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# Imputation and Value in the works of Menger, Böhm-Bawerk and Wieser

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## 1 Abstract:

Analysis of the discussions within the first two generations of the Austrian school of economics constitutes an inevitable cornerstone of every further inquiry on the fields of the theory of value and imputation theory. Only with knowledge of Menger's, Wieser's and Böhm-Bawerk's understanding of cardinalism and problems related with utility, value and their interdependence, we are apt to understand correctness or incorrectness of their positions and also positions of their followers.

Thus, we could trace back cardinalist notions of utility seeded by Menger and understand later Mises'-Čuhel reformulation of the whole value theory into an ordinalistic one. Mises fully escaped the Mengerian tradition in this point and also transformed the whole theory of imputation into the theory of pricing of the factors of production. The only exception, from the point of view of imputation theory of highest importance, is his insistence on the value equation of means and ends that confused his successors and was investigated only recently.

Within the context of present state of value and imputation theories, two related problems arise: "What constitutes theory of imputation, theory of value and valuation of the factors of production, today?" and "Is Menger-Böhm-Bawerkian solution of imputation theory really suitable for the explanation of the pricing process and isn't Wieser's objection of circularity of the imputation theory applied in price-creation justified?" These are the questions that are badly needed to be answered in order to clarify the theory in the field.

**Keywords**
Value theory; imputation theory; Austrian school of economics.

**Jel classification**

B19 – History of Economic Thought through 1925: Other

B25 - History of Economic Thought since 1925: Historical; Institutional; Evolutionary; Austrian

B53 - Current Heterodox Approaches: Austrian

D46 - Market Structure and Pricing: Value Theory

# 2 Imputation and Value

The theory of imputation[1], i.e. theory of value and valuation of the goods of higher orders, did not intellectually start with the Austrian school of economics[2]. However, from the point of view of the subjective-theory of value, this topic arose as the serious object of systematic economic inquiry, not counting neglected work of H. H. Gossen[3], only with publication of Carl Menger's Grundsätze der Volkswirtschaftslehre in 1871[4] and the creation of the Austrian school of economics[5].

Investigations in this area were one of the most lively among the Austrian camp from its beginnings up to the end of the 1930s, when the explicit debate died. Nevertheless, fragments of its topics have preserved in some forms till nowadays. The quarrel concerning the reason of the impossibility of the socialist commonwealth as a consequence of the knowledge or calculation problem is definitely one of them as well as many other incoherencies between "misesians" and "hayekians". This two-camp schism, represented in the line of Carl Menger – Eugen von Böhm-Bawerk – Ludwig von Mises on the one hand and "walrasian" line of Friedrich von Wieser and his followers such as Hans Mayer or F. A. von Hayek on the other hand, shows very strong counterpoints culminating especially in the theory of imputation. Even new approaches to imputation are touched in the present-day research although only implicitly. Namely, the article of professor Hülsmann[6] shows that the ideas are still under the process of development, although on the front of the interest.

The objective of this work is a summary of relevant presented ideas within the first two generations of the Austrian school of economics. We will investigate Carl Menger's approach, its relations with Böhm-Bawerk's and Wieser's works and consequent dispute of these two brothers-in-a-law.

# 3 The Legacy of Carl Menger

To understand Menger's point of view we will go through the first three chapters of his Principles. In the case of Menger, one should keep in mind that this book was only part of

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[1] "This term was introduced into economics as Zurechnung by ... Friedrich Freiherr von Wieser... The term was a legal one, and the analogy was based on the legal method by which the jurist imputes guilt or liability to one or another criminal or tortfeasor." In Murray N. Rothbard, "Imputation", The New Palgrave: A Dictionary of Economics, (London and Basingstoke, The Macmillan Press Limited, 1987), vol. 2, p. 738.

[2] Rothbard paraphrases Aristotle's analysis from the "neglected work" Topics in M. N. Rothbard, "Imputation", The New Palgrave: A Dictionary of Economics. See also Justin Ptak, The Prehistory of Modern Economic Thought: The Aristotle in Austrian Theory, (http://www.mises.org/workingpapers.asp, 2003), p. 6

[3] H. H. Gossen, Entwickelung der Gesetze des Menschlichen Verkehrs, (Amsterdam, Nieuwe Herengracht 31, 1967)

[4] In the present article, citations from this work will be based on the English translation: Carl Menger, Principles of Economics, (Grove City, Libertarian Press, 1994)

[5] "Since Gossen's work went missing for decades and had no influence on the development of economic theory, the founders of modern value theory who are known under the name 'Austrian school'... are justly regarded as the originators of the general theory of imputation..." Hans Mayer, "Imputation", Israel M. Kirzner ed., Classics in Austrian Economics, (London, William Pickering, 1994) vol. 2, p. 28

"A systematic development of the theory of imputation has taken place … only since the publication of Menger's Grundsätze der Volkswirtschaftslehre in 1871." F. A. von Hayek, "Some Remarks on the Problem of Imputation" in: Money, Capital, and Fluctuations: Early Essays. Roy McCloughry, ed. (Chicago: University of Chicago Press, 1984), p. 37

"…Gossen is worthy of particular notice… [h]is Entwicklung … almost entirely disappeared from sight in Germany…" in Friedrich von Wieser, Natural Value, (New York, Kelley & Millman, 1956), p. 8

[6] Jörg Guido, Hülsmann, A Theory of Interest, The Quarterly Journal of Austrian Economics, Volume 5, no. 4 (Winter 2002), esp. pp. 86-92

his never completed treatise. A detailed solution to the problems of the value and price of the factors of production was intended to appear in the following, never published parts[7].

## *Cause and effect*

> "All goods are subject to the law of the cause and effect" (Menger (1994), p. 51)

This sentence opens the first chapter of the Principles and its presence is felt in the background through the whole book. The next step – existence of humans with their needs dependent on the external state of affairs – is put into the picture (ibid., p. 52). These two propositions imply the existence of things that have an ability to cause the satisfaction of human needs. In the case that a man has command over a thing of which he is aware that it satisfies his need, it becomes a good (ibid., p. 52). Some goods are able to satisfy needs causally directly (goods of the first order), others only indirectly (goods of higher orders)[8]. Goods that causally directly serve in the production of first order goods are goods of second order, goods that causally directly serve in the production of goods of second order are goods of the third order, etc… But it should be kept in mind that

> "… goods-character is not a property inherent in the goods themselves…" and also that "…the order of a good is nothing inherent in the good itself…" (ibid., p. 58)

The prime mover here is the human with his needs. The concrete employment proposed by the human is the factor of determination.

Menger sees two limitations in the goods-character of the higher order goods. It is worthy of remark that these two limitations are sort of a red thread that links his whole higher order goods' exposition.

The first one is linked with fact, that in order to bring final satisfaction, there is the need for cooperation of multiple complementary goods. In the case that some of the complements is missing, the other goods lose their goods-character in connection with this satisfaction[9].

