



What is Post-Keynesian Economics?

by Jens Reich¹

Abstract for the 13th Berlin conference on “The World Economy in Crisis – The Return of Keynesianism?”

The conference title suggests that the current economic mainstream might be replaced, but by what kind of “Keynesianism”? While many economists who consider themselves Post-Keynesians struggle to provide a unifying definition of what Post-Keynesian Economics (PKE) is, its opponents often argue that PKE is only a loose bundle of economists, united solely through the common rejection of neoclassical theory. In their famous 1988 article, Harcourt and Hamouda identify *three* strands of PKE. Thus, defining PKE would require summarizing these strands into a single theory or a common methodological approach.

The definition given in the first volume of the *Journal of Post-Keynesian Economics* may be read as such a “Babylonian” approach. In opposition, it is argued that without a single coherent theory, PKE has nothing to offer other than destructive criticism that is unable to replace the mainstream, while incompatibilities between the strands can be solved or are not as important.

The question is—despite the risk of constructing just “another box of tricks”—could PKE heterodoxy be summarized in a single theoretical core, or could the strands be used simultaneously without neglecting at least one of them, or facing logical inconsistencies?

This paper supports the “horses for courses approach” by showing that the different core assumptions and theories built upon them are incompatible, and the Trieste Summer Schools were, therefore, doomed to fail. It is further suggested to develop a common methodological basis and to aim at replacing the current mainstream methodology instead of the mainstream theory.

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¹ Johann Wolfgang Goethe-Universität Frankfurt; Contact Information: Grüneburgplatz 1, RuW, Fach 70, D-60629 Frankfurt am Main, Tel.: +49 69/798–34757, Fax: +49 69/798–35013, Email: jreich@wiwi.uni-frankfurt.de

1. Introduction

The term Keynesianism is used in a dazzling variation. There are New-, Neo-, Old-, and Post-Keynesians, while Milton Freedman declared that “we are all Keynesians now” (see for example Patinkin [1948], Coddington [1976], or – with slight variations – Bharadwaj [1983]). The subtitle of this conference is “the return of Keynesianism”, but the question is: what type of Keynesianism is meant here, and where is it supposed to return from?

Keynesianism was – since Keynes – present in the mainstream literature by works of John Hicks, Franco Modigliani, and Paul Samuelson. More recently Keynesian thoughts have been found in the New Classical macroeconomic literature. Thus, if Keynesianism is supposed to return, “off-mainstream” Keynesianism is meant. “Off-mainstream” Keynesianism refers to Keynes interpretations which differ from the interpretation of the mainstream. Looking at these interpretations is worth it not only because of the Financial Crisis, but also because we know, as has been shown by the works of Robert Clower [1966] and Axel Leijonhufvud [1968], that Keynes own thought differs in different respects to the “bastard Keynesian” interpretations. The predominant “off-mainstream” group in Macroeconomics is – after a long time of changing names – mostly referred to as Post-Keynesian Economics (PKE).

The conference subtitle can thus be interpreted as the Question: “can Post-Keynesian Economics become the new paradigm of Macroeconomics? But here again the question is, what is Post-Keynesian Economics?

In the first Volume of the Journal of Post-Keynesian Economics, Weintraub and Davidson state, that the “JPKE will be guided by Keynes' remarks in a letter to Sir Roy Harrod [...]: 'Economics is a science of thinking in terms of models joined to the art of choosing models which are relevant to the contemporary world.' [...] The term 'post Keynesian' will thus be broadly interpreted, spotlighting new problems and revealing new theoretical perspectives” (Davidson and Weintraub [1978, pp. 6 ff.]). As open as this definition appears, the more reluctant Davidson, for example, seems to be in accepting any model or idea as Post-Keynesian. In his “History of Post-Keynesian Economics,” King [2002] provides a different definition which includes “all those who call themselves Post Keynesians” (p. 5) where he adds major figures that “never adopted the Post Keynesian title” (p. 5). Other have been more precise. In their 1988 paper Harcourt and Hamouda identify three different strands of PKE. These strands are usually traced back to John Maynard Keynes, Michal Kalecki, and Piero Sraffa. Other definitions, like Lavoie's [1992] who separates Kaldorians and includes Institutionalists, are wider.

In this paper I will stick to Harcourt and Hamouda. The three strands of PKE which have been

distinguished will be called *Financial-Keynesians*, *Cambridge-Keynesians* and *Neo-Ricardians*. This definition suffices best for the need of this paper, as will be explained in the end of this section.

Financial Keynesianism is rooted in Keynes' work, as well as others, focusing on time, uncertainty, and expectations, for the most part sticking to a Marshallian short-period,² and regarding capitalism as a financial capitalism. The classical dichotomy is rejected for the short and the long run, and an uncertain future makes optimal investment plans impossible. Instead, entrepreneurs have to rely more on their “animal spirits” the further the time horizon of an investment project reaches into the future. This uncertainty prevents the economy from achieving an equilibrium position or anything close to that (Minsky [1990b, pp. 364 ff.], King [1995, pp. 20 ff.], Marchionatti [1999, p. 417], Davidson [2002, pp. 11 ff.], Davidson [2004, pp. 246 ff.] and Schefold [1995]). Money is central to this analysis, because besides its functions as numeraire and medium of exchange, it is also a store of value and, therefore, possesses the “capability of acting as a vehicle for moving generalized [...] purchasing power into the indefinite future. Money is a one-way (present to future) time vehicle or time machine for store of value purposes” (Davidson [2002, p. 75]). This strand has been further developed by people like Sidney Weintraub, George Shackle, Hyman Minsky, Paul Davidson or Victoria Chick.

