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# Literatur – Literature

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## New Classical and Austrian Business Cycle Theory: Is There a Difference?

By

Joachim Scheide

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### I. Introduction

During the 1970s a new and radical criticism of Keynesian macroeconomics appeared. According to the “equilibrium theory with rational expectations”, business cycles were not the result of market failure but due to unavoidable errors on the part of optimizing agents. This approach pioneered by Robert Lucas was later – appropriately or not – called the “new classical theory”, because it is based on the common classical assumptions of purposeful action and cleared markets. As the “new” aspect, it introduces a hypothesis about expectations which is compatible with general equilibrium theory, and which replaces the classical postulate of perfect information.

This new approach is built on pre-war theories. In fact, following Laidler we would get the idea that the new approach presents a “modern version” of Austrian business cycle theory: “. . . I prefer the adjective neo-Austrian . . . In their methodological individualism, their stress on the market mechanism as a device for disseminating information, and their insistence that the business-cycle is the central problem for macroeconomics, Robert E. Lucas Jr., Robert J. Barro, Thomas J. Sargent, and Neil Wallace, who are the most prominent contributors to this body of doctrine, place themselves firmly in the intellectual tradition pioneered by Ludwig von Mises and Friedrich von Hayek” [Laidler, 1982, p. IX]<sup>1</sup>.

Lucas himself sees his work as one way to solve the “apparent contradiction” (von Hayek) between the phenomenon of business cycles and general equilibrium theory and – in his famous “Understanding Business Cycles” [1977] – quotes von Hayek [1933]. However, further references to pre-Keynesian work are rare<sup>2</sup>.

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<sup>1</sup> Hoover [1984, p. 67] also draws a parallel: “The Austrian precursors of the new classicals. . .”.

<sup>2</sup> In an interview Lucas mentions: “The ideas of Hayek or Mitchell are interesting – worth building on – but their methods are not” [Klamer, 1984, p. 56].

Despite these links, the new classicals are certainly not embraced by Austrians; as a matter of fact, there are only very few comments on their work<sup>3</sup>. Neither were they welcomed by the established monetarist school – with only few exceptions<sup>4</sup>. Where *do* they stand? – It is clear that this cannot be answered by looking at policy prescriptions alone. In this respect, the new classicals are probably just as radically liberal as any Hayekian<sup>5</sup>.

In this paper, we shall explore to what extent the new classical business cycle theory can be viewed as being in the Austrian tradition. I will try to avoid the temptation of fishing for quotes of both schools to find evidence for their similarity or difference but concentrate on the ideas expressed in their basic contributions to economic theory in general and to business cycle theory in particular.

This paper will be organized as follows: Before we analyze the views on business cycles, we will discuss the basic tenets of the new classical theory. The assumptions of equilibrium and rational expectations are not only new but also highly controversial and should therefore be compared with the ideas of the Austrian theory on business cycles. The next section deals with the general methodological propositions as to the task of economic theory, the behavior of individuals and the market process. The fifth section discusses the interpretation of both schools of the nature of business cycles, the causes of fluctuations in economic activity and the transmission mechanism. What follows will be remarks on the role of formal methods and abstract modeling and the task which empirical research can or cannot perform. The final part contains the comparison of some policy recommendations and discusses whether the two approaches can explain certain trends or episodes of economic history.

## II. New Classical Equilibrium versus (?) Austrian Disequilibrium

The two theories seem to be incompatible with respect to the interpretation of the term “equilibrium”: While Austrians claim that equilibrium can hardly ever be achieved – and thus view business cycles as deviations from an imaginary or idealistic equilibrium path –, new classicals assume that equilibrium conditions are met in each period. In part, this distinction may be semantic, because one may *define* a change in any variable (e.g. unemployment) as an equilibrium or disequilibrium phenomenon. One might also say that both approaches are equally “empty” because building up a reference situation which can never “exist” does not help matters. Neither do time series of prices or quantities reveal any “truth” about this distinction because we cannot *observe* an equilibrium. From this it is clear that the equilibrium concept is just a construct which may or may not be useful in interpreting reality. Hence we should analyze the definition and meaning of equilibrium of both approaches to decide whether there is any disagreement in their basic tenets.

Both theories have a common enemy. Austrians strongly object the neoclassical concept of equilibrium, which is interpreted as being static: “... the state of affairs in

<sup>3</sup> Among them are O'Driscoll [1979] and Machlup [1983].

<sup>4</sup> Milton Friedman, for one, makes only few comments, whereas Brunner and Meltzer picked up many ideas and developed them further. See, for example, Brunner *et al.* [1983]. They stress the importance of (monetary and fiscal) policy regimes – one of the characteristic results of the new classical theory.

<sup>5</sup> See Paqué [1985] on the various schools of dogmatic liberalism.

which all plans are successfully carried out without disappointment and without reason for subsequent regret" [Kirzner, 1981, p. 116]. This preoccupation with equilibrium represents a "serious shortcoming" of neoclassical theory because it does not explain human behavior and does not relate to the nature of market processes, which – according to the Austrian view – economists have to explain. The attack of the new classicals on the equilibrium concept in the "neoclassical synthesis" turns in the same direction: In those models "... households and firms jointly solve explicit, 'static', maximum problems, taking prices as parametrically given ... Now economies experiencing recurrent business cycles are quite evidently not 'at rest', so that static equilibrium theory ... is not a good imitation of reality for the purpose of understanding these events" [Lucas, 1980a, pp. 701/702]. They especially criticize the notion derived from these models that excess supplies or demands can literally be observed (e.g. "gaps"), which, in the Keynesian paradigm, are the basic rationale for stabilization policy.

The new classicals define equilibrium not as an "ideal" state but rather as a process in which prices and quantities are determined in competitive markets, with each participant continuously pursuing his own interest. In this sense markets always clear although further revisions of plans may have to be made<sup>6</sup>. This means that adjustment to disturbances may not occur instantaneously but nonetheless in an optimizing fashion, so that the classical postulates are always fulfilled. There exists no knowledge of an outside observer (for example, policymaker or economist) to tell that a reaction is not optimal, that there remain unexploited profit opportunities or, roughly speaking, that behavior is not "rational" – also in the Austrian sense. Thus it is the adjustment to the imaginary path of new classicals – the so-called "full-information path" with no disturbances<sup>7</sup> – which new classicals call equilibrium. In Austrian theory, there is also an imaginary equilibrium path to which – in the absence of new disturbances – the economy tends to adjust. This dynamic interpretation of equilibrium is therefore immune to the critique put forward against the neoclassical "static" concept. Lucas [1980a] criticizes the use of "free parameters" in those models which just reflect "adjustment speeds", "rigidities" or "illusions", but cannot illuminate behavior or choice of economic agents<sup>8</sup>. The intention of the new classicals to interpret time series in this

<sup>6</sup> At any point in time, there is no knowledge of the direction in which plans will have to be revised in the future. If there were, contracts about prices and quantities would be different in the present period. In other words, errors will be made, but they are not systematic, i.e. they cannot be known *ex ante*. Lucas stresses that *later on*, people will find out that they made a mistake. For example, during the Great Depression some workers refused to accept a job at a certain wage which was – in their opinion – too low. Some months later, however, they wished they had accepted, because wages had fallen further.

<sup>7</sup> This definition is equivalent to von Hayek's "equilibrium of wages and prices which would establish themselves with a free market and stable money" [von Hayek, 1975, p. 19]. – Given these definitions, deviations from that path imply that unemployment can be "too high" or "too low".

