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# Why does Gresham's Law rule in Macroeconomics?<sup>1</sup>

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## **Introduction.**

Chick (1983) asked in the preface to her masterpiece *Macroeconomics after Keynes* the challenging question, why is Gresham's Law working within macroeconomic theory?

*"How can it be that 'in macroeconomics a very good theory (of Keynes) has been superseded by much more limited ones'"* to use Chick's carefully chosen words back in the early 1980s.

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<sup>1</sup> The original idea developed in this paper go back to 2001, where my rereading of Victoria Chick, *Macroeconomics after Keynes* made it clear to me, that mainstream macroeconomic theory has lost its ambition of explaining reality. A development which even has accelerated up until the actual economic crisis unfolded in 2008. Anyway, I wrote my book *macroeconomic methodology- a post-Keynesian perspective* with the inspiration from my rereading of and many conversation with Victoria Chick. Hence, the paper draws on ideas from this work which is presented more elaborate in the book.

One can understand that bad money drives out good money, but why the same process should go on within macroeconomics is, to me, not straight forward - because, it least at the surface, there are no good reasons why a good theory should be hoarded away from public use: ideas are in principle public, not private, goods.

Without exaggeration one may conclude, that Chick's observation more than 25 years ago is still valid. The discrepancy between mainstream macroeconomics, as we know it from conventional textbooks, and the understanding of reality seems even to have enlarged.

If we allow ourselves to consider the macroeconomic contribution by Keynes in the 1930s as a serious attempt to understand what happened in reality, I think, it is fair to put forward the hypothesis, that macroeconomic understanding with an empirical underpinning has been on a decline ever since. Off course, there are many nuances, which should not just be swept under the carpet. My main frame of reference is the most popular introductory textbooks and – perhaps even more important – the kinds of policy advices which mainstream economists deliver to the political debate. Within that perspective I find that Gresham's Law has worked, because macroeconomic textbook models do not have the intention of explaining the real world, and policy advices are kept within a neoclassical, general equilibrium methodology.

### ***Walras' general equilibrium model – the framework of neoclassical (macro)economics***

This market economic system was set into mathematical formulae by Frenchman Léon Walras in 1874. He linked the individual markets together by leveraging the notion that demand in one market must presuppose supply on at least one other market. The typical example is that households which demand some goods simultaneously must supply labour to be able to finance the purchase. If there is an excess demand within one market, then according to Walras's logic there has to be a similar excess supply on another market. If we use as an example an agricultural society, the excess demand for corn will make the price of corn rise, reducing the purchasing power of the money supply and thus reduce the excess supply of (real) money. In the industrialised society, a rise in consumer prices will erode the purchasing power of money wages. This adjustment of purchasing power via the change in the real value of money and of the real wages of labour will re-establish equilibrium on both the goods and labour markets; for if there were only two markets, then equilibrium on the one (net excess demand = zero) means equilibrium on the other (net excess supply = zero). Walras generalised this logical implication to include all ('n') markets. Regardless of the fact

that a surplus of demand could be spread over numerous markets, it would still hold true that there must be an aggregated surplus of supply of exactly the same magnitude on the other markets, as the market actors surely must finance their planned purchases. For Walras, the significant result was that, by adding some further assumptions about the mathematical formulation of the equations, he could demonstrate that a price vector existed (meaning could be calculated), including the prices on all markets. This price vector contained the solution to the mathematically formulated system. The solution ensured that excess demand and supply could be nullified on every market. This mathematical solution is characterised as a general equilibrium, in that there are no private economic incentives to change the behaviour of firms and households, while at the same time ensures an overarching macroeconomic balance: equilibrium of the public budgets, the balance of payments, full employment and no inflation.

### ***The Existence of General Equilibrium?***

The importance of this ‘proof’ of *existence of general equilibrium in a well-behaved market system* can hardly be overestimated in the history of economic theory. It constitutes the axiomatic framework in which neoclassic macroeconomic theory has since been developed. There is a straight theoretical-historical line from Walras’s original equations to the more refined, mathematically formulated Arrow-Debreu model from the 1950’s, which could be used specifically for uncovering the conditions for the existence of an even more general equilibrium, which was broadened to include the formation of prices of future economic transactions, in correspondence with actors’ expanded planning horizon and expectations with regard to demand and supply.

Parallel to the mathematical analysis of this idealised market system contained in the Arrow-Debreu model, the neoclassical school developed more pragmatic macroeconomic models for use in policy analysis. All share in common a belief that the market economic system has a general equilibrium solution that market forces by themselves (*via* perfect competition) are able to establish. Neoclassical (macroeconomic) theory of the post-war period has as a shared feature that a general equilibrium exists and furthermore is characterised by full resource utilisation and macroeconomic balance, and is a relevant tool for understanding how a modern market-based economic system functions. This methodological frame has dictated the neoclassical school’s macroeconomic conclusions and thereby its policy recommendations.