The *Cambridge-Keynesians* clearly root in Keynes as well, but while Keynes stuck to the short period, the “Cambridge Circus” including Joan and Austin Robinson, Richard Kahn, and James Meade, as well as Nicholas Kaldor, Michal Kalecki, and Lorie Tarshis tried to develop a theory that connects the short and the long period, stating that (as Kalecki [1971, p. 165] framed it): “the long run trend is nothing but a slowly changing component of a chain of short period situations; it has no independent entity.” Thereupon based, the focus is on an interconnected (or anti-partial), imperfect competition growth, distribution and price theory, rejecting marginal productivity theory and Keynes Marshallian foundation, replacing it by introducing classical or Marxian elements (Eichner and Kregel [1975], Kalecki [1971, p. 165], King [2002, pp. 18 ff.], Harcourt and Hamouda [1988, pp. 12 ff.], Tarshis [1980] and for an overview of the manifold contributions of Joan Robinson see Marcuzzo [1996]).

The *Neo-Ricardians* are in Keynes tradition as well, at least because Piero Sraffa was one of his students, contributing with devastating critiques of neoclassical theory. However, the Neo-Ricardian theory is much more rooted in the classical tradition of David Ricardo, or Sraffa's interpretation of Ricardo than in Keynes (Schefold [1989, p. 282]). It focuses on a capital and a perfect competition long run price theory. Taking the capital critique seriously, commodities are

² The marshallian roots can be seen most clearly by sticking to marshallian (not walrasian) supply and demand curves.

produced by means of commodities. The foundations were laid out in Sraffa [1951] and Sraffa [1960] and further developed by Krishna Bharadwaj, John Eatwell, Pierangelo Garegnani, Heinz Kurz, Luigi Pasinetti, Alessandro Roncaglia or Bertram Schefold³ (Dutt and Amadeo [1990], Garegnani [1989], Hahn [1982, p. 353], Kurz [1985], Kurz and Salvadori [1995], Roncaglia [1978] and Schefold [1997]).

General overviews of PKE considering the three strands identified above are given by Harcourt and Hamouda [1988], Harcourt [2006], King [2002] and Rima [2002].

Splitting PKE into three strands has one thing in common with all definitions of PKE. It highlights the heterodoxy of PKE. The question: “what is Post-Keynesian Economics?” has, thus, not been given so far, and is judged quite differently by different authors.

Regarding the variety and the nebulous definitions mainstream economists see Post-Keynesians as a loose bundle of economists united only by their common rejection of neoclassical theory (King [2002, p. 203]). Post-Keynesians differ in their answer. Some regard PKE as a “broad church” (employing King's term) of differently rooted theories. The main differences among them is, that some believe in the possibility to melt or synthesize the strands into a single coherent theory, while others proclaim that constructing a synthesis is not possible or desirable at all, being afraid of forming “just another box of tricks” as Joan Robinson put it. Others avoid heterodoxy by reducing the definition of PKE to their own strand, classifying the other strands as a different school of thought, or neglecting their importance.

A common name makes – from the authors point of view – no sense if “the church is too broad.” Thus if the judgement of the mainstream economist or King's definition is the best we can provide, why should we not use different names for different theories? Theories off the mainstream do not have to be labelled as Post-Keynesian. To reduce the definition of PKE to make it fit only one strand – as some authors have done it – would be a solution to this. The other answers given in the last paragraph – again from the authors point of view – seem more promising. These answers are – as mentioned above – differing in respect to the commonality between the strands. Some argue that PKE is united by methodology, the other group can identify a single coherent theory.

This paper developed out of the effort to find a single coherent theory. The reasons for such a synthesis are summarized in the next section. The differences between the strands are shown in section three. By identifying the mutual critiques of the different price theories and relating them – individually – to the core assumptions of the criticising strand it can be shown that the criticisms are not only motivated by personal hostility or the overestimation of one's own capabilities but by the

³ Furthermore different Italian economist such as Ciccone, Committeri, Panico, Pivetti and Vianello also conducted research within this approach.

own core assumptions. The results of this analysis will be summarized in section four.

After having specified the aim and the method of this paper it is quite easy to justify choosing Harcourt and Hamouda's definition. It is the only one where it is easy to relate a unique price theory to every strand defined.

2. Attempts to Synthesize:

“It is more important for an economic theory to be relevant for an understanding of economies than for it to be true to the thought of Keynes, Sraffa, Ricardo or Marx” (Minsky [1990b, p. 362]).

We shall first endeavour the reasons put forward in favour of a synthesis. Some try to merge the different strands into a single theory aiming at a replacement of the current mainstream, others focus more on combining the strengths and eliminate the weaknesses of the different strands. Financial-Keynesians – for example – do not have a theory of production but an elaborated theory of money, while Neo-Ricardians – providing a full theory of production – usually do not incorporate money in their analyses. Arguments in favour of such a synthesis are usually based on the commonalities found among the different strands, which have been highlighted by many (see for example Dutt and Amadeo [1990, pp. 152 ff.], Palley [1996, pp. 12 ff.], Roncaglia [1995, p. 120] or Thirwall [1997, pp. 9 f.]).

The commonalities referred to are manifold. It is argued that all strands incorporate effective demand and the rejection of Say's law. Thus, the level of aggregate employment is determined in the product market by effective demand, not in the labour market. Unemployment is not all voluntary resulting from a refusal of workers to accept cuts in their real wages, one of the reasons being that it is not possible to determine a specific real wage by nominal wage bargains. Saving does not lead to an equivalent amount of investment via changes of the interest rate because – with the existence of money in a world of an uncertain future – investment depends on animal spirits and the interest rate on liquidity preference. Therefore, a barter economy works fundamentally different from a monetary economy, or in other words, money is not neutral. Finally – without full employment and a constant velocity of circulation there is no direct relation between the quantity of money and the price level. Inflation can be cost pushed or demand let.