<sup>8</sup> Though the use of free parameters cannot be criticized as such, a dogmatic would insist on the discipline imposed by equilibrium theory bearing less free parameters. The difference is important, because "... there is no way to predict the nature of these responses [adjustment in disequilibrium models] short of experimenting with the system as a whole. Yet it is precisely the attempt to avoid having to do this that leads us to use economic theory in the first place ... we will know what the aggregate [equilibrium] parameters mean, we will understand them in a sense that disequilibrium adjustment parameters will *never* be understood" [Lucas, 1980a, p. 712]. – Lachmann [1984b, p. 177] criticizes – though from a different perspective – the term "neoclassical" as misleading because the

manner brings their ideas in line with Austrian thinking, independent of the fact that they call business cycles an equilibrium phenomenon. Austrians also use equilibrium as the starting point of business cycle analysis and – just as the new classicals – speak of a quasi “automatic” tendency towards that path<sup>9</sup>. Thus the difference seems to be just semantic; (new classical) permanent equilibrium and (Austrian) permanent disequilibrium can be reconciled.

In new classical models, markets can be said to clear because prices and quantities are the outcome of the plans of economic agents. They formulate *ex ante* their reaction to possible disturbances in the future, i. e. they draw up a “contingency plan”. Agents do not act *ad hoc* to new situations, but choose *strategies* describing how they will react to certain changes, for example, an increase of the selling price for their good. They are assumed to take account of business cycles in this fashion, too, since everybody knows they exist; business cycles are recurrent in character and thus can – according to this theory – be viewed as risk<sup>10</sup>. So any reaction, including those which lead to cyclical fluctuations of employment, production and so on, is a voluntary response to *possible but unforeseen* situations like real or monetary disturbances. New classicals repeatedly state that equilibrium does not mean “happiness” (workers don’t like depressions!). However, we must – with respect to unemployment, for example – be able to understand why workers *decide* not to work, *given* the wages offered, *given* the preferences as to the substitution of work and leisure<sup>11</sup> and *given* the opportunity cost of working (e.g. unemployment insurance)<sup>12</sup>.

Austrians and new classicals refuse to use Keynesian concepts like “capacity utilization” or “potential output” for basically the same reasons. For Austrians, the capital stock is not a given constant or is not growing with a constant rate. Capacity depends on the structure of relative prices and the expected future streams of income. For example, the capacity produced in the boom becomes obsolete when monetary expansion stops. So there is no “underutilization of capital”. New classicals criticize the

classicals were indeed concerned with human behavior in “their best days”. – All this is not to deny important contribution to the microfoundation of macroeconomics. However, the new classicals criticize that these were not fully implemented in the macroeconomic models which served as tools for policymakers. See Lucas, Sargent [1978].

<sup>9</sup> “... it is my conviction that if we want to explain economic phenomena at all, we have no means available but to build on the foundations given by the concept of a tendency towards an equilibrium” [von Hayek, 1935, p. 34].

<sup>10</sup> New classicals stress “that speculative elements play a key role in business cycles” [Lucas, 1980a, p. 708].

<sup>11</sup> People work more when wages are high and work less when they are low (intertemporal substitution). – In the construction industry, for example, workers agree on arrangements which involve working in the summer and being laid off in the winter. They do this voluntarily (knowing that winters exist) following their own preferences and are not driven into unemployment by unexplainable illusions.

<sup>12</sup> This approach implies that all unemployment is “voluntary”. Austrians would probably not use this term, but would nevertheless call it “unavoidable” given the circumstances. The difference is also only semantic. The new classicals are attacked because of this view. The main thrust of their approach, however, is to show that a distinction between voluntary and involuntary unemployment is not only theoretically impossible but also cannot be settled by any evidence. Therefore – in their view – such a classification is not helpful in interpreting reality or designing optimal policy. See Lucas [1978].

notions of full employment or slack which – in their opinion – suggest that there was a *technical* reason why an economy cannot produce more at any given point of time. Thus the use of the capital stock is always optimal, given the relative prices, the effects of disturbances and so on. The Austrian explanation would not be any different.

The new classicals do not use different approaches (“compartments”) for different economic phenomena<sup>13</sup> like equilibrium theory with optimizing agents for a certain set of questions related to behavior on the micro level and “macroeconomics” with optimization absent for explaining business cycles. “... there is only one economy and therefore only one integrated economic theory” [Rothbard, 1983, p. 23]<sup>14</sup>.

### III. Can Austrians Accept “Rational” Expectations?

What von Hayek had in mind was that equilibrium theory could apparently not account for certain characteristics of business cycles: First, prices (and wages) tend to move procyclically, which is against classical theory; second, money is obviously not neutral<sup>15</sup>, which is against the idea of “unit change”. In new classical theory, this “gap” is closed by the introduction of a specific hypothesis on expectations. How do Austrians treat expectations?

On the extreme end we find the pronounced opinion by Ludwig Lachmann. According to him, we can practically say nothing about how expectations are formed, let alone think of some kind of dynamic equilibrium: “... a state of affairs in which all expectations are consistent ... is not merely an unrealistic assumption to make, it is (literally) ‘humanly impossible’” [Lachmann, 1978, p. 5]. – “Expectations must be regarded as autonomous, as autonomous as human preferences are. To be sure, they are modified by experience, but we are unable to postulate any particular mode of change” [Lachmann, 1976b, p. 129]. He stresses that expectations are a typically subjective element in human action (which is eminently Austrian) and that there is no way to find any kind of measure of how they are formed. Of course, they change over time, but what agents learn and how that new knowledge affects their expectations is beyond the scientist to explain. Further, due to their subjective nature, expectations are necessarily divergent. Lachmann mentions the “simultaneous presence of bulls and bears” at capital markets which alone shows that expectations can never converge. He also does not allow for statements about expectations in the direction of a market process, because this process itself may change over time. Needless to say, in the light of these considerations Lachmann denies the possibility of formulating any hypothesis about expectations. This apparently conflicts with the assumption of the new classicals that expectations are rational. In their models, the optimization with respect to information must necessarily follow from the general equilibrium approach to which the new classicals subscribe. The hypothesis is the consistent link to the rest of the system<sup>16</sup>. Just as there are never any unexploited profit opportunities, there can be no systematic forecast

<sup>13</sup> This is one of the criticisms Austrians make with respect to, e.g., the neoclassical synthesis.

<sup>14</sup> “... the incorporation of cyclical phenomena into the system of economic equilibrium theory, with which they are in apparent contradiction, remains the crucial problem of Trade Cycle theory” [von Hayek, 1933, p. 33].

<sup>15</sup> The role of money as the cause of business fluctuations is discussed in Section V.

<sup>16</sup> “Walrasian optimization thus implies absence of systematic error; i.e., it implies rational expectations” [Hoover, 1984, p. 70].

errors, because these can easily be corrected to reduce costs. Information is, according to Muth [1961], a valuable good and economic agents do not waste it<sup>17</sup>.

The hypothesis of rational expectations alone is not a comprehensive macroeconomic theory but a model-building principle [Lucas, 1981, p. 1]. The justification of the use of this assumption is probably most clearly stated by Lucas [1977, p. 14/15]. He describes the decision problem of an individual who “... faces *time paths* of prices at which he can trade in the present and in the future ... with uncertainty, he must draw up a contingency plan, saying how he will react to unforeseeable events”. But what do we know about his decision problem, how can an observer (the economist) understand the plan or the behavior, if he only knows that the agent’s view is “subjective”? What is the link between subjective probabilities and “reality”? If we accepted the opinion expressed by Lachmann we would certainly state the problem in a similar way, but would definitely answer that we just cannot know. Lucas clearly departs from this view: “To practice economics, we need *some* way ... of understanding *which* decision problem agents are solving”. Muth’s hypothesis served as a neat – and formally elegant – device to solve the puzzle: Subjective probability distributions coincide with the underlying model (the *objective* probabilities). Agents holding rational expectations “have fairly stable arrangements for collecting and processing information in forecasting the future in a stable way, free of systematic and easily correctable biases” [Lucas, 1977, p. 15].