Menger's second point concerns the fact that the goods of higher orders derive their goods-character from the corresponding goods of lower order (ibid., p. 63). The causal relationship in satisfying human needs is the inevitable precondition of the goods-character of a thing. While the causal relationship goes down from goods of higher orders to the final satisfaction, the goods character is derived from the satisfaction and goes up from lower to higher orders[10].

## *Needs, requirements and supply*

Our world is a world of causes, effects and quantities.

> "The quantities of consumption goods a person must have to satisfy his needs may be termed his *requirements.*" (emphasis in the original) (ibid., p. 78)

We require both goods of the first order and goods of higher orders, but

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[7] See Samuel Bostaph, Wieser on Economic Calculation under Socialsm, The Quarterly Journal of Austrian Economics, Volume 6, no. 2 (Summer 2003), p. 18, n18

[8] "... are used for the production of goods of … [lower order], and can thus be put in an indirect casual connection with the satisfaction of human needs", ibid., p. 57

[9] "*...the goods-character of goods of higher order depends on our being able to command their complementary goods...*" (emphasis in the original), ibid., p. 61-62

[10] "The goods character of a thing is ... dependent on its being capable of being placed in casual connection with the satisfaction of human needs."(ibid., p. 64) "It is clear that with the disappearance of the corresponding needs the entire foundation of the relationship ... for the goods-character of things ceases to exist.", ibid., p. 65

> "[h]uman beings experience directly and immediately only needs for goods of first order – that is, for goods that can be used directly for satisfaction of their needs." (ibid., p. 80)

This is only an implication of the previous explorations that goods character is derived from the satisfaction of the need caused by the relevant good of the first order. A good of higher order is required only because it enables obtaining goods of lower orders, and finally goods of the first order causing satisfaction. Therefore

> "[i]f no requirements for [the goods of the first order] existed, none for goods of higher order could arise" (ibid., p. 80)

As goods character goes hand in hand with requirements for goods, the problem of the insufficient supply of complementary goods will be dealt in the same manner – there would be no requirement for a good of higher order as a consequence of achieving a goal for which complementary goods of higher orders are not available.

As it was said, our world is a world of quantities and every requirement is necessarily faced with an available amount of definite goods. In the case that a man's requirements are higher than the available quantity of a definite good, the fact of scarcity is inevitably faced and economizing activities are necessarily put under way[11]. Such goods are then economic goods. Our previous investigations imply that the economic character of a good is not inherent in a given good (ibid., p. 101) and that the economic good character of higher order goods is derived from the economic character of lower order goods – and ultimately from the satisfied needs (ibid., p. 107).

## *Value*

Not only the process of economizing is the consequence of the shortage of available quantities compared to humans' requirements that is put under way. Also the "…significance … of each concrete unit" comes into consideration. This significance represents value. In other words:

> "Value is … the importance that individual goods attain for us because we are conscious of being dependent on command of them for the satisfaction of our needs." (ibid., p. 115)[12]

Menger also holds with previous chapters and restates that

> "[t]he value of goods arises from their relationship to our needs, and is not inherent in the goods themselves. With *changes in this relationship*, value arises and disappears." (emphasis in the original) (ibid., p.120)

The nature of value leads Menger to the conclusion that

> "[o]bjectification of the value of goods, which is entirely *subjective* in nature has nevertheless contributed very greatly to confusion about the basic principles of our science." (emphasis in the original) (ibid., p. 121)

Nevertheless, the definition of value as an "importance" is not a real definition at all; it is rather a cyclical statement and word play, not an explanation of phenomenon. This imposes a

[11] These, according to Menger, involve – maintaining every unit of the good at disposal, conserving its useful properties, making a choice between concurrent needs and directing given quantities of goods into the most sufficient manner. ibid., pp. 95-96

[12] On p. 121, a different definition is given to us: Value is a "judgment made by economizing individuals about the importance their command of the things has for the maintenance of their lives and well-being"

strong incentive for using additional tools as a background of exposition. Therefore "magnitudes" measuring values are often brought into the picture[13]. This will be crucial for the development of at least the next two generations of the Austrian school.

In the context of the previous exposition, the concept of value is explained as well as its relation to needs and satisfaction – value is imputed to goods according to the importance of the satisfactions they provide[14]. Value is therefore a kind of mirrored information. On this cornerstone the law, nowadays known as "the law of decreasing marginal utility", is developed: different satisfactions of concrete needs have "different degrees of importance" for us (ibid., p. 139). These different degrees of satisfactions are consequently imputed into goods as their value, which represents the "degree of importance that the satisfactions dependent on the goods in question have for us" (ibid., p. 139). In the disposition with part of the available quantity of some homogeneous good only the last important possible satisfaction falls under question. Therefore also the value of this good is equal to the importance of the last important satisfaction.

After the solution of the problem with goods generally, the theory is applied for the case of the value of higher order goods. First, the cost-theory of value is attacked, because

> "[i]t does not explain the value of goods directly provided by nature… [f]or the value of all these goods cannot be explained by the argument that goods derive their value from the value of the goods expended in their production." (ibid., p. 149)

> "On the contrary, it is evident that the value of goods of higher order is always and without exception determined by the prospective value of the goods of lower order in whose production they serve. The existence of our *requirements* for goods of higher order is dependent upon the goods they serve to produce having expected economic character … and hence expected *value*" (emphasis in the original) (ibid., p. 150)[15]

Now, two related problems are to be solved – first, the value of the complementary quantities of goods of higher order and then the value of the definite units of these quantities.

> "The aggregate value of all complementary quantities of goods of higher order ... necessary for the production of a good of lower order is equal to the prospective value of the product." (ibid., p. 161)

The value of the whole group of complementary goods will be equal to the dependent result – to the value of the product dependent on their cooperation. The principle is the same as in the case of consumption goods – value is derived from the satisfaction in question. It is of great importance to stress here Menger's point on the equality of the value of production factors and their respective products, because this mark stigmatizes the development of Austrian economics in some aspects also nowadays.

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[13] See clear examples ibid., p. 121 or p. 152, or value calculus of interest on p. 158

[14] "... it has been established that in the final analysis only the satisfaction of our needs has importance to us [and therefore] the value of all goods is merely an imputation of this importance to economic goods...", ibid., p. 122. In the original text, the sentence sounds: „Die Bedeutung die Gütter für uns haben, und welche wir werth nennen, ist lediglich eine übertregene." Carl Menger, Grundsätze der Volkswirtschaftslehre in Carl Menger, Gesammelte Werke (Tübingen, J. C. B. Mohr (Paul Siebeck),1968), p. 107 The verb „übertragen" and noun „Übertragung", which appears in the other part of the book (Menger (1968), p. 107 resp. Menger (1994), p. 139), were later translated as "to impute" and "imputation". However, we know that Wieser coined the term "Zurechnung" – "imputation". And this happened only after publication of the Principles in his Ursprung (Friedrich von Wieser, Ursprung und hauptgesetze des wirtschaftlichen Wertes (1884)). We see something that could be called "intertemporal circulation of the word" – German word was linked with the English word that was as a consequence linked with another German word of completely different meaning and used before. And the difference is really considerable – "Zurechnung" could be translated as "counting to" but "Übertragung" means "transformation". This difference is not only one of terminological quibbling, it anticipates a very long and passionate debate over the real content of imputation.