The conclusions drawn from these commonalities differ among authors. Palley [1996, p. 216] concludes that: „Post Keynesian macroeconomics represents a distinctive body of thought that rests on reasoned and logically consistent foundations.” Dutt and Amadeos [1990, p. 58] – inspired by their Cambridge-Keynesian roots – proclaim, that all Post-Keynesians could be summarized by referring to them as “imperfectionists.” Roncaglia [1995, p. 120] states that despite of all differences a common theory is possible, because “the Marshallian microfoundations on which

Keynes's General Theory relies are no more essential to the basic tenets of the Keynesian paradigm than the interpretation of Sraffa's outputs as 'centres of gravitation' is to his analysis.” The similarity between these conclusions is, that none of them provides any information on how the sometimes conflicting assumptions and prepositions should be merged.

Maybe the most important attempt to unite the heterodox strands has been conducted in Trieste, Italy during the 1980s⁴. Organised by Garegnani, Kregel and Parinello economists like Athanasios Asimakopulos, Geoff Harcourt, Hyman Minsky, Basil Moore, Edward Nell, Kurt Rothschild, Josef Steindl, and many more met for “Post Keynesian Summer Schools” to discuss their views, and to introduce students to Post-Keynesian Economics and to bring the different theories and insights to fruition for each other. Unfortunately, disputes and conflicts overshadowed the commonalities, and the conferences lost their significance in less than a decade without an achievement regarding a synthesis. In respect to this history, the futile search for *a* Post-Keynesian Theory is sometimes referred to as the “Trieste Problem”. The attempts to construct a synthesis continue until today (King [2002, p. 158ff] and Roncaglia [1983, p. 111]).

Arestis [1992], Harris [1978], Nell [1998], Pasinetti [1974] and Reynolds [1987] on the one hand and Dutt und Amadeo [1990], Kurz [1985], Mainwaring [1992] and Roncaglia [1995] on the other developed different approaches incorporating ideas from different strands. The first group of authors start from a Cambridge-Keynesian position where the later rely more on a Neo-Ricardian framework. Due to the aim of this paper, it will not be dealt with these approaches here. To get an idea, as we continue in the next section, why these approaches are affected by our findings, Arestis' and Mainwaring's approaches – as representatives of the two groups – will be sketched briefly. Arestis [1992] develops an approach containing numerous elements drawn from all three strands where he combines a Leontief production function with fixed coefficients, which is, therefore, very similar to a Neo-Ricardian production system, while referring to the Financial-Keynesian idea of historical time and an uncertain future. Mainwaring [1992] combines a short term price theory based on a mark-up with a long term – uniform profit rate – price theory.

To sum up, while there are arguments in favour of a synthesis, there is no proof that such a synthesis is possible, or has it ever been successfully conducted. Successful in the way that all three strands would have accepted it.

3. Theoretical Antagonisms:

In this section the mutual critiques of the different strands will be related to the criticizing strand's core assumptions. In other words, why do Financial-Keynesians have to insist on their critique of

⁴ King dates the conferences from 1981 to 1985 (King 2002, p. 158) but Roncaglia dates them from 1981 to 1989 (Roncaglia 1995, p. 111).

Neo-Ricardians or Cambridge-Keynesians, as well as the other way around. It will be shown, that the strands object to every price theory, and – even more importantly – this rejection is deeply rooted and tied to their own beliefs and price theory. Thus the point made here is, that *waiving the criticisms would mean to abandon the own theory*, and is therefore not possible.

According to the three strands, this chapter will be split in three subsections. The first will deal with the Cambridge-Keynesian price theory and the critique thereof. The second subsection will provide the insights into why the Neo-Ricardian critique is especially tied to the Neo-Ricardian price theory.

3.1 The Degree of Monopoly:

The Cambridge-Keynesian theory of prices is based on imperfect competition. The deviation from the mainstream – which was conducted in the 1930s – was backed up theoretically and empirically. In mainstream theory firms are for most part regarded as price takers limited to an optimal size by a mixture of increasing, constant, and decreasing returns to scale. An empirical study conducted by Hall and Hitch [1939] showed that firms calculate prices by adding a mark-up over full costs. Thus, firms do set and adjust prices and therefore behave like monopolists or semi-monopolists. The empirical findings were supported by a theoretical critique formulated by the young Sraffa [1925, 1926], criticising the neoclassical production theory and its underlying laws of return under competitive conditions. This led to a new view of firms as semi-monopolists, focused on growth as a mean to survive, instead of “simple” profit maximization (Eichner [1976, pp. 43 ff.], Kalecki [1971, p. 158], Kriesler [1987, pp. 21 ff.], Nell [1998, p. 50], Schumpeter [1934], and Wood [1975, p. 8]).

“Anyone who is in business naturally wants to survive [...] and to survive it is necessary to grow. When a business is prosperous it is making profit; for that reason it is threatened with competition” (Robinson [1971, p.101]).

The degree of monopoly that is at the heart of Cambridge theory was introduced by Kalecki [1939]. Like Hicks [1977] he distinguishes between flex- and fixprice markets, where his theory applies to the later. While flexprice markets can be described by the marshallian model of the fish market (Eatwell and Robinson [1973, p. 37]) it is possible to generate profits above cost operating on fixprice markets – which are regarded as the typical case in developed countries. This mark-up on costs is explained by the degree of market imperfection, the “degree of monopoly” (Kalecki [1971, pp. 44 ff.], Robinson [1977, p. 1335] and Sawyer [1985, p. 28]).

