. With few exceptions, entitlement programs have gotten worse. The only bright side is that this experience vindicates economic and public choice theory. Politicians have continuously used our taxes to buy votes, not to help people, just as theory would predict. Theory also correctly predicts that some people, namely recipients and bureaucrats, would take advantage of entitlement-welfare programs. Predictably, this has led some unfortunate people to lead a dull, lazy, almost inhuman existence. The failure of all the reforms to entitlements is testament that these problems are part of the very nature of such programs.

I never detected an overt ideological aversion to entitlements in Cogan's book. Rather it was his frustration and concern for the country's future that was evident. For instance, in the case of Social Security and Medicare, he concludes that:

> Together these now massive entitlements can, by themselves, afford many retirees a middle-class standard of living, often supplanting other meaningful sources of retirement wealth that retirees would have accumulated in the absence of these entitlements. (p. 376)

He expresses the frustration of the working class when noting that welfare benefits are increased during recessions when others are hurting and they are also increased during expansions when the working class is paying more taxes and creating budget surpluses.

He concludes that the entitlement programs have worsened the problems they were designed to solve and are now giving out massive subsidies to the non-poor.

> In 2015, only 26 percent of all cash entitlement assistance was spent to reduce the extent of poverty. Including the market value of in-kind benefits, only 21 percent of entitlement assistance went to alleviating poverty. Sixty-three percent of all cash and in-kind benefits distributed to poor persons was over and above the amount necessary to lift them from poverty. (p. 382)

The problems of entitlements are intractable and solutions are vexing, to say the least. This book proves it.

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Book Review

The Problem of Production: A New Theory of the Firm

Per Bylund
London: Routledge, 2016, 194 pp.

Mateusz Machaj

Literature on the theory of the firm is literally flooded with a repetitive question: "Why do firms exist?" It has become such a monotonous query that while addressing it, it is increasingly difficult not to fall into either of the two traps: make trivial points, or worse, make trivial points disguised in difficult and sophisticated terminology. Fortunately, Per Bylund's book does not fall into either of those, and offers an original contribution to the theory of the firm. Moreover, I believe that he does not fully recognize how shattering his point is. After reading *The Problem of Production: A New Theory of the Firm*, one no longer is inclined to ask the question

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about firm's existence. A more proper question should be "Why do markets exist?" Bylund has made a compelling Austrian argument that makes the firm's appearance even more fundamental than the market. Firms precede markets.

To summarize a central thesis: what is the firm? The firm is the outside-of-the-market creation of a novel production function, since its internal organizing of factors is distinct from and unsupported by the existing market structure. In other words, firms exist because they are the only possible rational channels of introducing innovations to society. At a particular point in time, the extent of a market only supports some types of production and closes into "specialization deadlock" (Bylund, 2016, p. 4). Many hypothetical and heterogeneous investment projects require sinking specific and complementary factors of production into risky areas. The markets for intermediate goods created and used up in those projects do not exist. Therefore, the only way for those projects to be materialized is to organize a specific human entity around it: the firm (Bylund, 2016, p. 103).

Through such reasoning, Bylund is accurately seeing the firm as a mechanism to unlock "specialization deadlock." I would call it, then, an unlocking theory of the firm—a theory of an entity which unlocks the door to projects that were not introduced into the market and were not tested by it each step of the way. By placing an emphasis on the dynamic unlocking part of organizing, Bylund avoids many of problems present in previous theories—either focusing too much on the legal aspects (Grossman and Hart, 1986), or the supposed hierarchy (Williamson, 1967), or explaining the firm's existence by reference to particular economic costs (Coase, 1937). So far, the most important Austrian contributions to the theory of the firm were made in significant articles in Klein and Foss (2012), where authors are building bridges by finding enlightening and eloquently Austrian themes in competing theories. Bylund's book structure takes a more sweeping approach and builds his theory from scratch on Austrian foundations.

One difficult aspect of Bylund's thesis is a lack of more practical examples that could help to narrate his points and efficiently navigate the story (which overall has a very good arrangement). Rough considerations about factors 11, 12, and 13 may make it hard to follow the reasoning. I may try to join in with something

more concrete to exemplify his explanation of why firms emerge as sort of "out of the market" phenomena.

Take the case of car manufacturers, who decide to implement an already existing new feature, say, to sell cars that already have child seats integrated with a final product. The current extent of the market has already everything "priced in." There is a price for a final car and the components necessary to construct it. There is a price for a child seat that can be bought separately (and inserted by the customer). Prices for child seat components are already there. There are many competing car companies and even more child seat producers. Both industries are so developed that it is easily knowable how current market circumstances view both products: a car with a child seat in it and a car without it. The only uncertain thing that remains to be discovered is what the customers prefer.[1] The current (empirical) state of the market is that people prefer to generally buy those products separately. In any case, there is no extra benefit of choosing either way of production. There is no significant role for the firm, as the choice of production is somewhat forced onto the producers by the market and at already existing prices.