## Can general equilibrium be realised?

One thing is the logical existence of a solution to a mathematical model, quite another thing is to analyse the requirements of obtaining such an equilibrium, if the (macro)economic system happens to start somewhere outside general equilibrium. In other words, which adjustment mechanisms can be assumed to function without prior equilibrium?

One example is the Walras-tatonnement process, where excess supply and demand functions in the different markets through a trial and error process are reduced and in the end become zero. If all actors had the same information, which is the case when perfect competition is prevailing, then this tatonnement process is assumed to converge to a general equilibrium. The crucial assumption is that when agents know the  $n-1$  (correct) equilibrium prices, and if the excess demand functions are 'well-behaved', then the tatonnement process (under ideal conditions, including the absence of transaction costs, *etc.*) will establish equilibrium in the  $n^{\text{th}}$  market, whereby general equilibrium is ensured. Furthermore, this general equilibrium was assumed to correspond to the solution of the mathematical system of market excess equations, where the sum of net excess demand functions adds to zero. This market system condition was at a later stage given the name of 'Walras' law' expressing that whenever  $n-1$  markets were in equilibrium, then the  $n^{\text{th}}$  market would also, by definition, be in equilibrium, (Hansen, 1970).<sup>2</sup>

The natural starting point for a more realistic market analysis is, though, as mentioned, a situation where imbalances persist in multiple markets. The price information acquired by actors is essentially plagued by imbalance and has a much more random nature, as there is no established theory for the creation of prices on markets which are out of balance. This means that the equilibrium prices, which the 'existence-vector' uses as information conditions, are unknown until equilibrium has been realised! Sonnenschein (1972) has shown that given the lack of *perfect information* concerning correct prices out of general equilibrium, one cannot conclude that a smooth-working tatonnement process based on excess demand and supply functions exists outside of equilibrium. The prices – namely those concerned with future transactions – which actors perceive as a basis for their

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<sup>2</sup> This ambivalence with regard to the outcome of the adjustment process made the Arrow-Debreu model solely to concentrate on the existence and characteristics of the equilibrium solution.

economic behaviour, will not be uniform; rather, they are dependent on the price signals sent by the market participants at large and the individual formation of expectations. Without general equilibrium, the market participants are groping in the dark; they have no commonly known general equilibrium price vector to which they can adjust their supply and demand. This means that if the economic system is not resting at general equilibrium, then it is theoretically undetermined if they ever will reach it; in fact, it would be a mere coincidence if the market economy subsequently moved in the direction of general equilibrium. It can therefore not in any case be taken for granted that within a Walrasian model an automatic adjustment to general equilibrium – which for the actors is unknown – will ever occur.

In an attempt to overcome this lack of information, a group of neoclassical economists, led by Robert Lucas, posed the question in the beginning of the 1970's that can be restated as follows: 'What would happen if actors know the equilibrium vector prices? *I.e.* actors were assumed to have so-called *rational expectations*? In such cases, market participants with sure knowledge of the future could 'hit the mark', meaning that they could re-establish the general equilibrium. This is still the founding assumption in the neo-classical school of theory.

Hahn and Solow (1996) showed, though, that the condition of rational expectations was not enough to ensure the establishment of a clearly defined general equilibrium, which is an important condition for the assumption that equilibrium can be known in advance. The lack of clarity is substantiated *by inter alia* the possibility that the system has multiple solutions that cannot *a priori* be discriminated between.

This result implies that any equilibrium will be specific and cannot be analysed independently of the traverse. Thus equilibrium will be determined, not only by the specific institutions of the market system, but also by the initial conditions, by both supply and demand factors, and by economic policy.

Regardless of the fact that disagreement exists between neoclassical economists as to the character and clarity of the general equilibrium solution, it is (still) a methodological requirement that each and every market economic model, where perfect competition is assumed to exist, should be (so-called) 'well-behaved', meaning that the system must converge towards a general equilibrium with full resource utilisation.

This neoclassical precondition that a macroeconomic model of analysis should be formulated as a general equilibrium model – which economic development of itself must converge upon – is not theoretically supported (Andersen, 2000). These model properties are postulated as a part of an axiomatic basis that is rarely subject to an empirical test.

The above discussed question of convergence to a general equilibrium is therefore of major system-theoretical interest when an analysis of the postulated market system's dynamic and statistical equilibrium properties is conducted. The analytical results are dependent on the characteristics of the model employed, and are primarily relevant to the system world from which they have been derived. The results of the analysis will conversely only be relevant to macroeconomic reality to the degree that the model and the conditions are realistic. Fulfilling this request is a challenging problem in itself, as will be thoroughly demonstrated in the following chapters.

The important issue is not whether or not one can theoretically find an *existence vector*, but rather if this vector is *relevant for a realistic macroeconomic analysis*.

### **Solow's growth model – a general stock-equilibrium model**

The Walras-model was constructed so that its components formed an analytical model that should ensure a general equilibrium in a single period a so-called flow-equilibrium. An important test criterion for equilibrium is that there should be full employment (no involuntary unemployment). The fulfilment of this demand therefore stood central in the discussion that arose after the publication of the *General Theory* and which subsequently divided 'the Keynesians' into contained camps; this is the subject of the following chapter.