“[A]s long as the resources of the economy are far from being fully utilised [...] the mark-ups are determined by semi-monopolistic and monopolistic factors which I nicknamed 'degree of monopoly'. [...] If the price is not determined by the equilibrium of supply at full utilisation of

equipment, on the one hand, and demand, on the other – the prices are fixed by the firms on the basis of the average prime cost and the average price of the product group in question” (Kalecki [1971, p. 168]). These semi-monopolists have to take competitor's prices into consideration, which Kalecki [1971] formulated as determining the mark-up (left hand side of equation (1)) by a function of the industry's average price (p') and the price (p) set by the firm.

$$(1) \quad \frac{p - C(q)}{C(q)} = f\left(\frac{p'}{p}\right)$$

Similar ideas of imperfect competition can be found in different form in Lerner [1934] or Robinson [1933]. The degree of monopoly is thus a measure for competition and has therefore been accused of being a tautology defining what it is supposed to explain (Davidson [1960, pp. 52 ff.], Davidson and Smolensky [1964, pp. 128 ff.], Kaldor [1956, p. 92], Kriesler [1987, pp. 107 ff.], and Sawyer [1985, p. 13]). According to Kriesler [1987] this is the case only for Kalecki's early works. In his *Theory of Economic Dynamics* Kalecki [1954] gathers different factors as determinants of the degree of monopoly. He lists the “concentration of industry”, “changes in transport cost”, “changes in the degree of product differentiation”, “growth of cartels”, “development of sales promotion”, and the “significance of the power of trade unions”; which are – with the exception of the product differentiation (Kalecki [1939, p. 32]) – summed up in Kalecki 1954 (p. 17 f.). Reasons for an industries concentration are given by fixed costs of production and the formation of cartels, where product differentiation is achieved by sales promotion. The degree of monopoly is then the sum of market imperfections (Robinson [1977, p. 1335], Sawyer [1985, p. 29], Reynolds [1983], and Sraffa [1926, p. 190 f.]). Thus with a varying degree of monopoly this theory is supposed to hold for any degree of competition (Kalecki [1971, p. 158], Lavoie [1992, p. 98], Okun [1981, pp. 175 f.], and Riach 1971, p. 52).

The Cambridge-Keynesian price theory has been target of criticism from Financial-Keynesians as well as Neo-Ricardians. With the exception of Minsky [1986, pp. 142 ff.] – who made use of Kaleckis theory of profit – Financial-Keynesians have not payed much attention to the works of Cambridge-Keynesians (King [2002, p. 212]). Revising his 1972 book Davidson even removed all parts relating to the “Cambridge Philosophy” and published his new 2002 edition completely without it. This is not surprising, after stating in a discussion with John King: “I [Davidson] don't think that Kalecki adds anything to the system” (King [1995, p. 32]).

A general criticism put forward against the degree of monopoly is the following; to calculate a specific price the industries average price and degree of monopoly has to be known. But the degree of monopoly is explained by product differentiation, and the usual definition of an industry – as a summation of firms producing a homogeneous product – does not apply. Therefore the definition of

an industry will always be vague. Robinson defends the theory by suggesting to distinguish industries by their method of production (Davidson 1960, pp. 52 ff., Eichner [1976], Kriesler [1987, p. 31], Robinson [1933, p. 579], and Wood [1975]).

The specific Financial-Keynesian critique shall be postponed until we elaborated the Financial-Keynesian theory. We will instead focus on the Neo-Ricardian critique that has been advanced especially by Steedman [1992; 1993]. Steedman put forward that input-output coefficients are ignored by the Cambridge-Keynesian price theory as well as joint production is excluded from the research agenda. Therefore the effect of prices on costs is not taken into account and we may find counter-intuitive price changes if mark-ups are changed. This critique is as devastating as the capital critique has been, and therefore it is not surprising that the answers – given by Sawyer [1992], Kriesler [1992], Kriesler [1993] or Steindl [1993] – just highlight the advantages of Kaleckis theory in other respects. While they might be right, we will highlight why a Neo-Ricardian not be able to ignore the conceptual problem. To understand why these seemingly small inconsistencies are so highly valued from a Neo-Ricardian perspective, we will switch to their theory.

3.2 The Profit Rate as Central Control Mechanism:

The Neo-Ricardian price theory is a long run perfect competition model based on the classical tradition (Ricardo [1817, pp. 4 ff.]). The problem of classical authors was that by adding capital to production a reduction to labour values was not possible if it is allowed for a commodity to enter in its own production (Roncaglia [1978, pp.7 ff.]). Smith's adding-up theory was based on given factor prices, but as Ricardo showed, this left out the impact of changing prices on factor prices which exists if – in Marx' terms – commodities are produced with a different organic composition of capital. Ricardo realized that as soon as we price or value commodities to measure the distribution (thus wages and profits) our prices will depend on distribution and vice versa. Ricardo's cornmodel suggested a solution, which was later conducted by Sraffa [1960]. Despite Sraffa's solution it is only possible to formulate a one production good price theory as e.g. Neoclassical authors do. With the creation of the standard commodity factor prices can be determined by physical quantities and therefore without any valuation. Thus the distribution can be determined independent of prices. The resulting prices are interpreted as centres of gravitation. Market prices are expected to fluctuate around these “natural” or “normal” prices (Schefold [1997, pp. 76 ff.] and Sraffa [1960, pp. 72 ff.]). If we take the simplest case of a reproducing system that produces n goods in n industries, where every good enters into the production of every other good we can set up the following linear system of equations

least profitable when it is comparatively low” (Sraffa [1960, p. 84]). Using Sraffa's standard commodity as method of valuation we get a standard commodity for every technique. A comparison between different techniques is therefore only possible for the same distribution. Switches in technique might now have counter intuitive results which has been discussed as reswitching phenomenon (Chase [1979, pp. 93 ff.] Robinson [1956, pp. 109 ff.] and Schefold [2005]).

The capital controversy is – from this point of view – a theoretical, *not* a technical controversy. In respect to Cambridge-Keynesians, the Neo-Ricardian critique is not about perfect versus imperfect competition, it is about a misleading model of production, which is at the heart of Cambridge-Keynesian price theory. Changes in the mark-up might lead to counter-intuitive changes of prices. A rise in the mark-up of a product might even be able to reduce its price, if it is heavily in the production of most or all other goods. These problems being at the heart of Neo-Ricardian theory are not captured, or even ignored, by the Cambridge-Keynesian price theory. If a price theory does not incorporate such an elaborated theory of production it will be difficult to accept from a Neo-Ricardian perspective. We will conclude this critique by citing Steedman [1992, p. 150]: “Once Kaleckians have firmly set their theory in the context of input-output relations and the importance of joint products [...] they may find – who knows – that their underlying concept of mark-up pricing has new, positive contributions to offer”.

