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# WEBERIAN PERSPECTIVE ON VALUE JUDGEMENTS IN ECONOMIC MODELS – AN APPLICATION TO METHODOLOGICAL VALUE JUDGEMENTS CONTAINED IN THE AUSTRIAN BUSINESS CYCLE THEORY AND THE REAL BUSINESS CYCLE THEORY[1]

## ABSTRACT

The paper aims to apply a simple "model of a model", presented in detail in a companion paper, which draws on Max Weber's discussion of values in social sciences. The argument in that paper was that to compare economic models in a thorough way, one should include in such comparisons value judgements expressed or assumed in these models. So, our "model of a model" should include these judgements, which is not common in the literature on economic modeling. The value judgements can be roughly divided into methodological and evaluative judgements, the latter concerning desirable policies, ethical issues, etc. In this paper the focus is on the former. Therefore, a case study is presented to show how some differences between the models in the Austrian Business Cycle Theory and the Real Business Cycle theory can be traced to the methodological

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value judgements embedded in those models. These include the differing understanding of what the science of economics should look like, and choices between realisticness and simplicity. Some comments are also provided about the evaluative judgements in economic models.

**Keywords:** Max Weber, Austrian Business Cycle Theory, Real Business Cycle Theory, methodological value judgements, evaluative value judgements, economic modeling.

**JEL codes:** B41, B53

# 1. INTRODUCTION

In a companion paper (Mróz forthcoming), summarized here in section 2, I argued that the literature on economic modeling should incorporate topics from the literature on value judgements in economics. As the first step towards the realization of this goal, I proposed a simple framework that could be used to appraise economic models, including their normative components.

Its starting point was a classic take on the role of values in social sciences, i.e. Max Weber's (1904/1949, 1895/1980) understanding of what it means for social sciences to be objective. Weber thought that even though economics is never truly value-free, this does not mean it is not objective as long as aims, interests, and values of a given researcher are clearly articulated. Another building block of the above-mentioned theory is the observation that modern economics is a model-based science (cf. Morgan, 2012). It means that, if there is a need to be able to identify values and political ends in economic research, then this need arises for modeling in particular. One of the well-known accounts of economic models, by Uskali Mäki (2009, 2011, 2013), was then built upon to formulate the amended account of models as used by economists. Mäki's "model of a model" goes beyond standard realist descriptions of models as tools for representing some parts of the world. It includes a modeler using the model for a particular purpose, and an audience the model is addressed to. But if value judgements are to be included, then even more detail needs to be added to the description of the modeling agent. It was shown that Weber's account is well suited to become the basis of such endeavor. The conclusion was that the advocated view provided a fuller account of economic models as it allowed to understand some differences between particular models as resulting from differing methodological or ethical value judgements, and not only, e.g., from their purposes or intended audiences.

Having formulated this general proposition, what remains to be done is to show how it works in practice. A short outline of such a practical application was presented in the companion paper. Research on business cycles in Austrian tradition was juxtaposed with studies in the Real Business Cycles tradition. However, given that the purpose of that paper was just to introduce the pro-

posed approach, it was left for the current text to delve into details on particular examples. The main part of the current paper is, therefore, devoted to a detailed analysis and comparison of the canonical models in the Austrian Business Cycle Theory (ABCT) and in the Real Business Cycle (RBC) theory. These two traditions are chosen on purpose, as they share a lot in terms of normative outlook on free markets and state intervention in the economy. The normative recommendations that are built on the basis of these models are similar, and they point to the conclusion that activist policy in the face of business cycles is undesirable. This common normative ground between the schools allows me to downplay any differences that arise between them when it comes to evaluative value judgements (which concern desirable policies, ethical issues, etc.), and instead bring to light differences in methodological value judgements.

Standard discussion about value-free economics is concerned with evaluative judgements, and this is also what Weber had in mind when he said that social scientists should be open about their values. It is not surprising that the debate centers on this issue as it is directly connected to the involvement of economists and their models in constructing economic policies of countries. Some topics, such as income and wealth inequality, are so widely discussed today that it is certainly desirable (a value judgement itself!) to bring to light the normative assumptions held by economic researchers. But it does not mean that methodological value judgements are unproblematic and the discussion about them should be discarded. As will be presented in the course of this paper, many methodological choices are not purely fact-based, and are not only driven by the attempt to build models that are good representations of the world. This then impacts the way these models are built, including the complexity of their explanatory mechanisms and the way their description (the language used to present them) looks like. Nonetheless, a short discussion of evaluative value judgements in economic modeling will also be provided, partly to highlight some difficulties in applying my framework to uncovering such judgements in economic models. One hopes these difficulties will be overcome in the future and a full-fledged case study will be presented that will do the opposite to the case study presented here – downplay the methodological differences, highlight the evaluative differences between the models.

Given the above, the paper proceeds as follows. Section 2 briefly recounts the theory (the "model of a model"), and the justification for it, proposed in the companion paper. It also recalls the distinctions between various types of value judgements. Section 3 shortly presents canonical models in the ABCT and the RBC theory. Section 4, then, discusses different aspects of Austrian and RBC models, with the focus on methodological value judgements separating the two. It is intended to show why certain differences between particular models cannot be explained by standard components of philosophical accounts of economic models. Section 5 comments on evaluative value judgements in economic models. Conclusions follow.

## 2. THE MODEL OF A MODEL

It is a famous Weberian stance that statements of fact are one thing and statements of value are another, and one should not confuse them in scientific research. This idea draws a strong contrast between the two, which runs counter to the newer developments in philosophy (Putnam, 2004; Putnam & Walsh, eds., 2011). For our purposes it is not necessary to adhere to such a strong version of the fact-value distinction, especially given that it is rather clear that research in economics is full of value judgements (more on this below and in the companion paper (Mróz forthcoming)). What is important is that the Weberian view serves as a useful starting point for formulating a prescription that is the basis of the account of economic modeling (the "model of a model") proposed in the companion paper and illustrated with an example in the current paper. Before this account will be described, let us shortly recall the types of value judgements that can be involved in economic modeling.