[15] See also ibid., pp. 151-152

The case of individual goods of higher order is solved on the same basis. As we know that the value of the good is governed by the dependent satisfaction and

> "[a]ssuming in each instance that all available goods of higher order are employed in the most economic fashion, the value of a concrete quantity of a good of higher order is equal to the difference in importance between the satisfactions that can be attained when we have command of the given quantity of the good of higher order whose value we wish to determine and the satisfactions that would be attained if we did not have this quantity at our command." (ibid., p. 165)

Or in other words, the value of a factor of production is equal to the value of the good dependent on its presence in the production process. This value is finally imputed from the satisfaction of the consumption good that is at the end of the long causal chain in question.

We could see progressive steps in Menger's argument for the value of goods of higher order: They possess goods-character because they finally lead toward satisfaction. They are required because respective goods of the first order are required. They possess economic character as far as requirements for respective goods of lower orders are not fully satisfied. And finally, they are valued because there is a dependent satisfaction (value) of the goods of the first order obtainable by them and consequently imputed to them.

### *Menger's Lesson*

There are four points of great importance in Menger's reasoning related with our inquiry:

First, it is satisfaction that stands behind requirements and together with supply imputes value to consumption goods and indirectly to production goods.

Second, more or less direct causality creates orders of goods and is the criterion for this classification.

Third, value is derived through the process of equation to the goods in question.

Fourth, the value of all goods is established on the dynamic criterion of potential loss/gain in satisfaction.

## 4 Eugen von Böhm-Bawerk

Böhm-Bawerk's systemized point of view was brought to light in the work Grundzüge der Theorie des wirtschaftlichen Güterwertes[16], most of which was basis for Book III of his Positive Theory of Capital[17]. The latter will be the main source of our investigations.

### *Value and Cardinal Utility*

It is from their definition that all goods "…possess *capacity* to promote well being…" (emphasis in the original) (Böhm-Bawerk (1951)b, p. 127) However; they are valuable only in the case where they represent the "indispensable *condition*" (emphasis in the original) (ibid., p. 127) of satisfying needs. Only after fulfilling conditions of usefulness and scarcity could something be claimed as valuable. Value is therefore

> "*…that significance, which a good or a complex of goods acquires as the recognized condition of a usefulness which could not otherwise be contributed toward the well-being of individual*."(emphasis in the original) (ibid., p. 129)

[16] Eugen Ritter von Böhm-Bawerk, Grundzüge der Theorie des wirtschaftlichen Güterwertes, Jahrbücher für Nationalökonomie und Statistik, Jena, Verlag von Gustav Fisher, 1886

[17] Eugen Ritter von Böhm-Bawerk, Positive Theory of Capital, (South Holland, Libertarian Press, 1959). On relation of his Grundzüge and Book III, see his note of Book III, p. 421. Due to the fact, that Grundzüge have not been translated into English so far, our investigation will be based by and large on the text in Positive Theory of Capital.

Not considering the change in terminology, this definition is in agreement with Menger's, or as it was stated in another place, it regards value as "… a *bilateral* relationship involving one individual and one economic good"[18] (emphasis in the original), or as we have stated, value is defined here in cyclical definition as importance, significance, etc…

The problem of economic and free goods is solved very simply on the basis of value – in the case of goods that do not possess value, there is no need for economizing. On the other hand, the value of a good is always connected with economizing because scarcity always presupposes unsatisfied needs[19] [20].

The next logical step in the inquiry is an exploration of the laws governing value, or in Mengerian words – what determines the "magnitude"[21] of value?

> "If value is the significance of goods for human being, and if this significance is based on the fact that some gain in well-being is dependent upon the disposition of these goods, then it is clear that the magnitude of value must be determined by the gain in well-being that depends on the good in question." (Böhm-Bawerk (1959)a p. 135)

And which "part" of well-being should be taken into consideration? The answer is that fraction of the stock of the commodity in question which represents in our decisions the satisfaction of the last important relevant covered need[22]. Or more easily "*The value of a good is determined by the magnitude of its marginal utility*." (emphasis in the original) (ibid., p. 143)

It is important to stress here Böhm-Bawerk's tendency, probably built on Menger's ambiguous terminology in connection with this topic, to talk about value as a measurable magnitude[23]. Cardinal utility is regarded as a consistent part of the exposition. These practices however, do not apply only as a useful mental tool of exposition. It is claimed that "…we at least *undertake* to form numerically determined judgments on the magnitudes of pleasures."(emphasis in the original) (ibid., p. 198) [24] [25]. This was also the reason of Böhm's dispute with Čuhel[26], who was later supported by Mises[27].

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[18] Jörg Guido Hülsmann, Introduction to the Third Edition: From Value to Praxeology, in Ludwig von Mises, Epistemological Problems of Economics, (Auburn, Ludwig von Mises Institute, 2003) p. xxxvi

[19] Böhm-Bawerk does not make his reader on this place sure what "economizing" really means but we implicitly presuppose Menger's approach.

[20] "All economic goods have value, all free goods are valueless." ibid., p. 130

[21] The reader could see that Menger's habit of speaking about "magnitudes of value" is preserved and in the case of Böhm-Bawerk even strengthened, since he uses real cardinal utilities in order to express values and interpersonal comparisons (see later in the text).

[22] "The magnitude of the value of a good is [therefore] determined by the importance of that concrete want or partial want which has the lowest degree of urgency among the wants that can be covered by the available supply of goods of the same kind." ibid., pp. 142 - 143

[23] Grundzüge p. 69 – 75 of the Czech translation: Eugen von Böhm-Bawerk, Základy teorie hospodářské hodnoty statků, (Praha, Academia, 1990), and on the other place in Böhm-Bawerk (1959)a, pp. 196-201

[24] Böhm-Bawerk (1959)a, p. 198-199 makes an example of barter, where seven plums is not enough for purchasing of an apple, eight plums are sufficient. He concludes that therefore "...enjoyment of eating one apple is more than seven times but less than eight times as great as the enjoyment of eating one plum..." This strongly heterogeneous point of view, compared to the rest of the work, presented in 1886, was probably influenced by work of Wieser (1884). Wieser, as it will be shown later, holds the opinion that the value of every unit of the good in supply is equal to the marginal value. This is of course in strict confrontation with the Mengerian dynamic approach, where every value has recourse to concrete actions.

[25] Also interpersonal comparisons of utility are approved, especially in discussing the topic of rich-poor redistribution. Grundzüge (1990), p. 64, Böhm-Bawerk (1959)a, p. 150 This undoubtedly constituted the theoretical background for justification of his progressive-tax reform.