Concurrent with the 'Keynesian' debate about the character of and reason for unemployment, the desire to develop a model of analysis to understand economic growth rose in the theoretical agenda. Not least, seen in the light of the post-war period's high growth rates, economists began to question how positive real investments exerted increasing influence over growth. Here the Cobb-Douglas production function was instrumental, in that within the framework of equilibrium models, it linked the capital apparatus and future production together. It was assumed that an increased number of production factors automatically created growth, as they would always be fully utilised in a permanent flow-equilibrium. Saving is further converted in the Walras-model to real investments, just as labour is always fully utilised. The growth tempo in the model is assumed for technical reasons to be moderated in step with expansion of the capital apparatus. The growth model rests at so-called stock-equilibrium, when the capital apparatus stops growing, measured in relation to the number of employed wage-earners. This equilibrium is characterised by all

production being consumed – except for needed reinvestment. An eventual continuation of growth must either be attributed to technological innovation or growth in the population.

This expansion of the Walras equilibrium to include a stock-equilibrium with constant capital equipment was presented in Solow (1956). Here, it is the full-employment model (flow-equilibrium) that is assumed to converge towards stock-equilibrium (stationary state equilibrium).<sup>3</sup>

Neoclassical theory in this way leaves us with a ‘broadened’ general equilibrium term, which *inter alia* constitutes the model-based framework for empirical models, such as the DREAM (Danish Rational Economic Agent Model) model of the Danish economy. These models are constructed so that the analysed macroeconomic system is assumed to be in permanent Walras-equilibrium (with full employment), which slowly – over more than 100 years – converge towards the stock-equilibrium; characterised as the point where growth in physical capital per employed wage-earner ceases. This general equilibrium growth model builds in such a way on its terminal position of fulfilling no less than three equilibrium criteria:

1. Walras-equilibrium /flow-equilibrium
2. Continuous Walras-equilibrium while converging to a stock-equilibrium
3. Stock-equilibrium

The question that therefore ought to be raised in relation to the formulation and use of a general equilibrium growth model is, to what extent the object’s empirical nature is congruent with the model of analysis and the method?

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<sup>3</sup> The Solow model has since been expanded with both inexhaustible resources and endogenous growth factors, though still held within the confines of a general equilibrium model, cf. Sørensen and Whitta-Jacobsen (2005).

## Post-Keynesian alternative in macroeconomic methodology:

*On the one side are those who believe that the existing economic system is, in the long run, a self-adjusting system, though with creaks and groans and jerks and interrupted by time lags, outside interference and mistakes (CWK, XIII: 486) 4,5*

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<sup>4</sup> There will be many references to Keynes's works. They have been collected and published under the name *The Collected Writings of John Maynard Keynes* in 30 volumes. To make the references more simple, I use the acronym CWK, followed by a roman numeral to mark the volume. I will though make an exception in the case of *The General Theory*, citing it as Keynes (1936).

<sup>5</sup> This in my view programmatic paper was originally delivered as a radio talk and later printed in *The Listener*, 21 November 1934 under the title 'Poverty in Plenty: is the Economic System Self-adjusting?' (CWK, XIII: 485-92).

*On the other side of the gulf are those that reject the idea that the existing economic system is, in any significant sense, self-adjusting (Ibid.: 487)*

*The gulf between these two schools of thought is, I believe, than most of those on either side of it are aware of. On which side does the essential truth lie? That is the vital question for us to solve. (Ibid.: 488)*

*The strength of the self-adjusting school depends on it having behind it almost the whole body of organised economic thinking of the last hundred years (Ibid.: 488)*

*There is, I am convinced, a fatal flaw in that part of orthodox reasoning which deals with the theory of what determines the level of effective demand and the volume of aggregate employment(Ibid.: 488)*

*I shall argue that the postulates of classical theory are only applicable to a special case only and not to the general case, the situation which it assumes being a limiting point of the possible positions of equilibrium. Moreover, the characteristics of the special case assumed by the classical theory happen not to be those of the economic society in which we **actually live**, with the result that its teaching is misleading and disastrous if we attempt to apply it to **the fact of experience**. (Keynes, 1936: 3, my highlighting).*

*Economics is a science of thinking in terms of models joined to the art of choosing models which are relevant to the contemporary world. It is compelled to be this, because, unlike the typical natural science, the material to which it is applied is, in too many respects, not homogeneous through time (CWK, XIV: 296)*

### ***Macroeconomic method and reality***

The message contained in the 1934-paper by Keynes could also have been formulated the following way: What do we really know about how the overall

macroeconomic system functions?; Is it reasonable to assume that the system is self-regulating?; Does the system, left to its own devices, have intrinsic adjustment mechanisms, which like a heat-seeking missile aim the individual markets towards full utilisation of resources?