This hypothesis has been very strongly put forward and was defended against all “arational” alternatives (e.g. “adaptive” expectations). Very restrictive formulations were used in formal models; for example, it is commonly assumed that agents *know* the reaction function of monetary and fiscal authorities, *adjust immediately* to changes in that function and *know* how the economy works, i.e. according to the formal model [see, for example, Sargent, Wallace, 1976]. Such rigorous models did not only offend Keynesians or monetarists, but also brought up critique from the Austrian perspective. Machlup [1983] finds that this rationality postulate would endow economic man with “superhuman abilities” and would make everyone<sup>18</sup> “miraculously agree on all diagnoses of the economic state of affairs and on all prognoses of developments induced by actions of private economic agents and public agencies” [*ibid.*, p. 175]. One may find it difficult not to accept this kind of criticism. And we cannot really escape this discussion by saying: Don’t take the assumption of rational expectations too literally. The hypothesis that all agents know *the* underlying model is a strong and ambitious one.

The new classicals do not postulate that there exists only one model known and accepted by everyone. Of course, explanations of events vary. The implication seems rigorous only to someone who writes down any particular model, be it a theoretical, abstract “toy” model (where new classicals are experts at)<sup>19</sup> or a large macroeconomic model (e.g. the Keynesian type). If someone does so he *assumes* that – given the level of

<sup>17</sup> Every contract involving expectations – be it in financial or goods markets – can be considered a “fair bet”: Nobody can *know* ex ante whether he is right, although everybody “thinks so”.

<sup>18</sup> He does not accept that all persons involved hold the same economic theory: “... buyers and sellers, lenders and borrowers, employers and workers, cabinet members and opposition leaders, finance ministers and bank governors, *Keynesian* demand managers and *Friedmanite* monetarists, *Marxian* socialists and *Hayekian* libertarians ...” [Machlup, 1983, p. 181].

<sup>19</sup> The role of this type of economic analysis is described in Section VI.

abstraction – the economy works the way his model says. Now rational expectations as a “model-building principle” would impose a specific discipline on the economist, namely, that he *should* assume that everybody knows this model since it just reflects that the economy – i.e. the economic agents – behaves the way he postulates<sup>20</sup>. Of course, he is free not to do so, but then he is not imposing rationality. The model-builder can at a certain point not avoid the decision whether or not he allows for systematic errors. The “revolution” of rational expectations did not occur as just another step of theory in a seminar room, but was a direct attack on the then dominating models<sup>21</sup> which assumed – implicitly or explicitly – arational expectations. Their policy prescriptions and especially the failure to explain the events in the 1970s [Machlup, 1983, p. 177] had indeed to be analyzed, and the new classicals offered one answer.

Therefore, if one abstracts from the ambitious formal principle and puts the assumption of rational expectations “more loosely”, one can again try to compare the arguments with non-formal Austrian theories. Here, Lucas’ remarks on his highly abstract and formal equilibrium model of business cycles may serve as a starting point: “The assumption that these unobserved [= objective] distributions are ‘known’ need not to be taken as a literal description of the way agents think of their environment. It is just a convenient way of assuming that agents use the data available to them in the best possible way” [Lucas, 1975, p. 1122]. Some Austrians try to reconcile expectations with the principle of purposeful action. Kirzner [1976] discusses the difference between von Hayek and Lachmann in their statements about what economics is supposed to achieve<sup>22</sup>. If we assume – like Austrians do – a tendency toward equilibrium (e.g. in the later phase of a business cycle), we must assume that people “gradually learn to avoid mistakes”. If we rejected this, we would “reject the claim that economics can tell us anything definite about the unintended market consequences of human action. . . . if we are to explain the unintended consequences of human action, . . . we must be able to say something about the manner in which human knowledge and human expectations undergo modifications” [*ibid.*, p. 49/50]<sup>23</sup>.

<sup>20</sup> In other words, the model-builder should not assume superior knowledge on his side or – more rigorously – should not assume that he knows more about the behavior of the people than the people who “do the behaving”. – As an example, Lucas [Klamer, 1984, p. 47] asks why some economists feel that they could write down a model about the shoe business, solve all equations and discover sizable rents without knowing anything about the industry. In this sense, the hypothesis of rational expectations does not mean a lot but rather very little “knowledge”.

<sup>21</sup> Of course, the critique is not limited to “Keynesian” macromodels. Also the – supposedly monetarist – St. Louis-model allows for systematic errors, since agents form their expectations about inflation not in the way inflation is explained in the model. This model, too, allows for a persistent trade-off between inflation and unemployment. See Scheide [1984].

<sup>22</sup> Kirzner [1976, p. 50] tries to show that the tenet of unpredictability of human knowledge “is inconsistent with the requirement that economic explanations trace unintended consequences of human action”. The difference stressed by Kirzner makes clear that it is not possible to speak of “the” Austrian theory, there is a dilemma for Austrians. It is, however, not the purpose here to go into more detail.

<sup>23</sup> Machlup [1983, p. 173] refers to his earlier publication (of 1952): “If sales expectations change without any rhyme or reason . . . without any recognizable relationship to changes in the objective data, then equilibrium analysis would indeed be of little use. . . . If we can, however, assume that the revision of sales expectations will, by and large, proceed in an orderly fashion and according to intelligible principles . . . then the general equilibrium theorist need not give up . . .”. – According to this, new classicals do not have to give up.



If we assume that agents learn from experience and are not making the same mistakes over and over again, we are getting close to the hypothesis of rational expectations. Purposeful action also implies that people learn from the market signals resulting from their action. In a sense we can view the “market” as the best possible “objective model”<sup>24</sup> and agents can process the information which is relevant for them. Rational expectations do not mean that people are endowed with superhuman abilities, but that they are able to interpret incentives and penalties given by the market in an optimal, cost-efficient way. In other words: The Austrian tenet of rational behavior still holds. If we accept this “loose” definition, we can follow O’Driscoll [1979, p. 167] stating: “If . . . rationality of expectations is taken more loosely to mean that transactors make the best use of available information, then Hayek’s transactors have rational expectations”.

Also interpreting rational expectations loosely, we can weaken Machlup’s criticism somewhat. Indeed, it is not necessary that everybody knows the model and interprets new information intelligently. The hypothesis of “efficient” financial markets, for example, is quite well established although nobody assumes that every person who happens to have bought bonds some time ago acts rationally according to the model and is acquiring and processing information all the time. For the theory to hold, it is sufficient if the top traders make efficient forecasts. If they don’t, they will soon be “out” just as any entrepreneur making consistently wrong decisions in goods markets. The hypothesis of rational expectations is also compatible with Lachmann’s observation that the change in expectations and reactions may vary over time, even if we have identical changes of events [Lachmann, 1984a, p. 78], because it tries to explain under which circumstances interpretations vary and why some “old” knowledge may become obsolete<sup>25</sup>.

#### IV. Individual Behavior and the Market Mechanism

The previous chapters dealt with two basic tenets of new classical theory, and – in spite of differences in terminology – the discussion revealed a broad common ground between the two schools so that communication between them should still be possible. We will now concentrate on more general aspects of economic theory in order to investigate Laidler’s statement on the (supposedly) individualistic method in new classical theory.

Both Austrians and new classicals severely attack Keynesian macroeconomics. However, the target of the Austrian critique seems to be macroeconomics as such. In their view, the microfoundations are not used in macroeconomics thinking. Lachmann [1978] objects any logical distinction between micro- and macroaspects<sup>26</sup>; macrovari-

<sup>24</sup> This interpretation is close to Lachmann [1978, p. 5]: “What it [= the market] does accomplish . . . is remarkable enough: it imparts to an aggregate of subjective, divergent expectations what we might call a measure of ‘social objectivity’ by striking a balance of them. It divides bulls and bears into two equal halves, thus producing a ‘balance’.” – The new classicals do not deny divergence of expectations, but they are looking for reasons why some events may make bulls less bullish and bears more bearish.