Let us focus on the critique towards Neo-Ricardianism now. The central adjustment mechanism of the Neo-Ricardian long run equilibrium is perfect competition. Competition arises from entrepreneurs fighting for the highest profit on their investments. If an entrepreneur can achieve a higher profit rate with an investment project, he will increase his investments and/or others will follow. Differing profit rates between industries would then cause adaptation. Adaptation could take place in form of “changes in prices themselves, transfers of funds, investment, capital losses” (Schefold [1985b, p. 140]) and so on, and would constitute a centre of gravitation. We thus find a tendency to a uniform rate of profit and full capacity utilization assured by competition at the heart of the Neo-Ricardian system even if they have not been in the focus of Classical or Neo-Ricardian authors (Schefold [1985b, pp. 140 ff.] and Roncaglia [1987, pp. 50 ff.]). These adaptation processes can be caused by switches to new techniques, which are conducted if a single entrepreneur realizes that by employing a different technology surplus profits can be obtained and therefore investment is increased by him or other competitors. The adaptation process is concluded as soon as the new technique has become the dominant one. Formerly generated surplus profits will be dried out by competition and a new uniform rate of profit will be established (Roncaglia [1978, pp. 28 ff.]). While we have – so far – discussed the basic system only, we could extend the analysis to non-basic goods and joint production. In a specific system of production non-

basic goods differs from basic goods in respect that non-basics do not enter in the production of every other good produced. If there are non-basics produced there will be a profit rate determined in the basic and non-basic industries independently, where the non-basic industries have to accept the basic goods profit rate, if they can not, this non-basic will not be produced (Roncaglia [1978, p. 63], Sraffa [1960, pp. 90 ff.]). Thus non-basic goods require no fundamental changes (Sraffa [1960, pp. 81 ff.]). As Schefold [1985a or 1997] has shown the basic findings regarding the adaptation via the rate of profit do hold similarly for joint production.

But let us come back to the core of the model, its adjustment mechanism. Entrepreneurs have to be able to adopt their investments due to potential differences in profit rates. It is then assumed that this constant adaptation – kept alive by competition – leads to a tendency to a uniform profit rate. How this adaptation takes place over time, and what “time” therein means has been the criticism put forward by Financial- and Cambridge-Keynesians that conflicts with their own theories.

Robinson⁵ [1979b, p. 180] wrote: „In Garegnani's conclusions, the conception of the long period, in particular of the normal rate of profit on capital, is not easy to grasp. Does he mean what the rate of profit on capital will be in the future or what it has been in the past or does it float above historical time as a Platonic Idea?”

And Garegnani [1979, p. 185] replied: “It is a pity that Joan Robinson's list of possible temporal locations has left out the present: because it is in the 'present' that the 'normal' rate of profits has always been firmly located. It corresponds to the rate which is being realised *on an average* (as between firms and over time) by the entrepreneurs who use the dominant technique.”

This most clearly shows how adjustment – controlled by the profit rate – is supposed to work. Samuelson characterized this “assumption implicit and explicit in the classical mind [...] [as] a belief in unique long run equilibrium independent of initial conditions. I shall call it the 'ergodic hypothesis' by analogy to the use of this term in statistical mechanics” (Samuelson [1968, p. 11-12]).

While Davidson [2002, p. 58] stucked to Samuelsons term, Robinson [1977] introduced new terms: logic and historic time. Financial- and Cambridge-Keynesians do not believe that reality can be described in logic time or ergodic models. A system in logic time is focusing on long run equilibrium only and can therefore only describe an economy in “perfect tranquility” (Robinson [1956, p. 103]) and not tell anything about the transition between equilibria (Harris [2005], Halevi and Kriesler [1991, p. 86], Kaldor [1985, pp. 61 ff.], and Robinson [1979b, pp. 14 ff.]).

“Everyday, in real life, the past is irrevocable and the future predicted with a margin of uncertainty.

5 Robinson's judgement of Neo-Ricardian theory changed over time, starting enthusiastic and – in her later life – becoming one of the strongest critics (Gilbert [1996], Harcourt [1996], Robinson [1980d], Salanti [1996]).

In a theoretical model, time can be frozen but it is a common error to confuse a comparison of static positions with a movement between them” (Robinson [1980c, Abstract]).

In other words the present is not determined by a far future, but the future is determined by the present. The past has to be viewed as only truly exogenous variable in an economy. The present depends on this past (like an accumulated capital stock) and is therefore path-dependent, because of the given initial conditions. The future on the other hand is not determined but open. This leaves us with the chance of changing our future on the one hand and the burden of uncertainty on the other (Kaldor [1985, pp. 61 ff.]). Among endless examples; a finished production, sunk costs or decisions made can not always be made undone or only under high cost (Davidson [2002, p. 59], Harris [2005], Robinson [1978, p. 12], Robinson [1980b, p. 80], and Robinson [1980c, pp. 90 ff.]).

Adjustments to the rate of profit modelled in logic time would – interpreted in historical time – imply strong behavioural assumptions regarding economic agents. Capitalists would need perfect foresight or capacity would have to be easily adjustable to current demand to justify a strong tendency towards a long run equilibrium (Robinson [1980c, pp. 88 ff.]). As Halevi and Kriesler [1991, pp. 86 ff.] point out, in a world of persistent and empirically observable differentiating profit rates and excess capacity this is highly questionable.