On the most general level, there are value judgements involved even in choosing one study area over some other, as it demonstrates that the person choosing attaches greater importance to the former than to the latter. Or there are other general normative commitments in science, such as accepting the primacy of logic and evidence over authority. *Methodological* value judgements, more narrowly understood, weigh characteristics such as simplicity, choice of formalisms, internal and external consistency, predictive power, etc., against each other (cf. Shrader-Frechette, 1994, ch. 3). *Evaluative* (or *ethical*, for simplicity) judgements, on the other hand, correspond to claims that something is good or bad, just or unjust, desirable or undesirable, etc. (cf. Baujard, 2013). Additionally, *prescriptive* judgements can be characterized as corresponding to statements of recommendation.[2] In economics, they will most commonly be associated with policy recommendations, e.g. of the form "if the policy goal is X, then A, B, and C should be done to achieve this goal in the most effective manner." But of course, there can be methodological prescriptions (the Weberian prescription that facts and values should always be disentangled is just that), which means that this last category cuts through the former two. Max Weber was primarily focusing on values which appear when one is analyzing things from the perspective of a specific policy end,[3] but in current paper the methodological value judgements will be of primary interest.

As a practical matter, what follows from the Weberian stance is a prescription that a scientist should "put her values on the table", meaning – be open and

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[2] This partition corresponds to what economists know very well, namely – J.N. Keynes's (1891/1999) division of economics into positive economics (dealing with facts), normative economics (dealing with values), and the art of economics (formulating prescriptions to help achieve any given aim).

[3] In fact, Weberian account of value judgements in science was much broader and more nuanced, as was shortly summarised in the companion paper (see also Bruun, 2001, 2007). From the perspective of the current paper, however, the brief characterisation presented above is sufficient.

clear about them. However, in line with modern developments in analytical philosophy, but also in economics (in the works of Amartya Sen, for instance), it needs to be noted that such a clear-cut separation between facts and values is impossible in each and every instance of economic reasoning. Economics is permeated with value judgements, from choices between simplicity and realisticness of models to assuming possibility (or impossibility) of interpersonal comparisons of utility; from the widespread use of social value functions in welfare economics to specific arguments about inequality, so strongly visible in today's popular discourse. In light of this, it is perhaps impossible to strictly follow Weber's prescription at all times. But, as used in this paper, this Weberian perspective serves more as a guiding light than a strict code of conduct, and it does not assume one needs to be able to *fully* separate facts and values *in each and every case*. The modern claim that there is no strong ontological difference between the two does not mean that any attempt at separating them will be doomed to fail. On the contrary, as argued in Mróz (forthcoming), "it would rather reinforce the need of such separation inasmuch as we are able to do so, if only to avoid as much confusion as possible. And for the purpose of this paper, such lack of clear distinction would also not nullify, but rather reinforce the need to incorporate value judgements in our view of models and modeling practice in economics."

Given this Weberian prescription, and the fact that economics is a model-based science, the companion paper then proposed a view on economic models that took into account the value judgements expressed by the modeling agent. Modifying a well-known account by Mäki (2013, p. 91), it arrived at the following:

> **"[ModRep2]**
> Agent A,
> *expressing value judgements contained in set V,*
> uses (imagined) object M as
> a **representative** of (actual or possible) target R
> for **purpose** P,
> addressing **audience** E,
> at least potentially prompting genuine **issues of resemblance** between M and R to arise,
> describing M and drawing inferences about M and R in terms of one or more **model descriptions** D,
> and applies **commentary** C to identify and coordinate the other components." (Mróz, forthcoming).

The part in cursive letters is the addition to Mäki's account. In line with what was stated above about the limited possibility of separating values from facts, it might never be possible to specify *all* elements of V. But this is fine as long as some elements can be specified. Additionally, the word "expressing" is used here instead of some other, like "making", to allow for the possibility that some value

judgements in a given model will not be made consciously or deliberately.[4] Therefore, uncovering these judgements will often mean reconstructing them on the basis of analysis of a given model.

The original Weberian prescription states that one has to explicitly distinguish between the normative and the positive elements of a given piece of research because normative elements will have an impact on policy conclusions. The argument here is that if this is the case, then it will be good to have an account allowing us to conceptualize how something like this could be done. The above "model of a model" is a simple account of this sort. Given this, we can see how the discussion about economic models can, and should, take into account value judgements expressed in these models. This is done below using a case study.

## 3. THE AUSTRIAN BUSINESS CYCLE THEORY AND THE REAL BUSINESS CYCLES MODEL

The case study contrasts some aspects of the Austrian Business Cycle Theory (ABCT) and the Real Business Cycles (RBC) models.[5] What follows are short descriptions of the canonical versions of both, and then the analysis of value judgements involved.

The canonical model of the ABCT can be (crudely) summarized as follows (basing mainly on Garrison (2001) and Young (2015)). The central notion in the model is that of the *structure of production*. It is introduced instead of an aggregate "K" usually used in major mainstream business cycle models to denote capital stock. Using such aggregates is, according to the Austrians, a sure way to obscure real mechanisms responsible for the creation of cycles. The structure of production involves idealized stages of production, as visible in the so-called Hayekian triangle (fig. 1).

Given this notion, the model works as follows. When the individuals voluntarily decide to increase their savings and abstain from current consumption, the supply of savings available as loanable funds increases. This is signaled to the producers and investors by the drop in the interest rate. Producers are notified that consumers are willing to decrease their short-term consumption in exchange for increased consumption in the future, which is an incentive to invest in more "roundabout", and thus more efficient, methods of production. These methods, in turn, allow the producers to satisfy the increased future demand. Graphically, this would correspond to lengthening the horizontal leg of the triangle (injection of capital to the production stages far from consumption, creation of new stages) and to shortening its vertical leg (subtracting capital from the stages close to

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[4] Even though current paper deals mainly with methodological value judgements, this modification of Mäki's account is in principle meant to encompass all types of value judgements.