In 1936, Keynes took an important step forward in his critique of the neoclassical macroeconomic theory. He presented in the introduction to *The General Theory* the distinction between *the economic society in which we actually live* and *facts of experience* on the one hand, and on the other, the model through which we choose to see the world. For Keynes, economic theory also became a reflection upon the *method-related choice of model*, and not just the analytical *use* of a model, something which must constantly be adapted to society's changes. The central issues for Keynes, during his macroeconomic exploring that took place in the first half of the 1930's, were the criteria for selecting a relevant model of analysis, and thereafter, the use of the model. To understand this, a number of scientific-theoretical questions are raised and answers sought in the following chapters.<sup>6</sup>

### ***Some methodological consequences of uncertainty***

Keynes's and perhaps also the post-Keynesians' ontological starting point is the need to include *uncertainty* in the macroeconomic analysis. This line of theory can hereby, without exaggeration, be summarised in the title *the economics of uncertainty*.<sup>7</sup> Uncertain knowledge is present at all levels of human behaviour: the individual's understanding of his or her own choices and situation, the social consequences of our activities, external events and the overarching (macro)economic development. Post-Keynesian literature is influenced by the aspiration to understand the importance of uncertainty in an epistemological perspective. For this reason, among others, Keynes's writings have inspired post-Keynesian economists to ask a number of methodological questions: What do we really know about macroeconomic convergence and equilibrium? Is the selected model *relevant* for obtaining

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<sup>6</sup> I here have chosen Keynes as an exponent for the so-called heterodox economic tradition. It is a natural choice because macroeconomic theory and method is at the heart of this book. As put forward by *inter alia* Lawson (2003), within many other economic sub-disciplines, there are writers that have connected their economic theory and method-related reflections together, such as Karl Marx, Torstein Veblen, Friedrich v. Hayek, and Milton Friedman.

<sup>7</sup> The historian, Eric Hobsbawm, describes the 20<sup>th</sup> century as the *century of extremes*, which naturally brings us to the idea that this century, to a much greater degree than its predecessors, has been influenced by *uncertainty*. This is an important factor for the shift in the scientific-theoretical foundation for macro-theory. However,

answers of these questions? For if it is not, the analytical results will be irrelevant. If the hypothesis that the *real* macro-economy is convergent can be substantiated through empirical studies, then it will remain an empirically unfounded restriction – a hypothesis which is *a priori* attributed to the analytical model.

A parallel problem is connected with the more specific use of a formalised model of analysis. Within the neoclassical tradition there are no limitations on the use of formal mathematical analysis. In the words of Varian (1999) it sounds: *It is perfectly possible to be analytical without being excessively mathematical...An analytical approach to economics is one that uses rigorous, logical reasoning. This does not necessarily imply the use of advanced mathematical methods. The language of mathematics certainly helps to ensure a rigorous analysis, and using it is undoubtedly the best way to proceed when possible...calculus is not just a footnote to the argument of the text, but is instead a deeper way to examine the same issues that one can explore verbally and graphically*' (Varian, 1999: xix-xx).

The point of the above methodological suggestion is that economic analysis, if one has the required mathematical insight, ought to be used, as it gives a 'deeper insight' than can be acquired through verbal and graphical presentations. Only the mathematical method can ensure the highest degree of logical consistency, and thus precision, in the results. Hence, it is the method that defines the line between economics and non-economics.

Even if this limitation of analytical economics is accepted it still does not free the researcher from having to justify further how the mathematically formulated model can give a *relevant* analysis. Relevance – meaning, here, to ensure that there is correspondence between the object's ontology and the method deployed – is a completely basic scientific criterion; this will be put into perspective in the following chapters by, among other things, reviewing scientific theory, particularly that inspired by *critical realism*.

### ***Can trend and cycle be separated?***

Ontological and analytical uncertainty means that general equilibrium and automatic convergence cannot be *a priori* assumed to be relevant model-related properties – unless we are speaking of a 'perfect' market economy without uncertainty and with very well-shaped mathematic functions. In that case the analytical focal point is the (very) long-term

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macroeconomic uncertainty is not merely a consequence of political upheavals, but just as much a result of an increased division of labour – nationally and internationally.

perspective, where the market economic system is designed to convergence to the predetermined general equilibrium. Here, we know by assumption (not by experience) that the closed system will end up in a ‘Walras equilibrium’, determined by the pre-designed structural conditions. The model may be less clear-cut about the traverse towards general equilibrium. There may even be formulated alternative traverses towards the target; but not of the target itself, which is independent of the traverse. Hence, the shorter run adjustment process causing ‘conjectural waves’ (‘business cycles’) are of less interest, as they have no long run. In most general equilibrium models the growth trend is determined by structural conditions leaving business cycles without any impact on the macroeconomic performance.