The rate of profit is measured “as the ratio of current annual profits to the net historical value of the existing capital stock”, and Davidson [1972, p. 134] adds that “this measure is unimportant and even irrelevant [for business decisions]. Only if the existing stock of capital *could be instantly revalued* in the light of future expectations *in a real spot market* will the rate of profits on the value of the existing stock have relevance on the decision whether to buy newly produced capital goods or to buy pre-existing facilities in the spot market from others for use in production processes” (Davidson [1972, p. 134 f.]). Davidson follows a remark in Keynes General Theory where Keynes [1936] proclaimed that the problems “of comparing one real output with another and of then calculating net output by setting off new items of equipment against the wastage of old items presents” (p. 39) difficulties which “are 'purely theoretical' in the sense that they never perplex, or indeed enter in any way into, business decisions and have no relevance to the causal sequence of economic events, which are clear-cut and determined in spite of the quantitative indeterminacy of these concepts” (p. 39). Keynes concludes “that one can get on much better without them [concepts of a physical profit rate]” (p. 39). Minsky [1990b] adds that in a monetary world “the 'rate of profit' disappears from such an [a business man's] analysis as there is no well defined denominator, for the historic costs of capital assets disappear from the determination of any economic variable. All that remains from the past is the physical capabilities of the machines and the mass of financial obligations embodied in the structure of liabilities and intermediation” (p. 368 f.). Because

Neoclassical and Neo-Ricardian theory leave money and banking out, Minsky judges them as not or only marginally compatible to Keynes (Minsky [1990b, p. 368 f.]).

Regarding the conceptual difference between logic and historic time that underlie these differences we can go back to Keynes [1921 or 1936] or Knight's [1921] distinction of risk and uncertainty. While risk can be incorporated in ergodic or logic time models, uncertainty can not.

“The sense in which I am using the term [uncertainty] is that in which the prospect of a European war is uncertain [...] and the rate of interest twenty years hence, or the obsolescence of a new invention [...]. About these matters there is no scientific basis on which to form any calculable probability whatever” (Keynes [1937c, p. 214]).

This is Keynes' [1936, pp. 161 ff.] argument why he stuck to the short period, highlighting the investment decision as depending on “animal spirits”. How informations are processed, collected and weighted over time in such a world is based on Keynes 1921 Treatise on Probability. While it is highly difficult if not impossible to built a positive theory upon these arguments – as has been show directly or indirectly by Shackle [1955], Nelson and Winter [1974] or Marchionatti [1999] – these considerations are used as fundamental critique of the long run/ergodic/logic time models.

“One must assume that the people in one's models do not know what is going to happen, and know that they do not know what is going to happen. As in history!” (Hicks [1977, p. Vii])

In a world with an uncertain future we may or may not assume that short run expectations can be characterized as being of perfect foresight, but long run expectations indeed can not. Long run expectations and all decisions based on them can not rely on a solid base. The value of a long run investment project depends on future variables like the future interest rates or future prices which are unknown today. It would thus be irrational to value long run expectations too much. This is why Keynes assumed that experience gathered until today enters disproportionately high into long run decisions and why it is disagreement with the assumption of perfect foresight (Keynes [1936, p. 148] and Marchionatti [1999, p. 418]).

The important point here is the following. Neo-Ricardians cannot drop their assumption of a tendency towards centres of gravitation, especially for the rate of profit, because otherwise their theory of prices brakes down. For Cambridge-Keynesians this counts the other way around. A tendency towards centres of gravitation would require investments to constitute this development by adjusting to the rate of profit. Thus, we would have a tendency of disappearing mark-ups, reducing them to a unique rate of profit. In this respect the Cambridge-Keynesian position would be a short run theory constituting an universal tendency towards an equilibrium independent of initial conditions. A position as unacceptable for Cambridge-Keynesians, as it would be for a Neo-Ricardian to sacrifice the Neo-Ricardian price theory.

3.3 Money:

By now we have seen the mutual criticisms of Cambridge-Keynesians and Neo-Ricardians and the relations to their own assumptions. While we have mentioned some of the critiques formulated by Financial-Keynesians we have not shown yet, why their theory is criticised and how this criticism is rooted in the other strands core assumptions. This section will therefore close the gap.

The central proposition which distinguishes the other strands from Financial-Keynesians is that for the latter „money isn't everything, it is the only thing“ (Minsky [1990b, p. 369]). Financial-Keynesians believe in the non-neutrality of money and focus on monetary systems, uncertainty and historical time, therefore, they – at least for the most part – neglect the usefulness of short and long run theories.

An early advocate of this monetary interpretation of Keynes is Hugh Townshend. Mostly unknown he proclaimed in 1937 that Hick's – even before he developed the IS-LM model – misunderstood Keynes regarding the rate of interest as being “a price determined by conditions of supply and demand at the margin (of 'production') – namely, the price of new money-loans sold in exchange for free money” (p. 157). Taking Keynes serious – he continues – the interest rate can not be the equating price of loanable funds and their demand because demand and supply depend themselves on the rate of interest.

“It is true that in equilibrium the rate of interest will be equal to the marginal efficiency of capital, since it will be profitable to increase (or decrease) the current scale of investment until the point of equality has been reached. But to make this into a theory of the rate of interest or to derive the rate of interest from it involves a circular argument [...]. For the 'marginal efficiency of capital' partly depends on the scale of current investment, and we must already know the rate of interest before we can calculate what this scale will be” (Keynes [1936, p. 184]).

This is due to the fact that the price of every durable good depends on its current market price (supply and demand of stocks) and the price of newly produced units, where both prices have to be equated. This is the core of the liquidity premium. All goods with a high durability, a low elasticity of supply, or a low substitutability have a high liquidity premium. A real theory of prices has to be mistaken then, and even if not all goods are durables, all prices are expressed in money and therefore depend on the liquidity premium. Thus, it is concluded, that a real or physical price theory suffices for a barter economy only (Davidson [2002, p. 92] and Townshend [1937, p. 161]). The question then is, when do we have to consider an economy as barter or not. Keynes answer is: as soon as there is a general numeraire or a good whose carrying cost are strongly overcompensated by its liquidity premium, we do have money, and it does not matter if this means of payment is a paperback money or a commodity, because whatever it is, it can be held as an asset including a

liquidity premium transforming purchasing power of today in purchasing power of tomorrow (Keynes [1936, p. 239] and Townshend [1937, pp. 161 ff.]). By today all modern economies are based on a numeraire and thus all modern economies are monetary systems. Therefore, “the theory of value in a capitalist economy is the theory of money-prices” (Townshend [1937, p. 167]).