[5] As shown in Mróz and Hardt (forthcoming), the fact that the ABCT is a "theory" is not important for present purposes as it, and surely its specific instantiations in the literature, can be understood as a model.

**Figure 1. The structure of production in the ABCT**
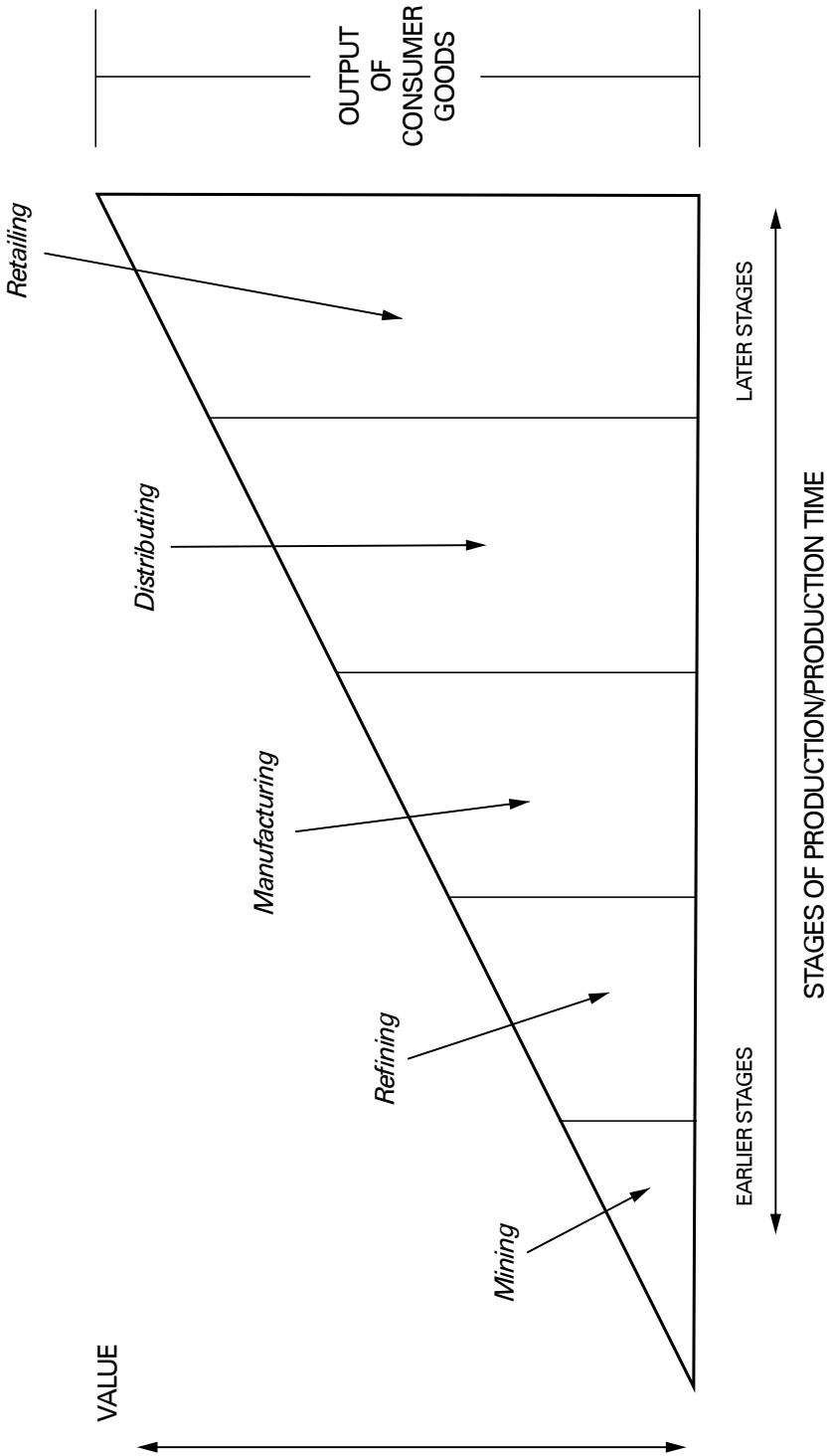


Source: Garrison, 2001, p. 47.

consumption).[6] This alignment of entrepreneurial decisions with consumer preferences generates sustainable growth, which requires abstaining from consumption in the short run in exchange for the expanded production and consumption in the future.

Things happen differently when the interest rate is lowered not because of a voluntary increase in savings, but because of a central bank engaging in monetary easing, or because the fractional-reserve banking sector used its inbuilt money-creation mechanism. It is not necessary, for present purposes, to dig into the specifics of the model. Suffice it to say that such monetary intervention induces, in the Austrian model, a disconnect between entrepreneurs' plans and consumers' preferences. Entrepreneurs observe what they think is an increase in loanable funds, while consumers want to take advantage of reduced interest rates and *increase* their consumption. This imbalance then results in a bust when it transpires that there is not enough funds to finish the investments in more roundabout production methods.[7] The bust is thus viewed as a necessary correction after a period of misalignments (called "malinvestment") in the time structure of production in the economy.[8] What has to be stressed at this point is that the ABCT, even in this simple form, is not restricted to blaming the boom-bust cycles solely on central banks. The setup of the banking system (e.g. the reserve requirements and, consequently, the associated multiplier in money creation leading to additional distorting effects) and other institutional considerations[9] are vital components of the explanation in this model. Additionally, while graphical tools such as Hayekian triangles are sometimes used for expository purposes, the main descriptive work in the model is done in narrative style, i.e. using English vocabulary.