[26] For debate see Franz Čuhel, "On the Theory of needs", (pp. 305-337) and Eugen von Böhm-Bawerk, "On the 'Measurability' of Sensations", (pp. 339-355) in: Israel M. Kirzner ed., Classics in Austrian Economics, (London, William Pickering, 1994) vol. 1

[27] See Mises' critique of Böhm-Bawerk in Ludwig von Mises, The Theory of Money and Credit, (Indianapolis, Libertarian Press, 1980b), pp. 54-55

## *Horizontal and vertical dimensions of higher order goods valuation*

Now, problems concerning the value of higher order goods are to be solved. Although not using this terminology, Böhm-Bawerk tackles the problem by using a combination of vertical and horizontal analysis.

The vertical approach solves the valuation of whole groups of complementary goods: it is shown how value transcends from lower to the higher order goods:

> "*The value of the entire group is as a rule governed by the marginal utility which it is capable of affording through its united functioning.*" (emphases in the original) (ibid., p. 161)

Following the Mengerian approach, the value of the goods of higher order is derived from their causal connection with dependent satisfaction, i.e. marginal utility. Such a group is therefore valued equally with the value of the respective product given up in case of their loss (ibid., 169-170).

However, there is added an exception. This is the result of the fact of relative nonspecificity of the goods – i.e. capability of physically different goods to be employed in the same use, and capability of same goods to be employed in different uses. There might be cases when utility is determined not only inside their own category. When substitution from other – lower-utility – uses of these complements is possible, the use in question has no effect upon the value of the goods in question. Value is in this case governed by the utility of substitutable uses. And this is core of the horizontal approach.

The horizontal approach is applied in order to explore the valuation of definite complements[28]. Presupposition of knowledge derived from the vertical relations with certain algorithms of "shifting" goods between the productions with certain nonspecificity and substitutability, enables us to formulate valuation rules of concrete complements. Böhm-Bawerk observes three basic rules here[29]:

First, in the case that no member of the group has any other use and could not be replaced, the marginal utility of the good in question will be always the utility of the whole complement. Imagine goods A and B that give in common use utility *U*. Neither of them has any other use nor is there a substitute for them. In the case of giving up one of them, loss of *U* will be inevitable.

The second eventuality presupposes that "the individual members of the group are capable of affording utility outside of the combined activity, though utility of lower rank." (Böhm-Bawerk (1959)a, p. 162) The value of the good in question will therefore vary between two borders. The lower is represented by its value in an alternative use. The higher is the result of deducting the value of the whole complement by the values of the other cooperating goods in their alternative uses[30]. In Böhm-Bawerk's cardinalist eyes, the case is very easy: Imagine that in our previous example A possesses also an opportunity with utility labeled *V*

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[28] It is very interesting, that whereas Menger, at least implicitly, assumes that the question of complementarity is always related with the goods of higher orders, Bohm-Bawerk has a different opinion – his sentence "... characteristic of complementarism is a feature of a particularly large number of production goods, if not, indeed, of almost all of them." makes an impression that there are also consumption goods with characteristic of complementarity and also produciton goods without it. Compare ibid., p. 161.

[29] Klaus H. Hennings in his The Austrian Theory of Value and Capital, (Cheltenham, Brokfield, Edward Elgar, 1997) presents following summary of these rules:

"1. When the input to be evaluated is irreplacable, and the other related inputs cannot be used in alternative uses, then the presence of this particular input makes all the difference; it is therefore credited with the whole value of the combination.

2. When the input to be evaluated is irreplacable, but the other related inputs can be used in alternative uses, then it is credited with the difference between the whole value of the combination and whatever the other inputs are evaluated at in their alternative uses.

3. When the input to be evaluated is replacable, it is evaluated at whatever one has to pay for its substitute." p. 96

(20) and B in an alternative use yields *Z* (30). *V* and *Z* gained together are less preferred compared to *U* (60). A will be therefore valued somewhere between 20 (use without cooperation) and 30 (net gain after deducing minimal gain of B).

Third, and according to Böhm-Bawerk, the most frequent possibility concerns the situation where "[i]ndividual members of the group are not only adaptable for employment for other purposes but at the same time they are *replaceable* by the other specimens of their same kind." (emphasis in the original) (ibid., p. 163) These goods "can never attain anything higher than … the value derived from the loss in utility that arises in those branches of employment from which the replacements are drawn."(ibid., p. 163) In our case, if B is replaceable from the use Z, it will never attain higher utility compared to use Z[31].

Böhm-Bawerk's muddle is the question of what he is really counting – utility, prices, or both is easily seen in the end of this exposition, where he simply skips from the "utility economy" to examples with monetary prices (ibid., p. 167). This only shows the highly confusive role of presented cardinal theory and the fruits of Carl Menger's vicious definition seed.

## *The Law of costs*

The law of costs represents the peak and summary of Böhm-Bawerk's contribution in the field concerning the theory of imputation. It is also the subject of his scholarly debates with Marshall, Dietzel[32] and others. Its main idea is the incorporation of costs, as a value-causing element, into Austrian economic theory. Böhm-Bawerk, using the presented vertical-horizontal analysis, accepts costs as a cause of value, but he simultaneously shows that this is only the first part of the story. Costs are only a communicative bridge between the different potential uses of the same good.

As it has already been shown, the difference between production and consumption goods is that the former serves our wants only in an indirect causal relation. "[I]*ts value will be* [accordingly] *high when the dependent satisfaction of want is important and low when it is unimportant*"[33]. This is derived from knowledge that if we lose the corresponding group of production factors, we will, through the causal chain, lose also the corresponding consumer good and satisfaction related with it. Böhm-Bawerk's conclusion is therefore, that the value of the factors of production is equal to the potentially lost product[34]. We have dealt with this problem in the previous section where we have found out that

> "[t]here might be cases when utility is determined not only inside … own category [of goods]. When substitution from other – lower-utility uses of these complements is possible, complementary use has no effect upon value of goods. Value is in this case governed by utility of substitutable uses."

Here, the law of costs is to be formulated – it is, that every factor of production could serve a different need with a different utility and therefore the value of the factor of production in

[30] "That value will fall within the range marked by the marginal utility it is capable of affording when isolated, as a minimum, and the combined marginal utility minus the isolated marginal utilities of the other members, as a maximum." Böhm-Bawerk (1959)a, p. 162

[31] The rule is formulated in the following way: "The integral value of the whole group is first determined according to the marginal utility of the combined utilization. Of that integral value the fixed or "substitution value" is assigned to each replaceable member and the remainder, which varies in accordance with the magnitude of the marginal utility of the whole, is assigned to the irreplaceable member or members as an individual value" ibid., p. 165

[32] See Eugen von Bohm-Bawerk, Value, Cost, and Marginal Utility ,The Quarterly Journal Of Austrian Economics Vol. 5, No. 3 (Fall 2002), pp. 37–79

[33] ibid., p. 169

[34] "Where a group of means of production belonging to a higher order successively passes on into the next lower orders, the same gain in well-being is dependent on it throughout, namely the marginal utility of its end product." ibid., p. 170

question is considered only to the height of the lowest provided utility[35]. This lowest valued use of factor represents also the costs of every use of this factor. It is the constraint on our projects and therefore the "value creator". But it should be kept in mind that these costs always have their root in a subjective phenomenon.