<sup>25</sup> This is one aspect of the Lucas-critique postulating that parameters may change quickly. See Lucas [1976]. A particular example will be given in the next section.

<sup>26</sup> Also see the quote from Rothbard in the second section.

ables can solely be explained by the theory of choice and the concept of market process. "However, in modern macroeconomic literature, . . . there is little awareness of this postulate. . . . the macroeconomic aggregates in these writings seem to lead a life of their own" [Lachmann, 1976a, p. 152]. So instead of explaining the aggregates with the basic tenets of economics, these economists make statements about the influence of one aggregate on the other without referring to the behavior of the individual economic agent (e.g. "aggregate demand influences real GNP").

Though the new classicals do not question macroeconomics per se, their arguments against the previously performed method are on the same line as the Austrian critique. They stress the "new language in macro" [Sargent in: Klammer, 1984] introduced by them in the 1970s, meaning that their intention is to interpret economic time series of prices and quantities as resulting from interaction of individual decisions, and that the foundation of interpreting reality is the postulate of optimizing behavior of economic agents. In post-war business cycle theory, such an approach had been – according to new classicals – simply pushed aside, and the consensus was that equilibrium theory and the logic of choice could not account for the fluctuations observed. Lucas again and again criticizes that such an attitude completely neglects the aspect of individual choice also stressed by Austrians<sup>27</sup>, and new classicals claim that it is indeed possible to give an equilibrium account of business cycles<sup>28</sup>. With respect to employment fluctuations<sup>29</sup>, Lucas' method [1981, p. 4] is as follows: "The time pattern of hours that an individual supplies to the market is something that, in a very clear sense, he *chooses*. Understanding employment fluctuations must involve, at some point, understanding how this choice is made or what combination of preference characteristics and changing opportunities gives rise to the patterns we observe. . . . it would have to explain why, given their opportunities, people *prefer* arrangements involving erratic employment patterns. Ignoring this simple point seems to me simply bad social science: an attempt to explain important aspects of human behavior without reference either to what people like or what they are capable of doing".

Now Keynesians or neoclassicals certainly do not preclude thinking about behavior<sup>30</sup>, but it seems that in their models individuals cannot act according to their choices

<sup>27</sup> " . . . praxeological economics is the structure of logical implications of the *fact* that individuals act" [Rothbard, 1976b, p. 19].

<sup>28</sup> This is, of course, not necessarily a reason to prefer new classical over Keynesian business cycle theory. One of the basic goals of the new classicals was to show that equilibrium theory *is* possible and that those models were not inferior with respect to "fitting the facts". See, for example, Lucas, Sargent [1978].

<sup>29</sup> This aspect of equilibrium theory that markets always clear in spite of the fact that unemployment can be persistently high is, of course, in the center of the counter-attack of Keynesians on new classicals. See, for example, Tobin [1980]. – Lucas [Klammer, 1984] mentions an example to clarify his position: A farmer offers ten jobs, however, one hundred workers try to find work. The wage is bid down until ninety workers say: "The hell with it". They would prefer to have gotten the job, but at the wage offered they decline. They are certainly not happy. But what is the alternative explanation? Does it help to call this "involuntary" unemployment to be cured by government intervention?

<sup>30</sup> "A terminology which precludes asking the question: 'Why do people choose to take the actions we see them taking, instead of other actions they might take instead?' precludes any serious thinking about behavior at all"[Lucas, 1978, p. 356].

or cannot optimize because they are either constrained by rigidities, suffer from illusions or are bound into contracts against their interest. Not only do markets fail to clear, there are also obvious market failures<sup>31</sup> which justify government intervention. This type of analysis which is the rationale for stabilization policy in the Keynesian paradigm<sup>32</sup> was a move away from pre-war business cycle theory, including the Austrian view<sup>33</sup>.

According to the new classicals *and* the Austrians, we must reconcile the behavior of workers also with their choice between work and leisure. Arguing about this trade-off does not involve the issues of gaps or waste [Lucas, 1978, p. 356] but illuminates how choices are made and how they vary under alternative circumstances. For example, changes in the level of unemployment insurance affect the decision to work or not to work. A severe penalty on unemployment, for example, would lead to a lower “natural rate” and might reduce it close to zero, because accepting *any* job would be better for the worker<sup>34</sup>.

Does the “rigidity of wages” not contradict the postulate of cleared markets or optimizing behavior? If we accept that the rigidity is a “fact” (“wages do not change fast enough to keep employment constant”), the explanation soon refers to institutions and “collective bargaining” [see, for example, von Mises, 1983, p. 5; Lachmann, 1987, p. 17]. Is this behavior “rational” or “purposeful”? The emergence or existence of institutions must be explained just as any other aspect of economic reality: “... conventions and institutions do not simply come out of the blue, arbitrarily imposing themselves on individual agents. On the contrary, institutions and customs are designed precisely in order to aid in matching preferences and opportunities satisfactorily” [Lucas, 1981, p. 4]. Institutions like trade unions are designed to represent the interests of workers. Whether they do that well enough or not cannot be decided unless we know how unions optimize. Obviously, they do not view their task as being to minimize unemployment at any point of time; there must be other targets (power, high wages for the majority of the employed etc.). This is not to say that economists cannot criticize existing institutions. But doing so without explaining why they are there and what they do may lead to wrong conclusions. For example, the abolishment of trade unions may lower unemployment, but will it increase welfare? If we accept the tenet of purposeful action or rational behavior, we cannot say people are making incorrect decisions<sup>35</sup>. Our

<sup>31</sup> The typical cases in Keynesian theory are the liquidity trap, the rigidity of nominal wages and the inelasticity of investment with respect to the interest rate.

<sup>32</sup> One definition of the role of stabilization policy is: “... a belief that policy could effect immediate, or very short-term, movement of the economy from an undesirable current state, *however arrived at*, to a better state” [Lucas, 1977, p. 8].

<sup>33</sup> According to Rothbard [1983], the Austrian – or von Mises’ – theory on business cycles was never really refuted but just “forgotten”.

<sup>34</sup> This is not a recommendation, also because such a policy measure would be inefficient. However, it makes clear the question of the optimal rate of unemployment compensation given the preferences of workers.

<sup>35</sup> This does not mean, however, that people do not make mistakes all the time! But we can only recognize them *afterwards*. – If we consider “collective bargaining”, the term “voluntary unemployment” may get a different meaning. If wages are kept high by unions against the will of (unemployed) workers, what can we say about preferences or involuntary unemployment? New classicals do not provide an answer. However, this is not to conclude that we need government intervention. If we want to change this situation, we should talk about changing the “rules of the game”, so that the market

first task in economics is not to say how people should behave but explain their behavior. In this sense, new classicals surely follow the same goal as Austrians: "A whole world of interests and motives is 'there', is real, and it is surely our responsibility as scientists to make it clear" [Kirzner, 1976, p. 46].

Another important aspect of both Austrian and new classical theory is: How do economic agents interpret market signals? Again, Lachmann [1984a] stresses the subjective element in the change of expectations. For example, two farmers confronted with the same event – an increase in the price of apples – may react differently: One may assume a general increase of the price level, the other may expect a relative shift of demand in favor of apple consumption. Surely both reactions are possible, but can we not say anything about under which circumstances the first or the second reaction is more likely? Lachmann's example is precisely the description of the relative-aggregate dilemma in the work of the new classicals, especially Lucas<sup>36</sup> [1977, p. 16], who describes exactly the same problem: "Now let us postulate an increase of 10 percent in today's selling price, as compared to the average of past prices. How will this hypothetical producer respond? The answer given by economic theory must be: who knows?" – However, Lucas does not stop here but evaluates his theory. If we accept that market signals are meaningful in the sense that a wrong reaction will be punished by losses, then we should say that the first interpretation in Lachmann's example (= change in the price level) will lead to wrong reactions at times when the price level is perfectly stable. Of course, one can never be sure *ex ante* what the appropriate reaction is, but purposeful agents would try to avoid *simple* mistakes. The new classicals have developed this problem of "signal extraction" further, which – for this example – roughly says that an agent under uncertainty (like Lachmann's farmer) will very likely view an increase of the price for his product as an increase of relative demand if the price level has been relatively stable in the past.