The canonical version of the RBC theory, on the other hand, stresses other factors and is formulated using other tools, namely mathematical equations with

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[6] It is important to note that the Hayekian triangle represents *value*, and not physical production and consumption. Barnett and Block (2006) thoroughly criticise, from within the Austrian paradigm, the use of Hayekian triangles even for expository purposes. However, as my aim here is not to provide a detailed and perfectly accurate depiction of the ABCT, but rather to highlight some of its methodological features, this criticism is largely irrelevant for the purpose at hand.

[7] In principle the central bank could keep the boom going by continually injecting additional money into the economy, but on the Austrian account this will eventually result in significant inflationary pressures. Then, the central bank either switches to contractionary monetary policy (thus making loanable funds harder to attain and, consequently, uncovering the untenability of investment projects for which there are no funds) or induces hyperinflation.

[8] This is what is usually presented as *the* ABCT, however one needs to remember this model was proposed by Mises ([1913] 1934) and Hayek (1933, 1935) in the context of the Great Depression. Young (2015) is an interesting attempt at showing that this is but a variant in a broader family of models. His own model stresses the time structure of *consumption* and the *risk* structure of the economy (instead of the traditional *time* structure) to better account for what happened in the US economy during the Great Recession of 2008.

[9] For example, Young (2015) shows how changes in the risk structure of the economy, related mainly to operations of Fannie Mae and Freddie Mac, impacted the boom phase of the cycle (which, on the Austrian account, sows the seeds for the bust phase without any additional external shocks).

attached description. In the short presentation of this well-known model, I follow the basic textbook exposition by Romer (1996, chapter 4).

The RBC is based on the Ramsey-Cass-Koopmans (RCK) growth model, which is "the natural Walrasian baseline model of the aggregate economy" (Romer, 1996, p. 151). Assuming exogenous technological progress, it presents how long-run economic growth without fluctuations comes about – to introduce fluctuations, one has to input some disturbances, such as exogenous shocks, heterogeneity among agents, or market imperfections, none of which are present in this model. It is a fully microfounded representative-agent model in which – as opposed to the Solow model where the savings rate is assumed constant – households (assumed to be identical and infinitely lived) make optimal consumption/savings decisions. Therefore, there is an interaction between the utility-maximising households, who supply savings, and profit-maximising firms, who demand investment. In any case, the solution to the model is an optimal growth path that realizes households' preferences over the time-path of consumption. The solution is (simplifying a great deal) arrived at by specifying a steady-state and dynamics of a system of two differential equations, one in capital and one in consumption. There are some obvious convergences with the Austrian model in the way some parameters work, which is not surprising given that these properties are rather intuitive. For example, the RBC model is constructed in such a way that saving is more desirable at higher interest rates, or that higher time-preference (more impatient agents) translates into more consumption today, but at a price of less capital accumulation, and therefore higher interest rates and less consumption in the long run.

Two modifications are introduced to the RCK model in baseline RBC models to account for fluctuations in the economy. First, one has to introduce some external shock, and traditionally these were either shocks to the technology (translating into intertemporal changes in the production function), which change the amount produced from a given quantity of inputs (Kydland and Prescott, 1982; Long and Plosser, 1983), or changes in government purchases, which change the quantity of goods available to the private sector for a given level of production (Christiano and Eichenbaum, 1992; Baxter and King, 1993). These shocks are *real* as opposed to monetary, or nominal, disturbances – hence the name of the model family. Second, variations in employment have to be allowed to fit the observed facts about the business cycle. RBC models allow for changes in employment by introducing work-time as an argument in the households' utility function.

A classic example of a cycle-generating shock is a positive but temporary productivity shock which momentarily increases the output for any given level of inputs. Then the household decisions come in. One is the trade-off between consumption and savings. Having a greater output at their disposal, and valuing future consumption, a household will respond by consuming some of the increase but also investing more to increase future consumption. This explains one of the observed facts – that investment spending is more volatile than consumption spending. The other decision is the trade-off between labor and leisure. Higher

productivity means it is desirable to substitute work today for work in the future and decrease leisure, but it also means workers are earning more today, which can discourage additional work-time. Moreover, labor is pro-cyclical, which means the substitution effect is stronger than the income effect.

As such a one-time shock translates into increased investment and, consequently, more capital in the future, it has not only one-time, but also persistent impact. A series of such shocks generates a boom. Conversely, a series of bad shocks generates a recession. Without the shocks, there are no business cycles in the RBC models. What is crucial here is that, in contrast to the ABCT, there is only one causal source of the business cycle.

The other crucial thing is that households and firms respond optimally *all the time*. This means that, given the shocks, cycles of booms and recessions are preferred to different paths for the economy. This results in policy recommendations that are similar to the Austrian ones. As the ABCT implies that it is mainly the government involvement in the economy that generates the crises, the government should stay out of the economy. The RBC implies, in turn, that the crisis is the most efficient response of the economy to the external shocks and any attempts at improving the situation by using fiscal or monetary policy are misguided. This alignment of policy recommendations between the schools is useful for the current purpose, as it allows to push aside any potential differences in evaluative judgements involved and serves to underline the methodological value judgements.

## 4. METHODOLOGICAL VALUE JUDGEMENTS IN THE ABCT AND RBC MODELS

In light of this feature, let us now go back to the model of a model presented in section 2, and compare the ABCT and the RBC models with regard to its components. For now, let us stick to Mäki's account without the inclusion of value judgements.