### *Extended Lesson in Mengerian Spirit*

Böhm-Bawerk's work on this field followed fully in the direction ascertained by Menger, with all its positives and negatives. The development could be comprehended in the following remarks:

Value is still regarded as a dynamic phenomenon. Its root still stands on Mengerian "dependent satisfaction" recoined into "marginal utility". Utility is, here, an entity of its own and Menger's touches of cardinalism are harshly exaggerated. This point of view is also very supportive of the notion of value equation between goods of different mutually dependent orders of the same production.

Orders of goods are still based on causality. Uncertainty, whether the problem of the complementarity of goods only coincides with its orders or not, is even more clear in comparison with Menger.

These points constitute the intellectual basis for vertical-horizontal analysis and the development of Menger's solution of higher order goods valuation.

## 5 Friedrich von Wieser – traitor of tradition

Friedrich von Wieser is undisputedly one of the most perplexing persons among the Austrian economists. One may often wonder why he should be counted among Austrians at all[36]. However, such contemplation is not the aim of our investigation. Wieser was at least acclaimed by his contemporaries. His ideas also formed and confused the third- and fourth-generations of the Austrian school and were the cause of strong criticism of Menger-Böhm's approach. These facts are sufficient reason for further investigation.

Wieser's first more complex presentation of ideas took place in his habilitation Ursprung und Hauptgesetze des wirtschaftlichen Wertes that was published in 1884. Our discussion will be based by and large on a more mature work – Der Natürliche Werth[37] (1888). In understanding Wieser, it is very important to recognize his ultimate aim:

> "Wieser sought to use the new value theory of Carl Menger as a key component in an argument for the possibility of economic calculation in a socialist or communist system."[38]

With this idea in mind, he built his respective theory of value and on its grounds developed a theory of imputation that "proved" the possibility of socialist calculation. This desperate attempt was not very blissful in combination with his already highly confusive and

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[35] "The value of a unit of means of production is governed by the marginal utility and the value of that product which has the least marginal utility among all those products for the making of which the unit means of production could have justifiably been used.", ibid., p. 174

[36] And it seems that also Mises distinguishes between himself and and his school from Wieser and Wieser's school: „Dass Wieser, weil er die Gleichungen nicht in mathematischen Symbolen formuliert, zu den nichtmathematischen Nationalökonomen gerechnet wird, betriff nur das Gewand, in dem er seine Lehre vorträgt; in der Sache bestelt zwischen ihm und *seiner Schule* einerseits und den mathematischen Nationalökonomen anderseits kein Unterschied." (emphasses added) in Ludwig von Mises, Nationalökonomie, (München, Philosophia Verlag, 1980a), p. 316

[37] Friedrich von Wieser, Natural Value, (New York, Kelley & Millman, 1956)

[38] Samuel Bostaph, Wieser on Economic Calculation under Socialsm, The Quarterly Journal of Austrian Economics, Volume 6, no. 2 (Summer 2003) p. 3-34

terminologically unclear style of exposition. However, this is not the place for a complex attack of the Wieserian system[39].

## *Value and utility – the new direction*

Wieser's system is grounded in the "Want" that represents the counterpart to "Need" in the Mengerian framework[40]. In formal definitions of value, goods, and distinctions between economic and free goods, he follows Menger too (Wieser (1956), pp. 20-21).

"Want signifies every human desire…" (ibid., p. 6) Therefore "all the "use of goods" – all the utility which goods afford – amounts in the last resort to satisfaction of wants…which they furnish…" (ibid., p. 6) And because utility is the resultant of Want then also "[t]he value of goods is derived from the value of wants" (ibid., p. 7).

Then Gossen's law of the satiation of want is presented to make a case for a law of diminishing marginal utility: It applies to the "separate sensations of the want", which is "narrowly limited both in point of time and in point of matter". Then

> "[w]ithin any single period of want every additional act of satisfaction will be estimated less highly than a preceding one obtained from a quantity of goods equal in kind and amount."(ibid., p. 9)

This simply means that within a narrowly enough formulated want, our psychological satisfaction decreases as the quantity of the relevant good increases.

The reader has probably already gained the impression that there are some difficulties in the relation of value and utility. According to Wieser, these two categories are really different. In the Wieserian system "[t]he value of commodities is derived wholly from their utility, but the utility they afford is not wholly convertible into value."[41] This difference is very important in understanding Wieser's later point on imputation. "[U]tility…" as we have seen "…amounts … to satisfaction". It is the subject of the law of decreasing marginal utility – higher quantity of the good causes lower marginal utility of this good. Value is a derivative of utility.

> "The value … is reckoned by multiplying supply … by the marginal utility. All the utility above the margin, all 'surplus utility' (Übernutzen) … is neglected and finds no place in value at all." (Wieser (1896), p.2)

It could therefore happen that value reflects all the utility but much more often happens that utility is not fully reflected. An example of the former case is the consideration of a single isolated good or a whole supply of some good (Wieser (1956), pp. 22-23). The latter example happens when goods of the same class are valued independently. An illustration concerning one's decision about the value of two pieces of bread is given:

> "He may give away one of them – whichever he likes, so long as he keeps the other … But if either of the two pieces is equal in value to the second degree of utility, both together have twice this value." (Wieser (1956), p. 25)

Wieser does not use value scales, but utility scales. He uses the term "degree" to rank different wants on the scale of utility (Wieser (1956), p. 24). This word might possess ordinal as well as cardinal content and in the beginning one could have the impression that the former

[39] For this purpose see Samuel Bostaph (2003)

[40] The cause of this Need – Want difference is only caused by the incoherent English translations of Principles and Natural Value, in German, the word is the same one – „Bedürfnisse". Compare Fridrich von Wieser, Der Natürliche Werth, (Frankfurt a. M., Verlag Sauer & Auvermann, 1968), p. 20 and Carl Manger (1968), p. 78

[41] Friedrich von Wieser, The Austrian School and the Theory of Value, The Economic Journal, (march 1891), volume 1, p. 1. of the article

is true[42]. Such a feeling, however, the reader loses very soon when the quantity of a harvest is multiplied with its marginal utility (Wieser (1956), p. 25).