The opposite condition would be true if the existence of uncertainty were introduced. In such cases growth trends and business cycles cannot be analysed separately and an eventual long-term equilibrium would not be unique (Hahn & Solow, 1996). In that case the long-term goal would be less analytical interest and the traverse would gain in attention. When uncertainty is recognised the macroeconomic analysis becomes open ended. The further into the future we try to see, both as economic actors and as analytical economists, the more uncertainty will dominate and the analysis even more open ended, so to speak.<sup>8</sup>

Uncertainty about the future and expectations are narrowly connected. Keynes introduced short-term and long-term expectations as significant determinants of macroeconomic development. The weight attributed to expectations in the decision-making process change with the planning horizon and with the state of confidence (a term that covers variations in the level of uncertainty). In an uncertain world, the analysis with the shortest time horizon is in most cases the least uncertain, for instance the daily consumption, while investment decisions are made in the light of a longer-term, and therefore more uncertain, expectations.

In general equilibrium theory, the conditions are opposite – in the short term, actors can be surprised by unexpected events, but in the longer term, depending on the model’s specifications, the model will adjust towards the general equilibrium. The certain point is therefore the long-term equilibrium.

The two macroeconomic schools therefore reach different results concerning the question, whether the growth rate and business cycles can be analysed independently of one

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<sup>8</sup> An example: I feel rather sure that there will be sufficient supplies of energy for the next 10-20 years, even though political upheavals can hinder sections of the global energy supply. But were I responsible for the energy supply in a 50-year perspective, I would be (probably) rather uncertain, and even after being presented with the very best analyses, I still would start a massive investment in renewable energy and energy saving – just to reduce uncertainty.

another. To the degree that the average growth rate (the trend) is affected by the short-term conjuncture-determined development (the cycle), these two terms cannot be analytically separated. This means that macroeconomic development will always be decided by a mix of demand, supply, and price-affecting institutions. Here, the ‘traverse’<sup>9</sup> takes centre stage for the macroeconomic analysis, both in the short and long run, where also irreversible factors such as ‘path-dependency, hysteresis, cumulative causality and lock-in’ are of great importance (Kriesler, 2003).

### ***Can the microeconomic foundation be unequivocal?***

To start, I would like to pose the question, why is an explicit microeconomic foundation at all relevant for a *macroeconomic* analysis? The macro-model should draw broad lines in economic development and leave the details to microeconomic analyses. The analogy of making a map comes to mind. For the map to be useable the scale must be reduced, leaving out much detail.

Neoclassical theory works with an analytical concept called a ‘representative agent’, to whom is attributed traits as though it were an acting individual, but how, in the model, can one agent represent a whole category of individuals - for example, all consumers wrapped into one? In this way, we are speaking about a stylised *average* of an entire category, which then is given individualistic behaviour such as utility maximisation, most often under the assumption of full knowledge. Should these microeconomic conditions be carried over to the macro-level, then the representative agent is assumed, on behalf of the entire group, to know *the* general equilibrium, which is the macroeconomic equivalent to having perfect knowledge of the future. This was, as mentioned above, the reason for the model-related reason for formulating the hypothesis of rational expectations in new-classical macro-theory. But if the representative agent is not a representative for the whole group (perhaps because the group members act interdependently) or if the condition of full knowledge of the model’s general equilibrium is not in agreement with macroeconomic reality, then this microeconomic foundation becomes less relevant for macroeconomic analysis. This rather trivial conclusion, however, has not hindered neoclassical macro-theory, still today, to make

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<sup>9</sup> ‘The Traverse defines the movement of the economy outside equilibrium... The traverse is of relevance both to economists who deny that the economy is attracted to any equilibrium, as well as to those who accept that the economy will tend towards equilibrium, but argue that the final equilibrium position is path-determined’ (Kriesler, 2003: 355/6).

the requirement that an analytical macro-model has to be based on an explicit microeconomic foundation, starting with individual optimising agents with exogenous preferences.

### ***The fallacy of composition***

One of the great controversial questions in macroeconomics is to what degree it is possible to conclude from the particular to the general? Adam Smith wrote, as already mentioned, ‘What is prudence in the conduct of every private family, can scarce be folly in that of a great kingdom’ (Smith, 1776: 457). He equates individual sense and societal sense – not a bad starting point *per se*, particularly not in a poor agricultural society with few supply factors and governed by a small upper class with autocratic tendencies.

As mentioned in the introduction, macroeconomic theory has had to reflect on the question of the relevance of equating household economics and societal economics. General equilibrium theory is an attempt to generalise microeconomic behaviour to hold true on the macro-level. Alternatively stands the Keynes-inspired tradition, which concerns itself with the fact that uncertainty drives an epistemological wedge between individual behaviour and macroeconomic outcomes – because not even a super-rational actor cannot be all-knowing and act independently of the context. In the situations where uncertainty plays a significant role in economic decision-making, a macroeconomic generalisation, based on a method-individualistic microeconomic theory, will carry the risk of committing the so-called *fallacy of composition* (atomistic fallacy), which is caused by the fact that

*[I]ndividual actions, if common to a large number of individuals, will generate an outcome different from what was intended by each* (Dow, 1996: 85)

Smith’s (morally founded) statement should instead be formulated as follows: That which is right for one person is not necessarily correct for the entire society, when the action is conducted by a large number of people at the same time<sup>10</sup>. In other areas, Smith was well aware of the divide between morally founded behaviour on the one side and the

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<sup>10</sup> The problem can be found again (naturally) outside of economics. The paradox of the voter is well known: one voice for or against plays no role in an election, but if a large number of individuals act in a similar manner, then the result of the election can be affected. The Millennium footbridge over the Thames needed to be rebuilt when it was proved to be unstable in the event that a large number of pedestrians suddenly made the same movement, for example when they were hit by a strong gust of wind, or saw the royal family.