This insights have led Financial-Keynesians to develop a monetary theory. Instead of “a” interest or profit rate we get “own rates of interest” or “commodity rates of interest” for all durable goods. These own rates connect spot prices p_s and forward prices p_f (Keynes [1936, p. 222]). Liquidity preference therefore is *not* the propensity to save. It is the decision *how* saving is done (Davidson [2002, p. 81]). The own rates can be calculated as return, q , of good i , minus carrying cost, c , plus the liquidity premium, l . Expressed in spot and forward prices the own rate \check{r} equals the price differential (Keynes [1936, p. 226]):

$$(6) \quad \check{r}_i = q_i - c_i + l_i = p_{i,s} - \frac{p_{i,f}}{p_{i,s}} .$$

Taking into account that we trade goods in money prices, we have to take changes \dot{a}_i in individual money prices (p_i^m) into account. This leads us to:

$$(7) \quad \dot{a}_i = p_{i,s}^m - \frac{p_{i,f}^m}{p_{i,s}^m} .$$

Where \dot{a}_i is the change in the price of good i over time. If people can choose their medium of saving or investments freely, the sums of \dot{a}_i and \check{r}_i have to be equal for all goods. Where \dot{a} is zero for money, because money can not change its price in terms of money itself. Thus the own rate of money (\check{r}_{money}) determines the own rates of interest for all other goods (Keynes [1936, pp. 226 ff.], Kregel [1983, p. 60], Harcourt [1983, p. 82] and Nell [1983, p. 88]).

The denial or lack of a real theory led Cambridge-Keynesians and Neo-Ricardians to value their own position as more advanced or more important. Sawyer [1982, p. 4] for example states, that while Keynes and the Financial-Keynesians challenge orthodox theory only by referring to money and liquidity preference, the Cambridge approach offers much more, based on their theory of imperfect competition and prices connected to a class based theory of distribution, where Financial-Keynesians stop with the notion of an uncertain future. Similar points have been made by Robinson [1966, p. 48], who judged the Cambridge position and Kalecki's influence in respect to the theories of prices, investment and distribution as superior to Keynes macroeconomic theory. And in general she states that “Michal Kalecki [...] gave a narrower but more precise analysis of the operations of the capitalist economy” (Robinson [1966, p. 103]).

Neo-Ricardians, like Garegnani or Eatwell, declared the short run theory of Financial-Keynesians as of less importance as well. Eatwell [1983, p. 272] interprets the monetary theory as a theory of the

market-prices fluctuating around the long run centre of gravitation, therefore declaring the short run theory of much less – if not of no – importance. Garegnani [1983, pp. 74 ff.] adds that for everything Keynes wanted to show – unemployment, effective demand and so on – he had to rely on uncertainty, expectations and money. By today this could – in a Neo-Ricardian approach – be shown for the long run with no need of money or uncertainty. Besides making the same points as Cambridge-Keynesians of an over-valuation of uncertainty and money, and a missing, but much more important long run theory Garegnani and Eatwell additionally criticise the Marshallian micro-foundation, relying on supply and demand functions.

Comparing their price theories the differences between Neo-Ricardian and Financial-Keynesian theory are in some respect very similar to the differences between Cambridge-Keynesians and Neo-Ricardians. The Financial-Keynesian theory could also be rewritten as Neo-Ricardian short run theory. Money – dominating the real variables – and uncertainty – preventing the economy from a tendency towards an equilibrium would have to be replaced. Introducing the Neo-Ricardian theory of production would make it necessary to eliminate money and replace it with a technique of production and uncertainty with a tendency to centres of gravitation. Thus, the theories are conflicting in their core assumptions and the mutual critiques are rooted in their own theories. See for example Kregel [1985, pp. 133 ff.] for this position.

The rejection of a synthesis with Neo-Ricardian long run theory can easily be understood. Cambridge-Keynesians on the other hand dismiss the classical dichotomy in the short and in the long run by adding finance to their price theory. Money thus plays an important part, and by introducing finance to their theory of prices Cambridge-Keynesians introduce a monetary factor in their theory of prices (Eichner [1976, Chapter 6], Lavoie [1992, Chapter 3.3] or Wood [1975, Chapter 3.3]). Thus, it is on first sight not easy to grasp where the mutual critiques are rooted. To understand that we have to go into more details. As mentioned above, money is introduced in Cambridge-Keynesian theory via the finance of investment. This connection can be traced back to Kalecki who highlighted that capitalist have to finance their investment.

In Kalecki [1971, pp. 110 ff.] *real* investment in the macro scale depend on gross savings, S , serving as an indicator of retained profits, the rate of change in aggregate profits, $\Delta P/\Delta t$, and depreciation of the capital stock, $\Delta K/\Delta t$.

“Assuming, moreover, a linear relation we have:

$$(8) \quad D = aS + b \frac{\Delta P}{\Delta t} - c \frac{\Delta K}{\Delta t} + d$$

where d is a constant subject to long run changes, in particular technical progress” (p. 112 f.).

From an individual perspective it is possible to invest more than is saved by taking on leverage via

bank loans. The individual level of investment then depends on the marginal risk, which is caused by two factors.

“The first is the factor that the greater is the investment of an entrepreneur the more is his wealth position endangered in the event of unsuccessful business. The second reason making the marginal risk rise with the size of investment is the danger of ‘illiquidity’” (Kalecki [1937, p. 442]).