And now, *coup de théŕtre* of this part comes[43]:

> "We have here reached a decisive point in our explanation. Experience shows us daily that similar goods obtain similar prices; and the majority of theorists . . . are agreed that these prices are fixed by a marginal law. In this is involved that exchange value, which rests on prices, is the same for all similar goods, and obeys a marginal law. We, however, have gone still further, and say that Value generally and in every form, even in that of use, and even where there is no exchange—as e.g. in a community organised on a socialist basis— must be the same for all similar goods, and must obey a marginal law. . . .
>
> If a socialist community were to give up exchange—the payment of buyer to seller— it would not on that account require to give up this measuring scale for the valuation of goods. It could continue to value similar goods at the same figure, and to bring them all under a marginal law. …
>
> Menger's theory of value differs essentially from its rivals on this point. He asserts that the law of equality and the marginal law refer not only to price but to value. … His view … also enables us to think out possible future of economy." (Wieser 1956, footnote pp. 26–27)

Calculation therefore represents no problem for us, because "[w]e do not calculate utilities; we calculate values. Value is the form in which utility is calculated, and this renders calculation infinitely more easy…"(ibid., p. 34) We do not have to count lots of utilities, the multiplication of marginal utility and the number of goods is sufficient[44]. But from this formulation it seems that even if we did not have value, the only problem would be a boring adding up of utilities instead of an elegant multiplication.

## *In Wieserian imputational paradigm*

> "It is impossible … to give a reply to the question as to which part of the child is derived from the father and which from the mother. The question in itself is an absurdity." (Wieser (1891), p. 2)

If there is some person in the history of economic thought linked with the word "imputation" – "Zurechnung" it is Friedrich von Wieser. He coined the term and he is also often regarded as the eminent and righteous proponent of this theory. In a reply to the motto of this section and as a definition of the subject of imputation, he states:

> "What is required in economy is, not physical division of the product amongst all its creative factors, but the practical imputation of it, imputation in the sense used by a magistrate in speaking of a legal 'charge'." (ibid., p. 2)

In the other words we are charging factors of production "…with the utility which they afford." (ibid., p. 3)

Before our exposition of Wieser's theory, there is one interesting linguistic point that should not be omitted. German noun "Zurechnung" ("zurechnen" – respective verb) is not used only in a juristic context. This word has developed from the word "rechnen" (to count) with prefix "zu" (to). The word "rechnen" is an expression for algebraic operations. The word

[42] This is also in accordance with his previous statement "If we had a common and exact measure for desire and non-desire, we might be able to put into figures the "satiation scale" of every want ... [but] ... [w]e are far from having that." In Wieser (1956), p. 11.

[43] Compare with Bostaph (2003), pp. 10-11

[44] Self-contradictive implications of this treatment of "calculation" are inescapable and are observed and treated by simply adding new rules and assumptions. It is clear that if the number of goods is increasing proportionally and utility is decreasing, there is some point from which the "value" starts to decrease, because an increase in the number of goods does not conterbalance the lost utility from all previous goods. The result is that by increasing the nuber of goods, we lose value. And this is necessarily contradictory. Wieser deals with the problem in the following way – most goods in the world are scarce enough that value really correlates with utility and if this is not the case "utility ... is the stronger consideration wherever there is a collision between it and value..." (Wieser (1956), np. 35)

"Zurechnung" could therefore also be translated as "counting to". We will very soon see that these algebraic connotations in Wieserian point of view do not seem to appear only by chance.

## *Value of the Factors of production is governed by value of their products*

Wieser opens his case with paramengerian logical deduction:

> "Production goods as well as consumption goods, afford utility. … As the latter serve directly, so do the former indirectly, toward satisfaction of wants. … And the production goods … must receive value on account of their utility, so far as they are not available in superfluity." (Wieser (1956), p. 70)

As is implied in the previous statement: "…production goods receive their value from the value of the products which they serve to create" (ibid footnote p. 71). But also in the case of production goods, the Wieserian point of view on value is retained: "[i]t is … not usual to follow the value of production goods its source in utility." (ibid., p. 70) The process of valuation is explained on the example of the field:

> "To estimate the value of a field I do not consider what satisfactions of want can be had from its crop. I content myself with calculating what and how much crop it will probably yield; this crop then I estimate according to the value which attaches to it in virtue of its utility; and this value is to me the basis from which I ascertain the value of the field."

In general – the value of a production factor is derived from the value of its products and not from its utility, because that is already represented in the value of the product. Or in the author's words:

> The act of valuation of production goods … is, therefore, usually carried only to that point at which the relation of these goods to the value of their products is established, for in the value of products the calculation of wants is already represented. To this extent it is possible to say that the value of production goods is determined by the value of their products or by the value of the return. Productive value is return-value." (ibid., p.70)

It is of great importance to stress here Wieser's point of view on the value of the factors of production. This was definitely caused by his concept of value in general. Value of the goods from the same class is the same. Consequently, he compares the value of the factors of production to "shares" in contribution to the result (ibid., p. 71). And this is not very far from ascribing the same value to the same factors in general.

## *Problem of complementarity and Menger's „fallacy"*

The problem of imputation arises from the fact, that "[n]o productive instrument, be it ever so efficient, yields a return by its unaided agency; it always requires the assistance of others." (ibid., p. 72) So far, only the general rule of transition value from lower order goods to higher order goods was formulated. But what is the algorithm of solving the problem of the division of value between more factors of production?

The only predecessor who had made "…any attempt at any exhaustive treatment of the problem…" (ibid., p. 81) is regarded to be Menger[45]. His solution, claiming that a production factor is valued equally to the value of the result of its potential loss, is considered as incorrect.

In order to explain the error the example of 3 irreplaceable goods with use in another employment is given. These three factors produce product amounting to 10 "units of value"

[45] De facto it is also Böhm-Bawerk, whose theory of complementary goods is criticized on the one page long footnote, however.

and each one has a separate use with product amounting to 3 units of value. If we apply here Menger's criterion, the value of one good is 4. The reason is that the loss of one production factor is the cause of the loss of 10 units and the gain of 6 units from other employments of the two remaining factors. If we apply here the Wieserian theory that counts value as the multiple of marginal utility and the number of goods, the value of all 3 factors of production will be 12. However, this is a contradiction because the value of goods could not be higher than the value of satisfaction that they render.

Menger's fallacy is seen in the already mentioned spirit concerning the value of the factors of production as governed on the same principle as shares and dividends. Therefore Wieser does not want to compare the difference between the best and second best solution (10 and 6 in our example). He searches for the share of the factors in the value of the used alternative. In his words:

> "The question must be put positively: What do I actually obtain from the goods as they stand at my disposal? Those productive employments which stand first,– the employments which are most desirable and would be first chosen – decide the value; not those which stand second, and would be taken up only in the exceptional case of some disturbance of the original combination."(ibid., p. 84)

Therefore the surplus plays no meaningful part in the solution of the problem, because it is a result of joint productive forces of more factors. Every factor "charge" this surplus by its contribution and we are therefore again at the beginning of the problem:

> "… [Menger's solution] is of no use when what is wanted is to calculate as well the surplus by which the first-chosen combination excels all others. This surplus is left an undivided remainder of the return, and as regards it the problem of imputation is not solved, but comes up again for solution."(ibid., pp 84-85).