If one has paid for a seat at a football game, there is nothing so frustrating as when the spectator in front stands up. Then the first spectator must also stand, which inevitably forces the person behind them to stand. Very soon, everyone is standing, and no one – except perhaps the first – can see any better, though all get tired legs.

macroeconomic result on the other. He shocked the people of his time when concluding that following one's own interests in economic questions concerning production and employment could also be in the interest of society. He saw the selfish quest for greater income, which resulted in specialisation and division of labour, as important sources of 'the wealth of nations'. Economies of scale and increases in productivity could be taken forward by stimulating the profit motive, as it made 'the cake rise' to the benefit of not only the producer but also the society.

The risk of committing a fallacy of composition lies in the case where the macro-conclusion is based on an unrealistic generalisation of microeconomic behaviour. The significance of the fallacy of composition lies primarily in the warning against uncritically equating the individual and collective levels.

***Conclusion: methodology is a major dividing line within macroeconomics***

Within macroeconomic reasoning, two completely separate methodologies have been developed: one for neoclassical theory based on *equilibrium models* and another for post-Keynesian theory based upon *causal relationships and path-dependent analysis*, where uncertainty, a lack of information, institution and supply and demand factors under constant change create a sustained and (partially) unpredictable dynamic.

Neoclassic macro-theory focuses on the analytical model built up around the criteria for a well-functioning and equilibrium-creating macroeconomic system. Here, the focus is on the idealised basic model built with the assumption of rational expectations. It is with this set of lenses that macroeconomic problems are viewed. It is a standard model that serves as the basis for all neoclassical-inspired macroeconomic theory. As is shown in figure 1, within this line of neoclassic theory, there are a number of sub-schools and divisions which, to a varying degree, have dominated the post-war period. Of great importance for this discussion is the fact that, in the actual macroeconomic discussion, neoclassical macro-theory is represented by the new-classical and new-Keynesian lines, respectively, each of which have their specific characteristics, but both of which use the general equilibrium method and assume that representative microeconomic agents have rational expectations. It is, to put it mildly, terminologically confusing that one of the dominant schools within neoclassical theory uses the name *new-Keynesian*. This apparent paradox will be discussed in the following chapter that goes into more detail as to how Keynes's book from 1936 was later interpreted within the neoclassical tradition.

As given in figure 1, there is nothing less than a methodological abyss that divides the neoclassical macro-theory from Keynes's own contribution and its subsequent theory and method developments, called the post-Keynesian macro-theory. The domain here is the macroeconomic reality characterised by uncertainty. In the entire post-war period, there was discussion that the post-Keynesians consisted of a relatively mixed bag of macroeconomists (cf. King, 2002). The school had its origins in the circle around Keynes in Cambridge. It took part in the discussions behind the creation of *The General Theory* and was, like Keynes, influenced by the big problem of the times: high unemployment. The post-Keynesian line of theory has continued to have the desire to understand reality as a central point in its research and theory development. The gravitational point since has shifted from the more specific theory development to a greater degree of methodological and method-related reflections, with significant inspiration from the scientific-theoretical direction called critical realism. This work was carried out, in part as an acknowledgement of the fact that many of the great macroeconomic challenges were still theoretically unanswered<sup>11</sup>, and partially in light of the renewed reading of Keynes, on the release of *The Collected Writings of John Maynard Keynes*, with great emphasis on his methodological reflections and less on the more concrete theories and policy recommendations.

The argument of this introductory chapter could be summarised as follows: the selection of a method of analysis is a particularly important, yet often underestimated, consideration that ought to be connected to each and every *scientific* work. On professional grounds, the choice between various macroeconomic theories ought to be justified. This is no easy task, as economic theory is, like all other social sciences, burdened by political interests that see science as a source of leverage for more specific concerns. As mentioned, I will attempt to filter out some of the more ideologically conditional overtones from the scientific discussion. For me, it is the primary aim of macroeconomic science to illuminate macroeconomic reality, independently of particular interests. This means creating the best

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<sup>11</sup> Joan Robinson (*Journal of Economic Literature*, Dec. 1997), rather disillusioned, posed the question, how could it be, that thirty years after publishing *The General Theory*, a period when the Western World had experienced a previously unseen level of high economic growth, five significant macroeconomic imbalances listed below could still exist without a satisfactory theoretical solution:

1. Consumption of resources, including air to breath, has evidently impoverished (parts of) the world,
2. The long struggle over relative income shares has implanted a chronic tendency to and fear of inflation in industrialised countries,
3. The international financial system has weakened the structure of the world economy,
4. Growth in wealth has not removed poverty at home and development aid (and more international trade) has not reduced poverty in developing countries,