Both models have arguably the same general target, i.e. the cyclical fluctuations in economic performance. They also have the same purpose as they try to explain these fluctuations by identifying their causes. It is also highly plausible that they are intended to represent something. It is surely true for realistically-minded Austrian economists that they try to represent a part of real world. It is also not far-fetched to suppose something like this for the RBC theorists, especially as the intricate arguments in philosophical debates about whether models represent something or not are mostly the domain of philosophers of science and not practicing economists. It seems that some form of realism about representation is the default position among practitioners of economic modeling. When it comes to the audience, on one level it is the same as it consists of professional economic researchers. On another level, however, it is different. The RBC models are aimed mostly at mathematical economists operating in what we

could call the "mainstream", while the reception of the ABCT is largely limited to the narrow Austrian audience. On the other hand, the Austrian economists are interested in getting their ideas across to the mainstream. So definitely there is at least some degree of convergence between the intended audiences of these two classes of models. The difference is most visible when it comes to the model description. The RBC model is expressed in mathematical terms with some added interpretation in English, while the Austrian model is expressed in the narrative style, without mathematics, but sometimes, as presented here, with the help of simple graphical devices that are useful for exposition purposes. And it is of course obvious that the substance of the explanation of how the boom-bust cycles come about is completely different between the two models.

As mentioned in the companion paper, it is not appropriate to stop here, only noting these similarities and differences. One should go further, from Mäki's model of a model to the updated version ModRep2 presented in section 2, because this allows a better understanding of why the content of these models, their intended audience (to some extent), and their description are different even though the target and purpose are the same. Of course, the difference between ModRep and ModRep2 lays in the latter's explicit inclusion of value judgements. In the case of the ABCT and the RBC it will be most fruitful, as mentioned above, to focus on methodological value judgements.

On the most general level, the ABCT underscores the crucial role of the structure of production, which follows from the typically Austrian insistence on the importance of capital theory in economics (cf. Garrison, 2001). The New Classical school, which produced the RBC models, together with all the other strands of mainstream economics, abstracts from capital theory, thus treating it as irrelevant to the explanation of business cycles. This is of course a consequence, to some extent, of the differing understanding between the schools of how the world actually works, but it does not seem far-fetched to suppose some of such differences trace back to the most general type of methodological value judgements mentioned before, the ones involved in choosing some research area over some other.

Going further, it is easily noticeable that both models operate in line with the principle of methodological individualism (in economic parlance, they are microfounded). Both models concern decisions of individual actors and how these decisions impact the outcomes on the macro-level of the economy. But it seems that the understanding of methodological individualism differs between the schools.

This methodological doctrine was introduced by Max Weber, most notably in *Economy and Society* (1922/1968).[10] In Weber's version, it claims that social phe-

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[10] Austrian economists, who consider methodological individualism an indispensable part of economics, would say that this principle was at work already in the writings of Menger (e.g. 1883/1985). As shown by Heath (2015), however, Menger's version was actually different to Weber's, and later exponents of the school, such as Mises, Hayek, and Lachmann, went with the Weber's view.

nomena have to be explained by reference to individual actions, which in turn follow from the intentional states motivating individual agents. For him, the requirement of individualism followed from the vision of social sciences as *verstehende* (understanding/interpretive) sciences. Individual action is the only "subjectively understandable" component of sociological or economical explanations – given that actions are motivated by intentional mental states, we have interpretive access to them by virtue of our ability to comprehend the acting agent's underlying motives. For Weber, this means that social sciences are different than natural sciences in that they allow this subjective understanding of actions (cf. *ibid.*, p. 15). This, in turn (and noting that only individuals can possess intentional states), means that explanations invoking individual actions should take central role in social science as without knowing *why* people do what they do, we are unable to understand macro-level phenomena which result from the actions. So the goal of the explanation is *understanding* of the social phenomena.

Austrians, following Mises (1949), often present economics as part of a broader science of human action, praxeology. Hülsmann (2001, p. 36) sums it up by saying that the Austrians are focused on analyzing human action while the economic mainstream is focused on the analysis of quantities of things that are subject to human action. This is very much tied to the Weberian notion of *verstehende* social science. Lachmann (1971, 1991), in particular, explicitly connects the interpretation of individual actions and expectations (as well as the meaning of institutions in economic and social life) to the Weberian tradition.[11] When it comes to business cycle theories, Lachmann (1943) argues that all of them ultimately rest on some presuppositions about expectations. To conceptualize these expectations in an adequate manner, it is necessary to *understand* how agents interpret changing conditions. Because these interpretations vary, it is a mistake for an economist to treat them as fixed or governed by some mechanical updating rule. Instead, a proper economic explanation renders the individuals' interpretations of the world intelligible (cf. Martin, 2015).

This is but one way of explaining the firm Austrian stance against the use of mathematical methods in economics, or at least methods that are standard in the mainstream economics. For example, the mathematical structure of the baseline RBC model fixes a lot of parameters of the household's choice. In the Austrian view, such fixing is not warranted if one wants to understand the dynamic nature of individual choices and actions. The Austrian approach, similar to Weber's in this regard, is closely tied to their advocacy of radical subjectivism (cf. Yeager, 1987; Lavoie, 1991; Martin, 2015). For instance, Austrians will typically reject Marshall's scissors metaphor in which subjective utility and objective cost of production influence prices. For them, as for Buchanan (1969), costs are also subjective. This relates to the conception of human action as multifaceted and dynamic, which does not lend itself to mathematical analysis in the spirit of mainstream economics. So the version of methodological individualism espoused by

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[11] Another crucial Austrian text is Hayek (1942–44).

the Austrians, resulting from its inherent connection to Weber's vision of *verstehende* social science and to the subjectivist stance, is at least in part responsible for the model description being devoid of mathematics in the case of ABCT.