Cukierman [1982] has developed a mechanism designed precisely to describe Lachmann's related problem of interpreting the permanence of price changes. Of course, a producer would not alter his production plans very much if he observed a change of prices for his product in just one period<sup>37</sup>. He must learn if this change is permanent or not. But he can only know after more observations have become available<sup>38</sup>.

What new classicals have tried is to combine the problem of uncertainty about the correct interpretation with the axiom of learning from past mistakes (or purposeful action). That they have done this in a rigorous way (of mathematical elegance) and have called some things "objective" which – according to Austrian thinking – are not, may be the only difference between the two schools concerning this question of processing market signals. They nevertheless have the same approach in interpreting behavior.

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can work according to preferences of individuals. Such a recommendation would be given by Austrians *and* new classicals.

<sup>36</sup> See, for example, Lucas [1972; 1973; 1975] in his models on "isolated islands", and Barro [1976].

<sup>37</sup> Of course, an immediate shift of production may be the correct thing to do, but the risk is high that the change is only transitory. This dilemma plays an important role in the analysis of business cycles (see next section).

<sup>38</sup> In a sense, Cukierman's model can be viewed as a modern, formal version of von Hayek's process of discovery [von Hayek, 1968].

## V. Nature and Causes of Business Cycles and the Transmission Mechanism

Both Austrian and new classical theory stress that business cycles are not the result of market failure but rather the natural consequence of outside disturbances. Economic agents are faced with market signals, and they “react as they always would and must” [Rothbard, 1983, p. 30] although *after the fact* they realize that they made a mistake. How come that they make these mistakes over and over again, so that we experience *recurrent* business cycles? In both schools, the key to explaining this is some kind of shortage of information of what market signals really mean<sup>39</sup>.

The market economy is subject to outside disturbances or shocks, and both Austrians and new classicals identify changes in money as the most relevant cause. Von Hayek [1933] discusses various other explanations, but they all have flaws compared to “... the monetary approach to Trade Cycle theory.” – “... the automatic adjustment of supply and demand can only be disturbed when money is introduced into the economic system. ... Every explanation of the Trade Cycle which uses the methods of economic disturbances ... must, therefore, start by considering the influence which emanate from the use of money” [*ibid.*, pp. 101/102]<sup>40</sup>. The new classicals, usually referred to as “also” being monetarists, rely on the work by Friedman/Schwartz on the history of general price movements and changes in the quantity of money [Lucas, 1977, p. 24]. While in earlier Austrian work it is stressed that these changes are brought about by credit expansion of commercial banks, it is clear that private banks do not arbitrarily produce recurrent ups and downs. They are also part of the private market economy which is – according to the Austrian view – inherently stable. The source of the disturbance is the intervention of the government into the free economy by the creation of more central bank money [Rothbard, 1983, p. 28].

The starting point of Austrian theory is the decline of the interest rate after an increase of the money supply. “The” interest rate may be a “clumsy and misleading shorthand phrase covering this vast intricate web of interrelationships” [O’Driscoll, Shenoy, 1976, p. 200]. This relative price reflects the time-preferences of all individual agents to save and invest, and it determines the structure of the production process. Wicksell’s theory of the “natural rate of interest” was incorporated into the theory of production and business cycles by von Mises. If there is a disturbance leading to a decline of interest rates below the natural rate, entrepreneurs are led to believe that it is more profitable to change the production structure in favor of more “capitalistic” production: More production goods are demanded and labor is attracted by higher wages from the later stages of production (near the final consumption goods). Entrepreneurs take advantage of this change in relative prices, they are led by this increase of profitability into new investment projects. Thus the business cycle is driven by changes in *relative prices* and not the *price level*. Money is injected unevenly into the system, banks increase their loans mainly to firms. Thus consumer demand lags behind. Austrians stress that their theory differs from the “naive quantity theory” in the sense that money has an impact on prices *and* production even if the general price level is not affected<sup>41</sup>.

<sup>39</sup> Otherwise we *should* speak of market failure.

<sup>40</sup> “Ludwig von Mises’ ... pioneering contribution identified the lack of coordination between individual expectations and the supply of money and credit as a prime cause of economic disturbance” [Dolan, 1976, p. 11].

<sup>41</sup> Von Hayek [1935, p. 7] describes “very erroneous opinions” behind the idea that “changes of relative prices and changes in the volume of production are consequent upon changes in the price

In this respect, the transmission mechanism in the new classical theory differs from the Austrian view: Changes in the price level *are* the driving force of the cycle. However, the level of production changes anyway because the nature of price changes is not immediately understood by economic agents. In Lucas' work, investors are scattered over the whole economy on "isolated islands" and do not receive current information about the overall state of the economy. Therefore, if they observe an increase in the price for their product, they have to solve the puzzle of interpreting this signal correctly. Since they can never be sure whether the price change is due to a relative shift of demand or an increase of total nominal demand ("relative-aggregate confusion")<sup>42</sup>, they use a certain mechanism (problem of signal extraction) to find an average between the two extremes. Usually they will increase their production after they observe the rise in the price for their product. If this is an overall phenomenon in the economy – i.e. total demand rises due to an expansion of the money supply –, we will get the same result as in the Austrian model: People invest more because they believe that their profit opportunities have increased<sup>43</sup>, relative price movements induce fluctuations in investment and employment. However, the causal link is different. Lucas does not take changes in the interest rate as a starting point for two reasons. The first is empirical: "Given the cyclical amplitude of interest rates, the investment-interest elasticity needed to account for the observed amplitude in investment is *much* too high to be consistent with other evidence" [Lucas, 1977, p. 23]. However, in Austrian theory the change in interest rates leads to the changes of relative prices which Lucas takes as the cause for changes in production. – The second reason is "theoretical": In his models [e.g. Lucas, 1975] the interest rate is excluded because it would reveal information about the overall economy. If it was observed, agents would have no interpretation problem, there would be no confusion<sup>44</sup>. An alternative, which includes the interest-rate mechanism, is the approach by Brunner *et al.* [1983] who stress different problems of interpretation, one of which being the difficulty to immediately identify the cause of the change in interest rates (which may not be monetary).

However, there still remains an apparent difference between explanations: For Austrians, it is the actual change of *relative prices* which leads to an increase of production, whereas in new classical theory it is the changes in the *price level* – although they are interpreted "wrongly" – which drive production<sup>45</sup>. The latter seems to be subject to von Hayek's critique on the "erroneous belief" of the quantity theorists that changes in production can only come about when there are changes in the price level. If

level, and that money affects individual prices only by means of its influence on the general price level ...".

<sup>42</sup> Only under very extreme circumstances – permanently stable price level or perfectly constant relative prices – would the decision be trivial.

<sup>43</sup> " 'Austrian' or 'monetary-over-investment' business cycle theory ... was based on the same idea of mistaken investment decisions triggered by spurious price signals" [Lucas, 1977, p. 23].

<sup>44</sup> This very strict assumption about the informational difficulties is certainly one of the weak points of new classical theory. It applies also to the ignorance of agents concerning commonly published data about the money supply or the price level. Barro, one of the exponents of this school, calls the assumption *ad hoc*, which it in fact is [Barro, 1981]. – However, for a defense of this position, see Lucas [1977, p. 23].