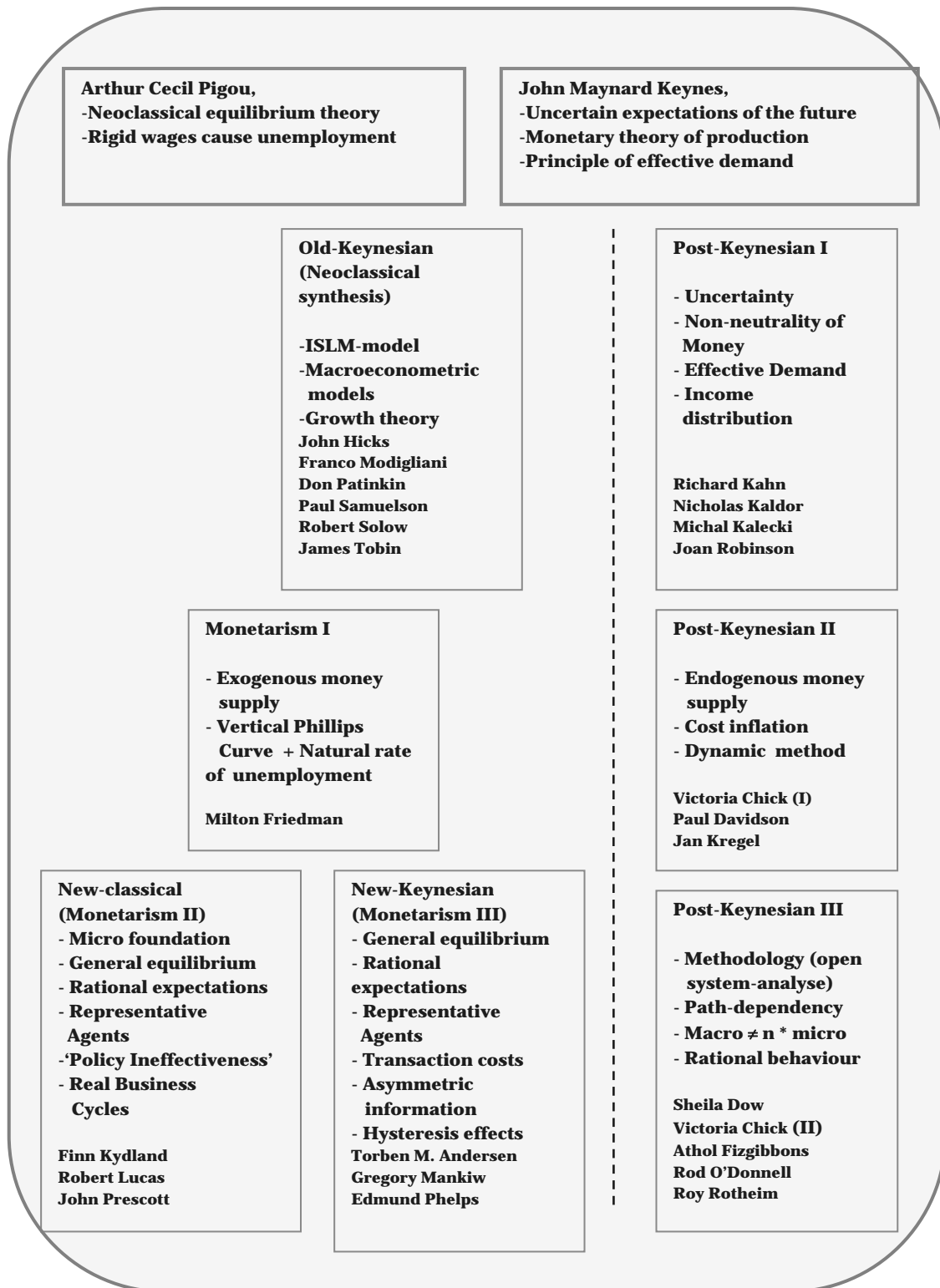
possible accord between theory and reality, thereby providing the best basis for decision-making, from which one can *subsequently* make political decisions. This is an important project because macroeconomic theory dominates a number of policy recommendations, which then affect the daily economy of common citizens: employment, the welfare state, sustainable development, the national accounts, and inflation.

For this reason it is important to develop professional argumentation for how one can differentiate between more and less adequate macroeconomic methodologies to enlighten others on a given macroeconomic problem. This means developing criteria for choosing a macroeconomic theory and the method of analysis.

**Figure 1: Overview of the most significant macroeconomic schools, categorised in chronological order and by analytical method**

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5. Registered unemployment has re-emerged. (In the EU it was around 5 percent in 1977; today, even though it is more narrowly defined than twenty years ago, it is in many countries staggering around 10 per cent, jj )



## How could it happen?

Hence, within sixty years we have come full cycle back<sup>12</sup> to Pigou's the *Theory of Unemployment* from 1933, which Keynes, if anything, used as his shooting target. He at the contrary offered to the economic profession a 'General Theory of Employment, Interest and Money', where the full employment equilibrium was the very, very special case not dependent on an assumption of flexible prices and nominal wages. 'Rigid wages' was, if anything, a policy conclusion not a necessary assumption for his theoretical conclusion related to the causes of unemployment.