As we can see Kalecki attributed more importance to the real economy than developments in financial markets in his theory of investment. Past profits (due to their high positive correlation with current or expected profits) are the major influence on investment. Later Cambridge-Keynesians like Robinson [1962] followed Kalecki in assuming that net investment is mainly financed from gross retained profits and therefore a main determinant of the mark-up. It is true that younger Cambridge-Keynesians highlighted the role of additional finance. Where finance – following Robinson [1962, p. 43] – can be generated “by selling bonds and equities to rentiers, and by borrowing from banks at the ruling rate of interest” (Davidson [1972, pp. 140 ff.], Lopez and Mott [1999, p. 297], Nell [1998, p. 517], Tarshis [1980, p. 11] and Wood [1975, p. 6]).

Even if the incorporation of finance is an essential part of the Cambridge-Keynesian price theory and mostly justified by referring to Keynes [1937a] and [1937b], who highlighted the finance motive as the fourth motive and “coping-stone of the liquidity theory of the rate of interest” (Keynes [1937b, p. 667]), it is “real” finance not liquidity preference that has been introduced in Cambridge-Keynesian models. Finance in this respect is a reallocation of savings through the credit market. Thus, where real determinants play the major role in Kalecki’s “industrial capitalism”, in Keynes’ “financial-capitalism” the tail is allowed to wag the dog “by asserting that share price movements can determine expected profitability as opposed to the other way around” (Lopez and Mott [1999, p. 297]). Davidson [1986], [1995] and [2002, pp. 97 ff.] tries to elaborate this by splitting the term “finance” in “finance” and “funding”. Davidson’s objection is that “[i]n a logically consistent Kaleckian [Cambridge] world, buyers cannot obtain purchasing power to buy goods without either earning income or borrowing from others who do not wish to spend all their current income” (Davidson [1995, p. 63]).

It is agreed that buying an investment good has to be *funded*, thus cash flows have to pay user-cost, wages and interests on credit, and therefore credit is linked to profits and savings. Where the later will be determined by wages and adjust to investment. But this constraint does not hold as long as it is expected that the investments will pay off (Davidson [1986, p. 101]). But before investment goods can be bought they have to be produced. *Finance* is the credit granted to the producer of an investment good, which is needed until the producer can sell the investment good. As far as there are unemployed resources liquidity provided by the bank can *finance* the production

of an investment good, and while no cash flow is generated during its production, investment increases while saving is generated by employing formerly unused factors of production. Therefore investment is not limited by funding or imperfect credit markets, but by the liquidity provided by the bank. The problem is, in a real system (of investment or production) liquidity has to be excluded (Davidson [1986, p. 105], Davidson [2002, pp. 97 ff.], and Minsky [1990b, p. 368 f.]). But for Financial-Keynesians it is this role of uncertainty and money that is the causal variable constraining a capitalist economy, and it is “this role of money that has been absent from Cambridge, and all other, macroeconomics after Keynes” (Kregel [1985, p. 138]).

Therefore, Cambridge-Keynesians object to an over valuation of uncertainty and the “money-time machine”, Financial-Keynesians in opposition believe, as Minsky [1990] phrased it, that “the role of money [...] cannot be studied without introducing uncertainty” and “Keynes without uncertainty is like Hamlet without the Prince” (p. 366).

4. Conclusion:

Proceeding through the last three chapters we have seen that the mutual critiques of the different strands are rooted in their own theories. We have shown that for the different price theories. The crucial points shall be repeated briefly.

The price theory of *Neo-Ricardians* is implicitly based on adaptations conducted by entrepreneurs, constituting a tendency to centres of gravitation. These adaptations have not attained much attention by Classical or Neo-Ricardian authors. The adaptations and the derived tendency is deeply conflicting with Cambridge- and Financial-Keynesian price theories and renders their view as obsolete, where skipping this assumption makes the Neo-Ricardian price theory break down.

Financial- and Cambridge Keynesians differences can be traced back to money. Cambridge-Keynesian mark-up pricing is linked to a firm's need to finance growth. If liquidity preference and other monetary influences to govern prices, profits and investment, the degree of monopoly would lose its importance. Financial-Keynesians on the other side have to object to any theory, that does not take liquidity preference into account. Money is tied to liquidity preference and uncertainty, and without them there would be nothing left of the Financial-Keynesian theory of prices.

Regarding our initial question: “What is Post-Keynesian Economics”, and the findings of this paper we can reduce the number of possible answers, because *there can not be such thing as a single coherent Post-Keynesian theory!* The only way to achieve this would be reducing heterodoxy by renaming one strand into PKE and referring to the others by their individual name. Besides that, we are left with the following options: PKE can still be regarded as a “broad church” of different, loosely or unrelated theories, or PKE can be viewed as a different approach to

economics, offering different theories and approaches to tackle economic questions joint by a common methodology [Methodologie], or meta-methodology as Dow calls it. As in other disciplines (like in physics the wave-particle dualism), it is argued that “there is no uniform way of tackling all issues in economics” (Harcourt and Hamouda [1988, p. 25]). Such a “Babylonian” approach (Dow [1999, p. 21]) would allow to apply different techniques [Methoden] and conduct analysis from varying perspectives. While such a common methodology has not been put in place yet, there are prominent proponents for such a “horses for courses approach”, like Heinrich Bortis, Sheila Dow, as well as Geoffrey Harcourt and Omar Hamouda.

In the light of the findings, there are two possible futures for what is today called PKE. If the different Post-Keynesian strands continue to develop “other boxes of tricks” judging them as the most superior way to tackle economic problems and defining PKE in their sense, PKE enters a dead-end road becoming a topic for the history of economic thought only. It does not make much of a difference here if all strands are referred to as PKE or if we name just one strand PKE.

The second path of investigating a common methodology – if ideological differences can be put aside – may lead the way for a young discipline as economics still is, and endanger the current mainstream in its methodological monoculture. Searching for an economic methodology does not have to repeat the Battle of Methods [Methodenstreit], but as the recent discussion in Germany – labelled as New Battle of Methods – has shown, there seems to be the need of a common and more open methodology. This need is not at all tied to Post-Keynesian economists, but to economists of all fields of interest.

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