<sup>45</sup> "... we have accounted for the pattern of co-movements among real variables over the cycles as responses to general price movements ..." [Lucas, 1977, p. 24].

von Hayek means that also “one-shot” changes in the quality of money, which will have no persistent effects on the inflation rate, can lead to changes in relative prices, the new classicals would agree. However, persistent fluctuations like the business cycles we observe are not due to one-time increases or decreases of money [Rothbard, 1983], but are connected with equally persistent ups and downs of the price level (or the inflation rate). So it seems that this is not a difference at all between Austrian and new classical theory. Von Hayek himself in his later work speaks of some aspects of business cycles in the same language as monetarists, for example, about the stimulative effects of inflation [von Hayek, 1983, and also Rothbard, 1983].

The end of the boom is inevitable and comes about “automatically” as soon as mistakes about the interpretation of price changes are recognized (new classicals) or – in the Austrian version – as soon as the demand of consumers picks up and leads to a process in the course of which the proportions of relative prices and the distribution of production valid before the increase in the quantity of money started will be established again<sup>46</sup>. “The projects which owe their existence to the fact that they once appeared ‘profitable’ in the artificial conditions created on the market by the extension of credit and the increase in prices which resulted from it, have ceased to be ‘profitable’. The capital invested in these enterprises is lost to the extent that it is locked in” [von Mises, 1983, p. 4]<sup>47</sup>. – “. . . there is a downturn automatically built into this expansion of capacity. When recognition of general inflation does occur, investment will have to become less than normal for a time while capacity readjusts downward” [Lucas, 1977, p. 2].

How long this downturn lasts and how severe it will be after monetary expansion has stopped depends on the time it needs “until prices and wages adapt themselves to the quantity of money in circulation” [von Mises, 1983, p. 5]. Although it seems clear that “unemployment must follow inflation” (von Hayek), the return to the normal situation must not necessarily imply a severe depression<sup>48</sup> or “crash” [Lucas, 1977, p. 22] in the sense that overall output declines over a longer period of time<sup>49</sup>. However, as long as prices or wages are not allowed to fall (what they should)<sup>50</sup>, unemployment of capital and labor is going to persist.

The problem still to be analyzed is whether Austrians and new classicals treat the role of expectations and errors differently. If business cycles are recurrent (Lucas; Rothbard), how come that there are again and again so massive clusters of error? Would repeated identical changes in the quantity of money always lead to the same timing and amplitude of cycles? The answer of new classicals would certainly be “No!”. They state

<sup>46</sup> The “IS-LM shift of the Keynesian paradigm” is not permanent in either Austrian or new classical theory.

<sup>47</sup> Monetary expansion implies “forced” saving. Therefore, the process must be reversed. A *permanent* shift in the production structure can only be brought about by “voluntary” saving. See von Hayek [1935].

<sup>48</sup> Austrians used this term before the economic profession turned to define it as “recession” or “downturn”. “We live in a world of euphemism” [Rothbard, 1983, p. 21].

<sup>49</sup> New classicals do not rely on mechanisms like waves of optimism or pessimism to explain booms or busts.

<sup>50</sup> The so-called rigidity of wages is an important factor, trade unions prolong the downturn [von Mises, 1983].

– also in their analysis of the change in parameters due to changes in policy regimes<sup>51</sup> – that in an inflationary environment, a one percent increase of the quantity of money would have a smaller effect on production than under stable conditions, because the surprise would be smaller. We cannot find statements by Austrians on this point. However, both approaches could converge again if we focus on the effect of money on interest rates: If monetary policy succeeds in lowering interest rates, it creates what new classicals call a “shock”. In such a case, the transmission mechanism would work in the ways described above. The crucial question is only: *Can* the central bank always affect interest rates in a certain way? Whether there is a difference in thinking cannot be settled because Austrian business cycle theory is not explicit enough on this matter. Of course, Austrians stress that there are no constants, so the Lucas-critique is well taken. However, it seems that they assume monetary policy to be systematic, since policymakers try to achieve certain goals which are in their own interest [O’Driscoll, 1979]. However, in the new classical paradigm such a policy would – according to their definition of “systematic” – be ineffective.

The long-run consequences of the cyclical changes in the money supply are not explicitly dealt with in new classical models. The neutrality of money holds, although in the short run money is not neutral<sup>52</sup>. We can assume that there are distortions which imply a lower level of welfare after the ups and downs of the money supply have worked themselves through the system<sup>53</sup>. Business cycles involve costs, and inflation leads to severe dislocations [Sargent, 1983a]. As for Austrians, there are hardly any statements on this matter; this is surprising in the light of their theory that persistent depressions must follow booms. Machlup [1983, p. 117] states that there was a consensus that monetary policy does not affect the level of output in the longer run<sup>54</sup>. But Rothbard [1983] and also von Hayek [1983] stress the negative long-run effects due to the distortions of the signalling function of the price system. Output would be higher if there were no cycles.

To summarize, both Austrians and new classicals would disapprove of “... the historical notion of Lord Keynes: That no ‘classical economists’ had a theory of the business cycle until Keynes came along in 1936. There *was* a theory of the depression; it was in the classical economic tradition ...” [Rothbard, 1983, p. 33]. Both theories can account for the main characteristics of business cycles (or “puzzles”), which are described by Rothbard [1983, p. 32]<sup>55</sup>: “The repeated and recurrent nature of the cycle, the massive cluster of entrepreneurial error, the far greater intensity of the boom and

<sup>51</sup> This is the substance of the Lucas-critique. See Lucas [1976].

<sup>52</sup> Neutrality of money can be defined as equal changes of the money supply and the price level. Von Hayek [1935], however, stresses the non-neutrality, which means that changes in money can affect relative prices even if the price level remains constant.

<sup>53</sup> Friedman [1977] mentions several reasons for the secular increase of the natural rate of unemployment.

<sup>54</sup> “That real output in the long run is independent of a one-time increase in the quantity of money, or even of an increase in the annual rate of money creation, is probably one of the least disputed propositions in economics” [Machlup, 1983, p. 177]. – If this means, that real output will be the same no matter whether we have zero or one hundred percent inflation, Machlup defines a neutrality which is, in my opinion, not accepted by either new classicals (or, for this matter, monetarists in general) or Austrians!

<sup>55</sup> Of course, he only refers to the quality of Austrian business cycle theory.



bust in the producers' goods industries"<sup>56</sup>. The differences lie in the propagation mechanism and the assumption about the decision problem of economic agents. Also, the Austrians stress the production structure and incorporate capital theory into business cycle analysis. The common feature is – especially in contrast to the Keynesian paradigm – that cycles are due to government intervention which leads economic agents into decisions which are mistakes. However, they always act rationally and they learn about errors only *afterwards*. In the absence of such shocks or disturbances, the market economy would develop in a fairly stable way, there is no inherent tendency for anything like business cycles.

## VI. Formal and Empirical Work

For new classicals, an important instrument for clarification and understanding is the construction of abstract, formal models. Of course, this is a “modern” development in economic theory and – as far as mathematical models are concerned – probably not a substantial part of Austrian methodology. However, von Hayek's model of the production structure – the diagrammatic exposition with triangles [see von Hayek, 1935] – is abstract as well, and he also uses mathematical expressions for his model. It is also unrealistic, but it helps to focus on the main mechanisms of business cycles. Von Hayek stresses the deductive method of theory; his models are appropriate even if we cannot observe the described effects: “. . . it should be possible . . . to describe deductively, as a necessary effect of the disturbance – quite apart from their observed occurrence – all the deviations in the course of economic events conditioned by this dislocation” [von Hayek, 1933, p. 140]. New classicals sometimes go even further in their level of abstraction, especially Lucas [1972]. These “toy-models” [Lucas 1981, p. 9] cannot be dispensed with. The idea is that these models represent an *analogue* system or economy which help to understand business cycles. They can be used to “make” business cycles<sup>57</sup>, and they are “realistic” in the sense that they can mimic phenomena of the real world. To derive a model, one must resort to economic theory, which – according to Lucas – consists of a set of instructions derived from the basic axioms (technology, preferences, behavior, competition etc.). If the typical disturbances (in the view of the new classicals<sup>58</sup> and the Austrians: changes in money supply) are imposed on the system and the model produces typical movements also observed during business cycles, one gets more insight in *understanding* cycles than from the estimation of stochastic difference equations [Lucas, 1980a]<sup>59</sup>. The advantage of such (equilibrium) models – without free parameters (see Section II) – is that one can experiment with them without imposing

<sup>56</sup> Lucas [1977, p. 9] mentions additional regularities, for example, the procyclical behavior of prices, monetary aggregates and velocity measures.