Once again it is good value for money to quote Chick (1983). Her conclusion with regard to the content of chapter 19 in GT, which, in fact, has the title 'Changes in Money-Wages', cannot be misinterpreted, she says:

*The idea that the General Theory is based on fixed wages is blatantly incorrect. (p.132)*

One might excuse Pigou (1933). Because, there was prior to Keynes no *Monetary Theory of Production* for the economy as a whole (*i.e.* Macroeconomics). There were different pieces of macroeconomic theory, but not a consistent interrelated macroeconomic system. Pigou worked hard on the labour market; but while using a *partial* equilibrium model, he could not deduce any other conclusion that unemployment basically had to do with too high real wage. In that case money wage cuts had to be a part of the solution one way or the other. If that were politically unacceptable he, in fact, recommended public works. For that he was scorned by Keynes, because the beneficial effect of public work could not consistently be demonstrated within the partial labour market model!

The New-Keynesians have (with inspiration from Modigliani, see Modigliani, 1999) taken up the very same analytical approach and 'have been directed a considerable amount of effort into exploring a variety of reasons for wage and price stickiness *that prevent market clearing* (Snowdon and Vane, 1999: 45, my emphasis). This N-K research program is (re)searching for a 'rational microfoundation' for wage (and price) rigidities that prevent 'unnatural' unemployment to disappear. They see fiscal and monetary policies as temporary measures softening the adjustment process, but at the expense of increased public debt and inflation.

The partial macroeconomic theory based on labour market analysis is, of course, not an agenda derived from Keynes. He asked, if anything, the opposite question concerning the

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<sup>12</sup>I think it was D.H. Robertson who once said: *Economic ideas are like a rabbit running in a cycle. Just stand still and they will come back to you the only difference is, that it takes a little longer with ideas than with rabbits.*

labour market in chapt.19: 'Why are flexible nominal wages not likely to remove unemployment? Such a policy might even aggravate the employment situation (by exposing uncertainty).

The money wage level is, in the GT, what Chick calls a floating variable; its level is determined by history (Chick, 1983: 272) and 'real' expectations p.280.

Chick (1983: 249) provides us with a preliminary answer to why this degradation could take place. because *'treating the labour market as having causal priority over aggregate supply and effective demand (in explaining unemployment) is an important error. The essence of the difference between Keynes's causality and neoclassical simultaneity lies here'*.

Which is, according to my reading, a very important message because it contains the main methodological content of 'the Macroeconomics of Keynes' which is *Realism* (ontology) and *Beyond general equilibrium* (method):

1. We have in front of us a monetary production economy (ontology),
2. To prevent every thing to happen at the same time, we should use a macroeconomic method based on a causal (process) analysis, employing provisional short run, shifting equilibria (semi-closures) which does not prevent the entire/whole macroeconomic system to remain open,
3. Which provides us with rationally based, but still uncertain knowledge (epistemology) i.e. principle of Effective Demand when unemployment is to be explained as good as we can.

These distinct features of Keynes's Macroeconomic methodology has increasingly gone lost during the years, which I think makes it legitimate to conclude that Gresham's Law has worked much too well within mainstream macroeconomic from Keynes *via* Friedman to Lucas<sup>13</sup>.

Bob Clower concludes a similar story of methodological decline ('Keynes in retrospect') in the festschrift to Paul Davidson the following way:

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<sup>13</sup>Robertson's metaphor might also bear some 'truth'. There seems to be a minor, inner cycle running from Pigou via Modigliani to the New-Keynesian and a larger taking departure from Ricardo passing through a number of well-known economists reaching Keynes at the opposite position and then coming back to full employment general equilibrium.

*Most (modern) macroeconomic texts are obsessed with the idea that every 'sensible' macro model must define a full employment or natural unemployment solution... This perspective seems to be part and parcel of the landscape of the Newtonian conception of science.*

*The controversy that has plagued macro theory since its inception reflects the frustration of writers who have attempted unsuccessfully to make sense within existing doctrine of Keynes's outwardly self-contradictory notion of 'less than full employment' equilibrium : the fuss arises out of a preconceived commitment to conventional (full) equilibrium dogma. (Clower, 1998: 81)*

Obsession and commitment to conventional full equilibrium dogma are quite strong words, but is needed to make sense of the 'Gresham's Law' story of Macroeconomics. Because, as I have argued, behind the 'mainstream' story lies a fundamentally different methodology detached from reality by axiomatic assumption:

1. optimising, independent individuals
2. formalized general equilibrium framework of the market system
3. certain knowledge about the macroeconomic future

If any of the above axioms were removed the system would become open and the macroeconomic research program of neoclassical economists would collapse – because, there would be no well-defined first best solution which could be referred to.

That, I think, is what explains the obsession we are beyond reality. The macroeconomic system has become a social construction which is not substantiated by empirical support, but only by ideas.

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