Things are different, however, once we consider the processes of production which are not covered in the existing extent of the market. Let us move back couple of decades into the times of internal combustion engine cars using exclusively either diesel or gasoline. Now, some producer develops an entirely new idea: a hybrid car that has two sources of power, a traditional internal combustion engine, and a battery, which can enhance performance, or perhaps fully substitute the engine at times. The novel idea of a hybrid car is not in place yet. At the same time, it requires significant changes in existing ways of production. A completely new version of the battery has to be produced to fit the car and its components, the drive has to be adjusted in order to accept energy from two sources, the gears must be modified, and new types of brakes are to be integrated with a regenerative braking mechanism that will charge the battery. All of those changes are central to innovation that is not supported by the extent of the market.

Many of the used materials in the process are purchased in the market, but the project is done by an innovative firm—and *it can*

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[1] I am presenting the argument here, although I do not fully agree with it (see below).

only be done so. Hence the clear reason we have firms in the market: because they are agents of innovative change. The materials used in production of a hybrid car are purchased in the market, but the integration of all the components is done in the "island of specialization," the firm implementing a particular entrepreneurial vision of building a hybrid car with all of the necessary components. The project itself is realized by imaginative thinking and if it succeeds, that particular firm becomes an organized entrepreneurial imagination (Bylund, 2016, pp. 82, 109). The market process develops further and the firm is absorbed by the market (Bylund, 2016, p. 113). As hybrid cars come into greater demand, other companies follow suit, while at the same time a market for components develops. Now, specialization is becoming much deeper, new companies are formed to work on each of the parts of the car and the hybrid mechanism. New firms producing batteries are flourishing, and the same can be said about units producing specific types of braking and drive systems. Now a company interested in supplying hybrid cars may gather the relevant information from the market: many producers of both the final product, and many competitive suppliers of the components—something that earlier had not existed. The firm has been "absorbed by" the market.

Perhaps another clear example could be provided with smartphones that use very rare chemical elements which decades ago were considered mostly waste (Abraham, 2015). The initial idea to create touchscreen smartphones was imaginary as the market for those elements was radically undeveloped and specialization for smartphone components production was in the distant future. The companies going into the business had to make a decision about combining the components in ways that previously were not tried and tested. Once the product became successful, markets for intermediate products and subcomponents emerged—and so did competition which brought on further improvements in quality and pricing.

In such a way, the firm is seen as an agent of change in the market. Bylund offers a strong argument about the existence of firms by combining essential features of the Austrian School: methodological individualism, disequilibrium, uncertainty and heterogeneity of capital (Bylund, 2016, pp. 17, 22, 26, 38). All of those characteristics are integrally tied to the idea of the firm. What

makes Bylund's point so persuasive and captivating is that he does not start from equilibrium at all. His theory is rooted in methodological individualism; he does not try (like Coase, for example) to explain human behavior by relating it to some external parameter, such as costs of using the market mechanism (Bylund, 2016, p. 86). Rather the firm is a creative implementation of the entrepreneurial ideal, an end and the final cause in itself: an organizational project motivated by a visionary wave of the future.

Bylund also explicitly starts from disequilibrium, as it creates necessary conditions for the firm's emergence due to limits of existing methods of production. Capital heterogeneity and uncertainty are also in the center of his argument as they place limits on entrepreneurial risk taking (Bylund, 2016, p. 58). Any investment process is susceptible to sudden uncertain change, therefore starting a project "outside" of the current market means creation of more specialized production connected with more specific intermediate capital goods. Remember: those are goods which are complementary to the uncertain project, and the *market for those goods does not exist yet*. That further increases the uncertainty factor as the innovative choice may result in tremendous sunk costs (Lachmann, 1948, p. 204). Here it is worth noting how important the social and legal conditions are: an entrepreneur acting in a firm needs to persuade the investors and other stakeholder to realize the project, and to continue it during hard times.

The author has made a striking contribution, but I do not think he goes far enough in his considerations, and perhaps is not fully aware of the advancement he has made. His primary interest was to explain why firms emerge. The answer lies in the innovative actions of entrepreneurs. Yet as Bylund is well aware, the longevity of the firms is much greater than the implementation of innovation, when he states:

> A possible explanation for why firms survive past what our framework seems to explain is that we have not considered strategies adopted by individual firms to extend their lifespan and extract value from their positioning outside the extent of the decentralised market. It should be in the interest of the individual firm to raise barriers to entry into the created production space such that a first-mover advantage is created and profitable production can be prolonged. Such strategies to deter new entrants or make entry economically unfeasible can range from

organisational measures to encapsulate fully or make the production process opaque, to gaining control of the supply of necessary resources or sources of input (Bylund, 2016, p. 195)