<sup>57</sup> Lucas [1981, p. 8] mentions that he always found the Friedman-Phelps idea of a “natural rate” attractive, but the case for it would have been more convincing if there had been a model, an “artificial, model society”, in which this rate was the natural outcome. “. . . I believe that one who claims to understand the principles of flight can reasonably be expected to be able to make a flying machine, and that understanding business cycles means to make them too, in roughly the same sense”.

<sup>58</sup> “What are the other candidates?” [Lucas, 1981, p. 16].

<sup>59</sup> The “success” of some of those “relatively atheoretical models” could lead to the fatal conclusion “. . . why do we need the theory?” [Lucas, 1981, p. 11].

severe costs on the society, because it provides a good enough imitation of how the economy works<sup>60</sup>. If they do so – as new classicals pretend –, the critique that these models are unrealistic and “do not describe the world we happen to live in” (Tobin) becomes pointless.

The common feature of the “unrealistic” models of the Austrian and the new classical type is that they require the strict discipline of purposeful action and rationality. The difference in method stems from the fact that the classicals use new and – supposedly – more modern constructions, e.g. the formulation of intertemporal substitution, the contingent claim framework and the methods of signal extraction.

What is gained by using mathematical models? In their intention to use rigorous formulations, new classicals certainly do not claim to possess more knowledge, and they are surely aware that they strongly simplify matters. They stress that these models are toys, and although being highly abstract, they can reveal those elements of reality which we are interested in at the moment. In these simplistic versions, new classical models certainly are more open to criticism<sup>61</sup>. Of course, we also have to remember what the background for the emergence of their theory was. In the 1970s the consensus among economists was that reality could well enough be represented by the then existing macroeconomic, formal models. The new theory had to be put against those, and new classicals tried to stress what the differences were if someone formulated alternative models with strong adherence to microeconomic principles. Which parameters are interesting, and what do we know about their size and changes? For example, the power of the Lucas-critique [Lucas, 1977] would probably also have come through by pure rhetoric, but had to be formulated in the commonly used language. The Austrian message that empirical work is not possible because “there are no constants” was well-known; but it did apparently not influence the thinking. It has not prevented at all the consensus that we were able to keep unemployment permanently low by allowing for a little more inflation. It had to be shown that it was spurious to think that the relevant parameters were constant. The hope was, of course, that the divergent hypotheses could be explicitly stated and then empirical evidence could be collected to decide on the matter.

The assumption that there is anything like that to be expected from empirical work is not accepted by Austrians. In his early work, von Hayek does not seem to be very pessimistic: “Empirical studies . . . can, at best, afford merely a verification of existing theories . . .” [1933, p. 27]<sup>62</sup>. An articulate case against empirical work was made when macroeconomics had become a new branch and “the profession was turning toward a mindless and spuriously quantitative empiricism . . . and was entranced by the ‘hydraulics’ of dubious models constructed from crude aggregate components” [Kirzner, 1982, p. 1]. Referring to von Mises’ work (“There is no such thing as quantitative economics”), Dolan summarizes – from the Austrian view – the reasons for rejecting econometrics as a tool of economic theory: “First, since the axioms from which economic laws are deduced are taken to be apodictically true (barring logical errors in the deductive

<sup>60</sup> Lucas [1980a] defines this possibility as one contributing to the positive marginal product of economics.

<sup>61</sup> Those who don’t like the formal models like Lucas [1972] “Expectations and the Neutrality of Money” can find in his “Understanding Business Cycles” [1977] the same ideas in “plain English”.

<sup>62</sup> Of course, he denies the possibility that such methods could provide new insight into *theory*.

process), the theories themselves must also be true and consequently cannot and need not be subjected to falsification by statistical methods. Second, Austrian theories are formulated in terms of action, and action . . . contains a counterfactual element, which is in principle not subject to direct observation or confirmation" [Dolan, 1976, p. 7].

It cannot be discussed here whether the Austrian critique is overdone. But we can ask: What is gained by empirical work? For example, the proposition of efficient financial markets can easily be formulated in mathematical terms. The empirical tests seem to "support" the theory. Could we not have arrived at this without empirical work? What have we learned? Had the tests been negative, would anybody claim that he could make safe gains on capital or exchange markets? Did these tests persuade anybody to change his mind? If they were performed for other (labor, goods) markets and did not support the hypothesis, some would conclude that there may be some market failure, others would deny that. One can be sceptical whether econometric tests can really settle any controversial matter. Confronted with a certain result not fitting his paradigm an economist of a different "school" would cry out "I don't believe it". Tobin, for example, was certainly not persuaded by the results of tests performed by Lucas or Sargent. In fact, the counterattack often ran along the lines that the results of their models did not fit the facts *he* was thinking of. So what is it all for? All in all it seems that the Austrians' radical refutation differs from the "milder" scepticism of new classicals, although both strongly oppose Keynesian macroeconometrics. However, the main thrust of new classicals comes from the theory of optimizing agents, not from "knowledge" based on empirical work<sup>63</sup>.

## VII. Policy Recommendations and Historical Events

In contrast to Keynesian policy advice, neither Austrian nor new classical prescriptions for economic policy are based on empirical "evidence" but rather on theoretical reasoning. Both would favor general rules for the government and deny any scope for intervention. For new classicals, assessing the likely consequences of ad-hoc policy measures "... in anything like a scientific way is clearly well beyond the current limits of our discipline" [Lucas, 1980b, p. 209]<sup>64</sup>. So their intention is to formulate rules for government policy.

Since in both theories changes in the quantity of money are the fundamental cause of business cycles "... the only means to get rid of cyclical fluctuations ..." would be "... to keep the total amount of bank deposits entirely stable ..." [von Hayek, 1933, p. 190]. However, von Hayek not only states the practical problem of implementation, but also fears that in a growing economy, a constant quantity of money may hamper economic development because it would tend to keep the rate of interest above the natural rate. On the other hand, he would deny that trying to keep the price level constant would solve all problems<sup>65</sup>. However, such a policy would certainly prevent *persistent* ups and

<sup>63</sup> There may be differences in the new classical camp. Sargent, for one, hopes that the question of the optimal policy regime can also be tackled by empirical methods. However, he is very modest in his claims when he calls empirical work to be never finished but to be a "journey of discovery" [Klamer, 1984].

<sup>64</sup> In his critique of Keynesian macromodels, Lucas [1975, p. 1114] asks "who knows how 'illusions' will be affected by an investment tax credit?"

<sup>65</sup> This is due to von Hayek's rejection of the quantity theory of money as explaining business

downs (see Section V). New classicals would agree: "... *some* real variability would remain even under the smoothest monetary and fiscal policies" [Lucas, 1977, p. 25]. In general, it seems that von Hayek would view Friedman's k-percent rule as the best of all possible prescriptions under present institutional arrangements<sup>66</sup>. His caveats [1975, p. 28] that the correct definition of money is crucial and that precaution should be taken to avoid severe crises or panics would not be disputed by any monetarist.