The loss solution holds true only in the special case of the cooperation of the same factors that brings no economies of scale, i.e. value of x cooperating factors is same as x times value of the production of the single factor:

> "… a stock of goods of the same kind, where if … I take away one good from others, it is this one good alone and nothing else that is taken away. It does not hold in the case of a stock of heterogeneous and co-operating production goods, where if … I remove one, I deprive the others also of a portion of their effect." (ibid., p. 84)

Therefore, he later (ibid., pp. 90-91) reformulates Menger's loss criterion and his definition of value in the following way – value is a portion by which every factor of production "charges" the product ("productive contribution"). In case of the loss of one factor, not only its value is lost, but also that of the other factors ("the share dependent upon its co-operation"). The loss is therefore not only the value of the factor but also the part of the value of the other factors that is lost.

Now, it is clear that the problem of value is of a completely different manner in the Wieserian point of view. It is, as he recognizes too, the problem of distribution, or the answer to the question "What part of the product is to be received by the factor?"

However, in a page long footnote that is devoted to the refutation of Böhm-Bawerk, Wieser raises a brand new argument against Mengerian theory:

> "How is it, however, when several "unreplaceable" goods come together? … And are not many … replaceable goods often combined? The value of these, which, *practically*, can always be ascertained by referring to their secondary employment and valuation, must, *theoretically*, be first separated from combination with complementary goods,– but how can this be done unless the rules of distribution are known?" (ibid., p .86)

According to Wieser, the theory of value is the theory of distribution. Menger's solution is therefore definitely wrong because it "charges" to the marginal factor not only what belongs to it but also others' "shares". However, Wieser follows with argumentation and claims that even in the Mengerian paradigm, we are often faced with the impossibility of imputation, because there is no second employment or there is a second employment, but here the problem is again to be solved and we just shift it one level lower. This Gordian knot could be cut only by a theory of distribution and therefore also Menger's wrong solution is based implicitly on the assumption of some theory of distribution. Otherwise it could not be able to explain the fact that these problems are being practically solved every day.

## *Positive solution*

Two facts are of importance here. First, value is regarded as a result of the mutual cooperation of the factors of production. Second, some factors might serve in producing very valuable products, but simultaneously serve and could be withdrawn from production with a very trifling value-result. If we understand this, then, according to Wieser, concrete values could be put into exact figures…

> "… as soon as we collect and measure all the important circumstances of the matter; such as the amount of the products, their value, and the amount of the means of production employed at the time. " (ibid., p. 87)

… then, we are able to formulate a matrix of equations and come up with exact value numbers. For example:

> "x+ y = 100
> 2 x+ 3 z = 290
> 4 y+ 5 z = 590
> Here x = 40, y = 60, z = 70" (ibid., p. 88)

Where on the left side are the „combined factors of production" and on the right side „the value of the jointly acquired (or anticipated) returns". So finally „[t]o every element there thus falls a definite share in the total performance..." (ibid., p. 88) The only seen problem is the probability that not enough equations will be available in relation to the number of unknowns. But in our world of relatively nonspecific factors of production this happens very rarely[46].

This theory is, according to Wieser, in a two-way relationship with the marginal laws. Firstly, and indirectly, is the fact that only the *value* of products (derivate of marginal utility) is imputed to the factors of production. Secondly, and directly, is based on the fact that a factor of production derives its value in the process of equilibration from the most unimportant (marginal) employed use. (ibid., pp. 97-99)

## *Lesson of Wieserian Confusionism*

Wieser chose two Mengerian most questionable tendencies – cardinalism and the value equation of respective orders of goods, and built on them his theories of value and imputation.

The value theory of his predcessors is refused in spite of its approval in some particular cases. It just does not fit into the final aim – a value calculation commonwealth.

Value is not a dynamic phenomenon in Wieser's eyes.

For the superficial observer, this might be a case of the value of consumption goods anchored in marginal utility. This marginal utility, however, is not marginal at all – it is a

[46] It is interesting that the problem that there could be more equations than unknowns and therefore the potentiality that no solution will be found at all was not even mentioned.

momentary constant applied to every good not looking at the real circumstances of the available supply and scarcity.

In the case of production goods, the notion of dynamics disappears totally. Wieser recognizes that what really directs our choices is the utility in question, however, this theory of value is arbitrarily refused on the ground of the definition of value proposed by himself. The idea of marginality is, in spite of definitions, lost as a result of „shares" charged by respective factors.

Probably the most interesting part, which does not fully spring from the context of Wieser's work, is the refutation of Böhm-Bawerk's solution of valuation in the case of complementary goods. This also constitutes considerable port of Böhm's reply to Wieser.

# 6 Böhm-Bawerk contra wieserianism

> "Unfortunately, Wieser does not seem to have been aware that he tried to solve a problem which was different from one Menger and Böhm had attempted to solve. He certainly did not make clear to his readers, and so long and fruitless debate ensued which tried to 'reconcile' the Menger-Böhm solution with one proposed by Wieser. … Böhm's problem was not the partitioning of the returns for an output among the inputs that participated in its production, but rather 'theoretical explanation of the actual process of distribution' of which imputation was only first step … Imputation is concerned only with the derivations of producer's evaluations of, and therefore their inverse derived demand functions for, inputs. It is not bound by the limitations imposed by Wieser's postulate, the adding up criterion. This is a constraint only in the next step, in which input prices are determined form producers' inverse derived demand functions, and the supply functions for inputs…" (Hennings (1997), pp. 97-98)

In the third part of his Capital and Interest[47] Böhm-Bawerk devotes the 7th essay[48] to a defense of his approach in the theory of imputation.

It is by and large a reaction to Wieser's Natural Value and is fully in the spirit of the Klaus Henning's motto of this section. In the beginning Böhm-Bawerk states that "[t]he theory of value of complementary goods along with the theory of imputation contained in it are an indispensable … logical key for the theory of distribution." (Böhm-Bawerk (1959)b, p. 78) And he clarifies his views even more: "The *economic* problem of imputation … reveals first its significance in the *valuation* of each complementary production factor, then in the formation of their prices on the basis of which the actual distribution takes place, and finally in the *theoretical explanation of the actual process of distribution*." (emphases in the original) (Böhm-Bawerk (1959)b, pp. 79-80). That the difference is not rooted only in heterogeneous terminology and verbal quibbling is clear from the beginning of his analysis.

## *In defense of Menger*

First, attack on Mengerian solution is revisited. Example of three factors that yield 10 units of value together with 12 imputed units in Menger's solution is contemplated. The question is what is the cause of such a result of Wieser's example. Is it Wieser's or Menger's fallacy? And Böhm-Bawerk recognizes this as a fallacy of former. Root of the problem is seen in the Wieserian definition of value, where "[t]he value of a supply equals the product of the number of goods and the corresponding marginal utility." And this " … is fallacious because with "several goods together" we do not secure the same utility a number of times, but several different want gratifications which usually differ in importance."(Böhm-Bawerk (1959)b, p. 80) He shows, that Wieser is aware of this phenomenon in another place of his Natural Value, where he deals with the closed supply of some good. Then all utilities are in the question and are also counted in the value. And the problem is that

[47] Eugen Ritter von Böhm-Bawerk, Further Essays on Capital and Interest (South Holland, Libertarian Press, 1959).