The RBC models, sitting within the general-equilibrium paradigm, also rely on some understanding of individual action – the one that is embedded in the microeconomic *homo oeconomicus*. Therefore, it is rather clear that they fulfil the demands of methodological individualism. It is also clear that any form of marginalist economics is to some extent subjectivist (e.g. when it comes to the concept of value). But the crucial difference here is that the mainstream economists, RBC theorists among them, are not so radically subjectivist as the Austrians, and they do not adhere to the strict connection between individualism, subjectivism and *verstehende* social science (see Hülsmann's distinction above). A definition of methodological individualism largely devoid of such connections could be traced to Watkins (1957), who juxtaposed what he called "half-way" explanations with "rock-bottom" explanations. The former do not need to specify any mechanism on the individual level, but the latter do. The rock-bottom explanations should be preferred on this view, but not because they allow us some unique Weberian understanding, but because they are just deeper and more detailed. This does not mean, however, that half-way explanations are completely useless – they are *some* explanations, after all. These explanations could for example result from purely statistical analysis of correlations between economic variables. The New Classical school was known for their calls for microfoundations, especially on the basis of the Lucas critique (Lucas, 1976), but it never meant statistics could not supply any explanations. For Austrians, however, statistics alone explains nothing.

The foregoing discussion allows us to assert the following. The commitment to methodological individualism in Austrian economics is inextricably tied to subjectivism, which is, in turn, tied to a specific vision of what social science should be – namely Weberian *verstehende* science. Subjectivism opens one way of criticism of mathematical methods prevalent in mainstream economics. This then translates into how specific models are being expressed, and in our case – it explains why the description (understood as one of the elements of ModRep2) of the ABCT looks the way it does. On the other hand, methodological individualism embedded in the RBC models is not tied to such commitments about the nature of social sciences, and economics in particular. If anything, it rather follows Popper (1945), who claimed (in the section tellingly titled "The Unity of Method") that both social and natural sciences are concerned with "causal explanation, prediction and testing" (*ibid.*, p. 78), and there is no necessary difference of method between them.[12] Such understanding is of course only one of many sources of the drive towards mathematisation in the 20th-century mainstream

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[12] For Polish-language readers, a comprehensive reference for both value judgements in mainstream economics and a defence of methodological monism of all empirical sciences is Czarny (2010).

economics. The literature on this topic is extensive[13] and there is no need to delve into it in this paper.

What is important from the perspective of this paper is that the difference between the descriptions employed to present these two models to the audience stems, ultimately, from the discord in the respective visions of what economics should be and what should be its primary focus. Should economists be in the business of understanding, or just in the business of causal explanation similar to natural sciences? But of course, this is not something that can be argued for or against solely on the basis of scientific arguments pertaining to the nature of the studied subject matter. At some point the fact-based arguments about what method is more adequate to the subject matter end. It can reasonably be asserted that both visions can have place in social sciences, and both can provide their own types of insights (following up on the Hülsmann's distinction – it seems that both the science of human action and the science of the quantities subject to human action have a role to play). Therefore, ultimately, at least part of the difference lies in the preference towards one or the other mode of doing economics. In other words, it lies in a methodological value judgement.

The discussion of methodological individualism and subjectivism shows one issue with employing the framework proposed in ModRep2. In this example it was necessary to go very far beyond the confines of the discussed models to understand the underlying value judgements. The big picture, the general outlook on what economics is or is not, needed to be invoked to understand why descriptions of these two models vary. Such analyses, then, run the risk of quickly becoming overwhelming. To identify all implicit value judgements in some evaluated model one might have to guess the meaning of some statements, consult the whole body of theory, the author's biography, normative opinions expressed elsewhere, etc. This concern was already mentioned in the companion paper, and the response was that the prescription urging the user of a piece of research to identify the value judgements was intended as a piece of practical guidance. It does not require the reader to uncover *all* the value judgements in the process of interpreting a model, as this would be impractical, but it elucidates certain awareness and attitude towards economic models. It seems especially useful in light of the prevalent opinion in economics that it is by and large a value-free science.

This first response notwithstanding, it can also be shown that not all value judgements are so deeply buried and require so much work to uncover. For this, consider the second example relating to the ABCT and RBC models. As mentioned above, the ABCT should not be interpreted as pointing to only one single source of cyclical fluctuations. With the Austrians emphasising the structure of production, the activities of the central bank and the banking sector

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[13] See e.g. Weintraub (2002). For the examples from the post-Great Recession debates on mathematisation of economics, see e.g. Colander et al. (2009); Colander (2011). For a critique of the mathematical economics from the perspective of the philosophy of science, see e.g. Lawson (1997, 2003, 2009).

operating under the fractional reserve are one source of disturbances, but the institutional setting will also impact how the cycle develops. The complexity of capital, the workings of the price system as an information-conveying mechanism, the entrepreneurial calculations – all this also enters the explanation (cf. Young, 2015). Therefore, as it does not point to only one single cause of recessions, for our purposes this model could be termed "multicausal." On the opposing end, the RBC model has exactly one source of cycle-generating disturbance, and in the canonical version it is the exogenous technology shocks. So it is more of a particular, single hypothesis, and so we could term this model "monocausal" in this sense.

The weight the Austrian economists attach to the realisticness of their models, and to their ability to explain how the world actually works, is well-known. The view that "understanding the causes of aggregate fluctuations is a central goal of macroeconomics" (Romer, 1996, p. 146), including the RBC models, is also widespread in mainstream macro. Given this, we were able to conclude earlier that both of these models are meant to explain some features of reality. But given that one of these models is multicausal, and the other is monocausal, the complexity of their respective explanations differs. This has implications for the methodological assessment of these models.

The baseline RBC model was first proposed to account for a few stylized facts about the business cycles, some of which were mentioned before. But it is of course known that the calibrated model[14] fails to fit the data in many respects (e.g., it underestimates the volatility in labor input relative to the volatility of output). This means that, if the underlying idea that exogenous shocks are responsible for business cycles is sound, there must be some other, or additional, source of shocks. Or maybe one has to add the nominal dimension to the model after all, given that there is none in the baseline version (which is the path macroeconomics actually took with the introduction of price and wage stickiness, etc.). This means that the explanation was at best incomplete from the very start and it was so, crucially, judging by the criteria that the theorists set up for themselves (i.e., the fit with the actual data). But the model was still considered one of the most important developments in modern macroeconomics. This suggests that a trade-off was in play between the realisticness and success of the explanatory mechanism, on the one hand, and something else, on the other hand. Normally, if there is a trade-off between realisticness and something else, this "something else" is simplicity or precision. Given the monocausal nature of the explanation in the RBC model, simplicity is definitely there. As for precision, it is generally assumed (sometimes implicitly) as desirable in mainstream economics, as evidenced by the ubiquitous drive for specific numerical results.