If the recommendations seem to be clear for normal times, what should monetary policy do in periods of recession? "... what the government should do, according to the Misesian analysis of the depression, is absolutely nothing" [Rothbard, 1983, p. 32]. This follows from the analysis that depressions are inevitable after inflationary booms. Any "pumppriming" would be counterproductive<sup>67</sup> because "... the depression is the process by which the market economy adjusts, throws off the excesses and distortions of the previous inflationary boom, and reestablished a sound economic condition" [*ibid*, p. 27]. Since new classical theory also implies an automatic tendency toward the (full-information) equilibrium path, the policy recommendations derived from it are the same. Any type of intervention would only cloud the picture in the process of adjustment<sup>68</sup>. Thus the new classical explanation of the stagflation in the 1970s is identical to the Austrian: More and more it was tried to overcome recessions by more stimulation through monetary and fiscal policy, as suggested by Keynesian advisors. Sooner or later the acceleration of inflation had to lose the stimulating effects, the stagnation or even the decline of production was the inevitable consequence. Austrians – more explicit than new classicals on this point – would diagnose a shortage of capital in the sense that the whole capital stock needs restructuring after the long lasting distortions produced by inflationary policy.

In the debate on the appropriate way to stop inflation, both Austrians and new classicals vote for drastic actions instead of gradualism, but they do so for different reasons and with different arguments. For Austrians, any inflation leads to distortions, and the sooner further dislocations are stopped the better. "It is true that this will, inevitably, bring the inflationary boom abruptly to an end, and commence the inevitable

cycles. However, he contends that "... it would be one of the worst things which would befall us if the general public should ever again cease to believe in the elementary propositions of the quantity theory" [von Hayek, 1933, p. 3].

<sup>66</sup> In general, though, von Hayek prefers competition among different moneys issued by private banks.

<sup>67</sup> "... even though it might overcome the difficulties of the moment, it will certainly produce a worse situation in a not too distant future" [von Mises, 1983, p. 6]. It is, however, likely that Austrians would not vote for a decline of the quantity of money. During the Great Depression, it did indeed decline over an extended period of time, which might not have been known by the general public at that time. So von Hayek would probably have agreed that such a deflation should have been avoided. In June 1932, he writes [von Hayek, 1933, p. 19]: "There can, of course, be little doubt that at the present time, a deflationary process is going on and that an indefinite continuation of that deflation would do inestimable harm. But this does not, by any means, necessarily mean ... that we could overcome these difficulties ... by forcing more money into circulation".

<sup>68</sup> This is also true for the reaction toward "real shocks"; there is no active role for monetary policy for overcoming such situations. See the discussion in Scheide [1984]. – On the occasion of the second oil price increase, von Hayek [1980] writes: "As the price of gasoline goes up, either you have to buy less gasoline or buy less of everything else. If you look to the government for help for the time being, it makes you not see what your real problem is".

recession or depression. But the longer the government waits for this, the worse the necessary readjustments will have to be” [Rothbard, 1983, p. 32]. Thus doing it quickly is less costly than the strategy of gradualism favored by many monetarists<sup>69</sup>. For new classicals, the cost of disinflation will be minimal if there is a credible, clear-cut change in monetary and fiscal policy. Their models imply that the behavioral parameters can change relatively quickly, i.e. “inflationary expectations” can be reduced rapidly if it is made clear that the policy regime changes<sup>70</sup>. This hypothesis holds not only for the stagflation experience<sup>71</sup>, but also for periods in which inflations were stopped abruptly. Sargent [1983a; 1983b] describes various episodes in economic history when inflation was brought down *within months* without a deep or prolonged depression. He refers not only to the hyperinflations in the 1920s, but also to moderate inflations (“Poincaré miracle” in France). The common element in all these “success stories” was the visible change to a noninflationary regime, including not only “tight” monetary policies but also the commitment of a balanced government budget. These episodes sharply contrast with present strategies in industrial countries<sup>72</sup>. All this is not to say that new classicals would argue that there is no recession after disinflation. Of course, real adjustments have to be made [Sargent, 1983a]; however, the process of what is usually called “stabilization crisis” – namely the “unexpected” decline of the inflation rate – can be avoided.

In their insistence that policy *regimes* are important, new classicals can explain why some depressions are milder than others. The reduction of output due to stabilization is high if credibility of the policy change is low. Austrians are not explicit on this, and we can assume that they would not state such a rigorous relationship. The Great Depression is still viewed as being caused by the inflationary boom in the late 1920s [Rothbard, 1983]. However, other periods were much more inflationary but ended much “milder”. The length or depth of the – in the Austrian view – inevitable depressions is not qualified.

### VIII. Conclusions

To compare new classical and Austrian theory seems legitimate only with respect to a particular aspect of economic reality, namely business cycles. In the past century, Austrians have covered so many fields of economic theory that the achievements of new

<sup>69</sup> If asked, Keynesians would also prefer gradualism; however, given their calculations about tremendous output losses under disinflation, they vote for other measures to reduce inflation, e.g. incomes policy. This is also due to their assumption that the costs of inflation are minor compared to the loss associated with fighting it. For a critical discussion, see Scheide [1984].

<sup>70</sup> Thus they refute the assumption that there is an inherent sluggishness of expectations, as postulated not only by Keynesians but also by some monetarists.

<sup>71</sup> A model by Brunner *et al.* [1980] deals with the effects of shocks on real variables like unemployment. If, for example, workers assume that the oil price increase is not permanent, they are better off not accepting jobs with low wages. However, if they are wrong, this decision will lengthen the period of stagnation. Note that this “rigidity of wages” is not institutional but voluntary, and it proves wrong only *after the fact*.

<sup>72</sup> Their argument against gradualism is – similar to von Hayek’s – that it might take too long to be sustainable and always bears the risk of leading to a U-turn. Thus inflationary expectations and interest rates are kept high which has a depressing effect on the economy.

classicals are comparatively small. The discussions of both approaches showed that it would not be appropriate to claim that Austrians have developed the *only* theory of business cycles which refers to individual behavior and choice. New classicals have rediscovered this approach and used many of the tenets for their explanation. This is not to say that new classical theory completely follows Austrian traditions. But many of the differences appear to be small or are only semantic in character.

For example, the conceptual differences on matters of the equilibrium concept should not be overestimated. Both approaches imply that agents always make the best of the situations they face. They can only know after the fact whether their reaction toward market signals was a mistake or not. The most obvious departure from the Austrian view seems to be the hypothesis of rational expectations. To an Austrian, there cannot be anything objective about learning or knowledge of individuals. However, if we do not take this hypothesis literally we could say that it is not strongly at variance with basic views of Austrians on rational behavior and purposeful action.

Both theories can explain the characteristic features of business cycles. The main cause is the disturbance from monetary policy. The shock works its way through the system by changing actual or perceived relative prices. For Austrians, changes in the interest rate are essential, and they evaluate how the production structure is affected. For new classicals, business cycles are commonly associated with movements of the *price level*, which are, however, not immediately recognized by investors. Therefore, new classicals are not “naive quantity theorists”. Further, both approaches suppose that there is an inherent tendency for the expansion to come to an end; also, the (inevitable) recession will be overcome “automatically”.

Because of their views on the nature of business cycles, both Austrians and new classicals put forward the most forceful arguments of the economics profession against intervention by governments. Some of the new classical models are certainly much more formal and more abstract than any of the Austrian “models”; but this is not a crucial difference, because new classicals do not rely on them. Nor do they support their case with spurious “knowledge” or empirical “evidence”. Their message comes through most convincingly in plain English. True, the representatives of both schools treat their opponents quite roughly. And they are not always modest with respect to their claims – Austrians in particular, for they speak of having the *correct* theory. But both would agree that although we cannot know reality, we *can* say a lot about it if we rely on our knowledge of behavior and interaction.

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