[48] "On the Theory of Value of Complementary Goods and the Theory of Imputation" ibid., pp. 78-96

> "Wieser raises no objections in this case; but he objects against the same principle applied to complementary goods. As in the case of "closed supply" and for this very reason, the true joint value of complementary group may not coincide with the alternative value total of its parts."(Böhm-Bawerk (1959)b, p. 83)

The exposition is made clear on analysis of Wieser's example:

> "…[W]hat is really not permissible is the cumulative valuation of 4 for each of the 3 goods … Menger and I ascribed a joint value of 10 and to each of the 3 goods … we "simultaneously" but "alternatively" ascribe the individual value of 4. … [T]his value is ascribed to each unit only because and insofar as we value it as the "last unit" of a group whose absence would dissolve it and whose presence completes it. Now this role can never be played cumulatively by all factors, but always only by one – any one – alternatively. ."(Böhm-Bawerk (1959)b, p. 83)

And this is completely reasonable also on the market. No owner of 3 production factors would sell one of them with income less then 4. According to Wieser, however, the price resulting in the satisfaction more than 3 and 1/3 (3 factors = 10 value, therefore one factor = 10/3 value). Such a valuation is "… harmless only as long as it stays "unreal" and "platonic"."(ibid., p. 84)

Wieser claims that value is based on the possession of the good and not on the difference between first and second best uses. Böhm-Bawerk replies that the loss criterion is as well the gain criterion – value could be as well understood as the gain by the use in the first best alternative, or in another words:

> "What must be foregone in case of the loss of a good is always and necessarily identical with that which is attained by its possession. They merely are two different forms of poerception and illustration for one and the same thing."(ibid., p. 85)

The last and deadly kick to Wieser's theory of value is a result of the attack on the constructions of the concepts of "productive contribution", which represents in Wieser's eyes value and "share dependent on cooperation" which is value of final product dependent on the loss of the factor (i.e. Menger's concept of value). If Wieser claims that former is value instead of later, he "… abandon[s] basically the thesis that the value of a good is determined by the rank of utility dependent on it …" (ibid., p. 86). In the other words, he is not marginal utility theorist any more.

The reason for Wieser's fallacy seen by Böhm-Bawerk, an inappropriate distinction between "imputation" and "distribution", may be caused to some extent by the similar respective German terms "Zurechnung" and "Zuteilung". Wieser

> "[a]s matter of fact, … regards imputation as a true, though contemplative, "distribution"… Of course, we can distribute the same return only once which accounts for the fact that all the shares of distribution together constitute the total return, no more and no less. … But our value-establishing judgments and conclusions that a certain quota of return could not have been attained without the cooperation of a certain complementary factor and that it is "owed" to this factor may well overlap. The same quota can be "owed" and imputed to several factors. The prices of production factors are derived from our subjective valuations only by way of a secondary process… [T]he actual distributive shares are determined only on the consecutive second stage as the resultant of our subjective valuations determined by our imputations. " (ibid., pp. 88-89)

## *Out from the Vicious Circle?*

The second group of Wieser's criticisms is aimed directly at Böhm-Bawerk's theory of complementary goods valuation.

The first objection was concerned with the fungibility of goods – how would we ascribe value in the case that only specific factors are employed in the production of some product? And the reply is that it is of no problem here, because every factor in question will receive the full value of the product.

The second objection is concerning the problem of vicious determination, where value of the complementary factor is determined outside the production in question as a member of another group of production goods. The issue is – what about factors of production that are only in groups with the same problem? Then, the difficulty of value determination is only shifted to another group, but the same problem is to be answered again and only the same sort of cure is to be offered. Böhm-Bawerk explains that the problem has a solution and "…merely ends at "data" whose further explanation does not lie within the realm of economic theory."

His case is explained by an example (ibid., pp. 92-93) – suppose three goods A, B and C render joint utility 10 and another three goods A, D and E rendering joint utility 8. Imagine that a competitive employment of D and E renders 4.5 utility and competitive employments of A, B and C renders 3 for each. How much utility will be imputed to A if we have these two triads of goods? There, of course, is no problem to find out that A will be imputed utility between 3 and 3.5, according to the situation: if isolated good A is in question, its loss is worth 3, on the other hand if A is in question as member of one of the given groups (ABC or ADE), loss of one unit of A could be shifted to the group ADE, where the loss is worth of 3.5.

In other words, Böhm-Bawerk always presupposes in the solution of the value of complementary goods some alternative with attributable value as a result of the variability of the factor of production. If this was not true and only some static list of possible productions as ABC yields 10, BEF yields 9 and CHG yields 78, no value would be imputable. Or as Böhm-Bawerk states on background of his rules I, II, and III for imputation:

> "…[Wieser's] error [is] that in my case I., which deals with several irreplaceable units, a definite imputation and valuation is believed to be impossible and that we are confronted by an equation with two unknown quantities. If case I is actually incapable of solution, then indeed so are cases II and III. For …[they] also contain the problem of case I, only to a quantitively lesser degree." (ibid., p. 94)

### *Lesson of Internal Fight*

Böhm-Bawerk proved on the field of his cardinal marginalist-apparatus Wieser's heretism in relation with marginalist tradition. He consequently put into serious doubt the relation of the whole Wieserian apparatus with real-world phenomenon. What use is a theory concerning human action that does not reflect its basic principles?

The second interesting result of this debate is Böhm's refutation of Wieser's vicious-circle argument. His replies, that nonspecificity of the factor is insufficient for valuation of this factor. Some isolable use is needed, too – an observable change in the product as a result of the variation of the factor in some of its uses.

## 7 Conclusion

Analysis of the discussions within the first two generations of the Austrian school of economics constitutes an inevitable cornerstone of every further inquiry on the fields of the theory of value and imputation theory. Only with knowledge of Menger's, Wieser's and Böhm-Bawerk's understanding of cardinalism and problems related with utility, value and their interdependence, we are apt to understand correctness or incorrectness of their positions and also positions of their followers.

Thus, we could trace back cardinalist notions of utility seeded by Menger and understand later Mises'-Čuhel reformulation of the whole value theory into an ordinalistic one. Mises fully escaped the Mengerian tradition in this point and also transformed the whole theory of imputation into the theory of pricing of the factors of production. The only exception, from the point of view of imputation theory of highest importance, is his insistence

on the value equation of means and ends that confused his successors and was investigated only recently[49].

Within the context of present state of value and imputation theories, two related problems arise: "What constitutes theory of imputation, theory of value and valuation of the factors of production, today?" and "Is Menger-Böhm-Bawerkian solution of imputation theory really suitable for the explanation of the pricing process and isn't Wieser's objection of circularity of the imputation theory applied in price-creation justified?" These are the questions that are badly needed to be answered in order to clarify the theory in the field.

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