The Austrians, on the other hand, will claim that considerations of realisticnesstrump all other possible choices, at least to a point where further realistic-

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[14] The baseline calibrated model referenced here is as described in Romer (1996, Ch. 4.9), which means it is taken from Prescott (1986) and Hansen (1985), with parameter values assigned by Hansen and Wright (1992).

ness becomes overwhelmingly impractical (because obviously the Austrian explanation contains various simplifications and omissions as well – cf. Mróz and Hardt (forthcoming)). The multicausal nature of their model – which makes the model more complicated in its explanatory mechanism – is a direct outcome of such thinking.

What these models represent, then, is the outcome of methodological choices on the realisticness-simplicity axis. There is no obvious, strictly fact-based way of determining which of these choices is better. The drive towards realism will be in some sense better if the goal is to explain the whole phenomenon at once. But if the goal is to provide a baseline model, and then to work on it by adding new layers, new parameters, sources of shocks, etc., then simplicity will perhaps be better, as it will allow other researchers to understand the basic features of the model before adding something to it. Given this, even a simple, "unrealistic" explanation still fulfils the demands of the RBC model's purpose, which is to explain. It is still some explanation, after all. Therefore, the methodological choices, such as the one involved in deciding between realisticness and simplicity, will always involve methodological value judgements related to what a given researcher prefers in her particular model. (Note how, in contrast to the previous example involving individualism and subjectivism, the discussion in this one was confined to the models themselves to a much greater degree.)

The two examples discussed in this case study do not exhaust all possibilities of uncovering methodological value judgements in these two models. Much could be said, for example, about the difference between rational expectations assumed in the RBC model and the understanding of expectations among Austrian economists[15], or about the use of the concept of the representative agent in mainstream economics.[16] What these examples do show, however, is that at least some important differences between models do stem from methodological value judgements.[17] These differences cannot be traced to the modelers' purposes, intended

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[15] Yeager (1987, p. 17): "Since expectations are formed by people, they are understandably loose, diverse, and changeable."

[16] One of the consequences of using this concept is that in such models there is no possibility to obtain emergent properties on the macro-level, so properties which would not be reducible to the properties on the micro-level. In modern mathematical economics this assumption is lifted, e.g., in agent-based models.

[17] Here it is perhaps instructive to draw a connection between methodological value judgements and methodological assumptions. It is of course difficult to compare models without discussing their methodological assumptions, and it is being habitually done in most such exercises. But it does not mean that the latter are synonymous with methodological value judgements. While methodological assumptions will often concern some very specific characteristics of models (like the choice of values of specific parameters in the production function; the choice between rational and adaptive expectations; the choice of estimation methods in empirical models), methodological value judgements are a broader category encompassing, as we have seen above, considerations such as what is the nature of economic sciences, what is the proper balance between simplicity and realisticness, etc. There is, therefore, some convergence between the two concepts (the choice between various types of expectations can be seen as a methodological assumption, but also as a methodological value judgements – as hinted at above), but value judgements should be seen as a broader concept.

audiences, issues of representation (whether the model is intended to represent something or not), or to model descriptions. This means that to include value judgements in model comparison exercises is to add an important new element to these comparisons that is not, as of yet, represented in the literature on economic modeling.[18]

## 5. A COMMENT ON EVALUATIVE JUDGEMENTS

This paper is mostly concerned with analyzing methodological value judgements, but it is more in the spirit of Weber's discussion of value-free science to focus on the evaluative judgements which enter the normative considerations of economists when it comes to policy recommendations. These types of judgements are also at the heart of the discussion about the value-free science. The value added of the previous section is, therefore, to show that methodological value judgements, even though they do not seem to impact policy advice directly in the way their evaluative counterparts do, have an important influence on how the models look like, including how the explanatory mechanisms in these models look like.

To balance the previous section, in which models were compared in a manner that allowed to push evaluative differences aside and focus on methodological differences, it would be best to engage in another case study, one which would push methodological differences aside and focus on evaluative differences. Therefore, it would be best to focus on two models from the same family, or school of thought (which would ensure methodological similarity), that differ in their evaluative components. It is, however, not a straightforward task in economics as schools or traditions of thought, which produce families of models, are most often defined not only on the basis of their methodological convictions, but also on the basis of their evaluative convictions.

Consider New Classicals and Austrians on one side, and Keynesians on the other. Normative convictions of the former two (e.g., related to the proper role of governments in the economy, or in the time of crisis specifically) are underpinned by the agreement between two schools that there exists a kind of natural harmony, or a kind of equilibrating process, in the market. Normative convictions of the latter, however, are underpinned by the opposing notion – that the market system does not have a built-in equilibrating mechanism. (And such convictions are then impacting normative opinions on issues such as growth, inequality, regulations, etc.) Therefore, one of the characteristics of *all* models produced within

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[18] It is perhaps worth noting that Austrian economists would normally deny that value judgements enter the positive science of praxeology (cf. Rothbard, 1976). But such statements normally refer to the evaluative judgements, and not to the methodological value judgements, mostly because the evaluative judgements are the main issue of the debate on whether science can be "value-free". Therefore, this Austrian position has no direct bearing on the case study shown here.

the New Classical school, or within the Austrian school, is that the modelers will share relevant convictions, and the analogue is true for Keynesians. This means that no readily apparent differences in evaluative judgements (regardless whether they are openly expressed or just assumed, or maybe just embraced unknowingly) will exist between models belonging to one and the same family. This, in turn, means that most of the differences in evaluative judgements between a given pair of models will stem from the broader paradigms these models were formulated in. In other words, most normative differences (i.e. differences in evaluative judgements) seem not to be embedded at the level of individual models, but at the level of broader thought traditions or schools.