Therefore "there is room for explaining how and why firms can survive past their initial function as an 'island of specialisation'"—and the story has to be bigger than monopolization and rent-seeking. Well, perhaps the problem may exist from a Schumpeterian perspective, but not a Misesian one. Maybe we should understand innovation more broadly—not just as significant discrete alterations in methods of production, but also as continuous minor adjustments *and* even doing passively repetitive routines. With that addition in mind, Bylund's unlocking theory of the firm is actually not only about innovative changes and Schumpeterian breakthroughs (as he seems to suggest). The logic of his Austrian argument goes further. After reading the whole book one just cannot help but to reflect: so that actually explains not why firms exist, but why the market exists. The firm is a fundamental unit of the market, with the latter being a derivative. Economics is founded on *human* action, not *market* action. Firms are market creators—without them the markets could not exist. But firms are also market followers. That is the unavoidable logic of Bylund's Austrian consommé consisting of methodological individualism, disequilibrium, uncertainty and capital heterogeneity. Firms are always working with their production functions: they always *implement* them, they always *change* them, but they also *routinely repeat* them. Doing things as they were done yesterday, or perhaps slightly adjusting them, is still a firm's choice. *A market* is never doing anything. A market is a result of firms' actions attempting to coordinate production and prices of various products (Mathews, 1998, p. 43; Demsetz, 1993, p. 162). Bylund (2016, pp. 86–90, 121, 122, 132) many times strongly defends that perspective.

Therefore, in order to explain the occurrence of firms we do not need to envision radical changes in production functions, although imagining them is the easiest way to grasp the firm's importance for socio-economic evolution. Besides, quite often entrepreneurial breakthroughs are done by more firms than just one, and frequently in skewing existing markets. Perhaps a historical case could illustrate the point. At the edge of the industrial revolution, clock production was dominated by experienced craftsmen, who produced high-end

watches suitable for preferences of rich customers. Everything changed with Georges Frederic Roskopf, who had an ambitious plan to produce a "worker's watch"; a functioning time indicator cheap enough so that any person could afford it.

Roskopf's project—ridiculed by many—eventually succeeded due to significant changes: usage of the cheapest metals, leaning of the production (smaller number of parts and economic factor usage), and two important parts, the so called pin-pallet escapement and porte-échappement. All those things were not entirely new, and were produced previously. Roskopf's breakthrough was fitting the idea into the pocket watch to massively produce a cheap final product (Buffat, 1914, pp. 9–10). He tried to cooperate with many people in the business, but it required them to alter existing habits to accept orders for creating necessary components. While experiencing various forms of resistance he was inclined to create the watch on his own, but eventually decided to cooperate with other factories and existing suppliers (ibid., pp. 11–12, 14–18).

The "worker's watch" proves that Bylund is entirely on spot with treating the firm as a praxeological concept, since it is organized around a specific entrepreneurial idea. At the same time, it does not have to bring creative destruction to the current extent of the market. The firms are driving agents of markets that more or less evolve—and they are also at center of markets that are very sluggish in evolving. Most of the firms are going bankrupt, especially the most innovative ones. They go out of business because other firms survive and make better judgments. Just as a firm may be an entity of innovation, it also may be an entity of conservation and keeping of the existing routines. Knowing when and where to rebel against the *status quo* is key to entrepreneurial success. Sometimes repetition is key, sometimes mutation is, and firms are the only agents to test out various business strategies for flourishing and survival. Keeping production functions stable is also a deliberate choice.

Bylund, perhaps unintentionally, puts (correctly) an argument on its head. For many years classical economists and later Marxists argued that profits are a derivative of economic process with wages being fundamental variables. The reality is that profits are logically and economically prior to the wage fund. Bylund is offering a similar revolution in the theory of the firm. For decades the literature

has been tangled in a limiting Coasian narration: firms develop as derivatives in the market—as islands of planning and hierarchical power. Bylund proposes the other route: markets are developed as derivatives of imaginative entrepreneurs, creating those organizations called "firms." By changing the perspective in such way, we are offered another deadly blow to the neoclassical framework.

The author has constructed a beautifully crafted Austrian argument, but at times it leans slightly too much towards Schumpeter (Bylund, 2016, pp. 83–84, 100, 109, 131, 136).[2] I cannot see that as an important shortcoming, however, since his point can easily be extended to be in full compliance with Mises's notion of an entrepreneur: the firm is an agent of any economic choice, since repetition is also an entrepreneurial choice shaping the market. Perhaps we could paraphrase Rothbard's response (2004, p. 494) to Schumpeter and argue that firm is an adjuster, not just narrowly interpreted innovator.[3] That would also fully comply with Klein and Foss's framework of seeing the firm as the "organized entrepreneurial judgment" in the environment of heterogeneous capital resources.

To conclude, I believe Bylund did offer a new theory of the firm: unlocking theory. I am not the one to make a strong judgment on the topic, but cannot wonder if we are seeing a genuine contribution to the subject that should be seriously considered by experts in the field.

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[2] Schumpeter's original point is of course in Schumpeter ([1913] 1934).

[3] That can coincide with Rothbard's line about "*decision-making function*, or the ownership function" for which the owner receives income (Rothbard, 2004, p. 602)—income that is outside of interest income.

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