This is similar to the difference, discussed above, in the vision of economics as science between the Austrians and the mainstream theorists. Such visions define schools, and the differences between schools then impact how the specific models look like. It is dissimilar, however, to the second example described in the previous section, about the trade-off between realisticness and simplicity (which is a simplification itself, one might add). That kind of methodological value judgement is decided on a model-by-model basis, irrespective of a broader thought tradition a researcher might belong to. (There exist, of course, RBC models much more complicated than the baseline version.)

The hypothesis stated above – that most of the evaluative differences between models are in fact differences between schools, so evaluative differences will be accompanied by methodological differences[19] – is not a good starting point if a case study showing these differences needs to be analogous to the one presented in the previous section in that it will highlight one type of value judgements while suppressing the other. Such case study would ideally pick models from the same family, but then the intuition is that the evaluative differences would be hard to grasp. For now, this has to be seen as a limitation of the account to modeling proposed in the current paper. In its present form, the account is well-suited to analyze differences in methodological value judgements between models, but less so to analyze differences in evaluative judgements, at least as long as the models belong to the same school of thought.

This does not mean, however, that a relevant case study *has to* pick models from the same school of thought. It is in principle possible to account for evaluative judgements on the basis of models picked from different families, just remembering to control for their methodological differences. However, given the space that would be required to introduce a new set of models and then to analyze them while controlling for these irrelevant differences, this is left for future research to pick up. And, in any case, the discussion in this section is based on broadly sketched remarks and general outlook on how economics looks like, which gives rise only to certain intuitions and hypotheses and not to definitive

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[19] For example, while both Austrians and RBC theorists require microfoundations, there is no such thing in traditional Keynesianism. Note, however, that the implication does not necessarily work the other way around and, as shown by the ABCT and RBC case study, methodological differences are not always accompanied by evaluative differences.

conclusions. So it is not in fact settled that a case study cannot be undertaken that would be analogous to the one presented in this paper, only that certain difficulties seem to exist in doing so.

The companion paper mentioned mainstream monetary economics as a potentially promising avenue for this kind of endeavor. The current paper dealt primarily with methodological value judgements, therefore different targets were chosen for the case study. What remains to be done, then, is to engage in more detail the issue of evaluative judgements in economic models.

## 6. CONCLUSION

This paper built on the idea, novel in the literature on economic modeling, that it is worth incorporating into this literature the ideas from the discussions on value judgements in economics. These value judgements can be, for the purposes of this study, divided into two groups: methodological and evaluative (with the additional third category, prescriptive judgements, cutting through them and making it possible to classify some judgements as methodological prescriptions and some as evaluative prescriptions). A complete argument supporting such incorporation should show that an account of economic models which includes value judgements is able to provide some new dimension to understanding the content, purpose, description, etc., of economic models. The current paper went some way towards providing such an argument by comparing two models (ABCT and RBC) and highlighting some of their respective methodological value judgements. These judgements, which cannot be reduced to purely fact-based decisions of researchers, are responsible for non-trivial characteristics of these respective models, such as the relative complexity of their explanations of business cycles as well as the languages used to provide their descriptions. Therefore, the inclusion of value judgements (or at least of their methodological subset) in appraising economic models proves useful in providing a fuller account of these models.

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# WEBEROWSKIE PODEJŚCIE DO SĄDÓW WARTOŚCIUJĄCYCH W MODELACH EKONOMICZNYCH – ZASTOSOWANIE DO METODOLOGICZNYCH SĄDÓW WARTOŚCIUJĄCYCH ZAWARTYCH W AUSTRIACKIEJ TEORII CYKLI KONIUNKTURALNYCH ORAZ W TEORII REALNYCH CYKLI KONIUNKTURALNYCH

## STRESZCZENIE

W artykule zastosowano prosty „model modelu" – szczegółowo opisany w powią-
zanym tekście – w którym wykorzystano poglądy Maksa Webera na rolę wartości
w naukach społecznych. W tymże powiązanym tekście argumentowałem, że, aby
porównywać modele ekonomiczne w gruntowny sposób, należy w tych porówna-
niach uwzględnić sądy wartościujące wyrażane lub przyjmowane w tych mode-
lach. Zatem nasz „model modelu" powinien zawierać te sądy, co nie jest
powszechne w literaturze na temat modelowania ekonomicznego. Sądy warto-
ściujące można w uproszczeniu podzielić na metodologiczne i ewaluatywne. Te
drugie dotyczą kwestii etycznych, pożądanych kierunków polityki itd. W niniej-
szym artykule skupiam się na tych pierwszych. W związku z tym prezentuję stu-
dium przypadku i pokażę, w jaki sposób niektóre różnice pomiędzy modelami
związanymi z austriacką teorią cykli koniunkturalnych i modelami związanymi
z teorią realnych cykli koniunkturalnych powstają ze względu na odmienne meto-
dologiczne sądy wartościujące zawarte w tych modelach. Mamy tu m.in. do czy-
nienia z różnym rozumieniem istoty nauk społecznych, a także z niekompatybil-
nymi wyborami pomiędzy realistycznością i prostotą. W końcowej części artykułu
znalazł się również komentarz na temat sądów ewaluatywnych w modelach eko-
nomicznych.

**Słowa kluczowe:** Max Weber, austriacka teoria cykli koniunkturalnych, teoria
realnych cykli koniunkturalnych, metodologiczne sądy wartościujące, ewaluaty-
wne sądy wartościujące, modelowanie ekonomiczne.

**Klasyfikacja JEL:** B41, B53