Notes from Part I

1 See also Rogers (1989) on this distinction.
2 In Adam Smith (1776, pp. 37–46, 286–330) money was considered as commodity money which is introduced in order to facilitate commodity exchange minimizing transaction costs and allowing for the deepening of the division of labour and, hence, for faster productivity growth. The general level of prices is given by relative production costs of the money commodity and the commodities to be circulated. If paper money without intrinsic value is introduced, commodity money is pushed out of circulation, and there is no increase in the general price level. On monetary theory in Classical economics see further, for instance, Lapavitsas (1998) and Roncaglia (2005, pp. 196–203).
11 On the notions and meanings of ‘endogenous money’ in different theories see Palley (2002). We use the notion of ‘endogenous money’ as credit and money being endogenously created on demand by the banking sector in a credit economy.
13 This chapter draws on Hein (2004b, 2006a).
14 See Shaikh (1978a, 1983a) for surveys of Marxian crisis theories. The early attempts by Fritsch (1968) and De Brunhoff (1976) to reconstruct Marx’s theory of money and credit remained without major consequences for Marxian theories of accumulation and crisis.
Notes


17 There is, however, no agreement on this point of view in Marxian economics. De Brunhoff (1976), Crotty (1987), Evans (1997), Foley (1983, 1986b), and Weeks (1981) hold that Marx’s commodity theory of money is a correct, albeit historically restricted starting point for the analysis of money and therefore not applicable to modern economies. Lapavitsas (2000a) and Lapavitsas/Saad-Filho (2000) do not only consider commodity money to be an appropriate starting point for Marx’s theory of money and credit, but also argue that anchoring the monetary system on a money commodity would stabilize capitalist reproduction, also in modern times.

18 Therefore, there is also no reason to assume, as does Marx (1867, pp. 141–4), that ‘universal money’, money for international transactions, has to be a commodity.

19 In Marx’s commodity money system, however, there seems to be an effect of the quantity of money on the level of prices as soon as the money commodity in circulation is replaced by paper money (Marx 1867, pp. 125–30). An increase in the supply of paper money should increase the level of prices measured in units of paper money, because a unit of paper money now represents less units of the money commodity in circulation. This quantity theory relation, however, can only be sustained, if the representative of the money commodity is only used for circulation purposes. But this need not be the case. According to Marx (1867, p. 130), the role of ‘money as money’, which includes the function of money as a store of value (hoard), may also be assumed by the money representative. Hence, there need not be a strict relationship between the quantity of paper money and the price level, because the amount of paper money in hoards may be variable, and the quantity theory collapses.

20 Ricardo’s version of Say’s law differs from the Neoclassical version, because it is neither associated with full employment of labour nor is there an economic mechanism equating saving and investment. Ricardo’s version of Say’s law simply implies that saving and investment are identical (Garegnani 1978, 1979).


22 See Sowell (1972) for an overview of the ‘general glut’ controversy.

23 The role of credit in economic crisis is explored in more detail by Marx in Capital, Vol. III (Marx 1894, pp. 476–519), where he shows that the credit system may exacerbate economic crisis.


26 See also De Brunhoff (1976, pp. 60–72) and Foley (1986b, pp. 86–9). Lapavitsas (2000a) and Mollo (1999), however, do not seem to be aware that
hoarding and dishoarding of a money commodity can only play a limited role for money endogeneity in a growing economy.

27 We therefore disagree with Lapavitsas (1997, 2000b) and Lapavitsas/Saad-Filho (2000) who consider the credit system in Marx’s theory to be mainly a mechanism for the internal reallocation of idle funds among industrial and commercial capitalists.

28 In this respect Marx agrees with the Banking point of view in the ‘banking–currency controversy’ (Lapavitsas 1994; Mollo 1999).

29 See also Argitis (2001) and Pivetti (1987a) on the relation between profits of enterprise and interest in Marx’s theory.

30 This objection can also be applied to Panico’s (1980) attempt to reformulate Marx’s approach in a production price model.

31 See Argitis (2001), Panico (1980, 1988) and Pivetti (1987a) for similar results with respect to Marx’s theory of the rate of interest and Sardoni (1997a) for some ambiguities in Marx’s reasoning.

32 Of course, there may be feedbacks from accumulation to distribution in those models. See Amadeo (1986a) and Marglin (1984a) for more specific formulations.


34 See Amadeo (1986a) and Marglin (1984a) for comparisons of the orthodox Marxian model with Post-Keynesian models. For a more detailed discussion of Post-Keynesian models of growth and distribution see Lavoie (1992a, pp. 282–347). In Hein (2004a, pp. 59–87, 133–219) an extensive discussion of the orthodox Marxian model, the models by Kaldor and Robinson as well as different variants of the Kaleckian model is provided.

35 Whereas Robinson (1962) only assumes full utilization of the capital stock on the equilibrium growth path, Kaldor (1957, 1961) also assumes full employment of labour.

36 To achieve this, the propensity to save out profits of course has to exceed the propensity to save out of wages.


38 Of course, in a Neoclassical model this endogenous mechanism is the rate of interest in the capital market equilibrating leakages from the circuit (saving) and injections into it (investment).

39 See Eatwell (1983a, 1983b) and the contributions in Eatwell/Micate (1983) for an assessment of the Neoclassical elements in Keynes’s theory.

40 In the General Theory (Keynes 1936, pp. 230–1) argues ‘…that money has, both in the long and the short period, a zero, or at any rate a very small, elasticity of production…’ and ‘…that it has an elasticity of substitution equal, or nearly equal, to zero…’.
See Keynes (1973, pp. 201–23, 229–33), Hawtrey (1937), Ohlin (1937a, 1937b), and Robertson (1937, 1938a, 1938b, 1940).


44 On the work of Kalecki see Sawyer (1985) and on the relevance of Kaleckian economics for the Post-Keynesian research programme see the contributions in King (1996).


50 In the Pasinetti theorem (Pasinetti 1974, pp. 103–20) the rate of interest on accumulated workers’ saving equals the rate of profit in long-run natural growth equilibrium. For a discussion and extension of the Pasinetti theorem including a government sector see Panico (1997). He derives positive effects of both the rate of interest and the real rate of growth on the normal rate of profit.


52 In an edited book by Setterfield (2002) on Post-Keynesian growth theory there is no contribution dealing explicitly with the role of the interest rate, credit

53 Money being a social relation which is based on creditor–debtor contracts guaranteed by a social institution (the state) does not imply that money is the creature of the state coming into existence through taxing capabilities of the state defining the unit of tax payments, as modern chartalism supposes (Goodhart 1998; Wray 1998). For a discussion of the deficiencies of chartalism, see Rochon/Vernengo (2003).

54 See the Berlin school of Monetary Keynesianism, for instance Riese (1986), but also Chick (1996) and Lavoie (1996a).

55 See more detailed Smithin (2003a, pp. 25–35, 152–73). According to his view, the notion of a hierarchy of promises to pay and an inverse hierarchy of interest rates is not only valid within a currency area but it can also be applied to the relationship between different currencies and central banks issuing these currencies. See also Herr (1992).

56 Post-Keynesian and Monetary Circuit literature distinguishes between ‘finance’ and ‘funding’ (Carvalho 1992, p. 151) or between ‘initial finance’ und ‘final finance’ (Graziani 1989, p. 7; Lavoie 1992a, p. 159). Whereas ‘finance’ or ‘initial finance’ means the creation of short-run credit in order to initiate a production process, ‘final finance’ or ‘funding’ means the use of income generated by the production process in order to long-term finance newly produced investment goods, either through stocks and shares or through long-term credit. For a more detailed analysis see chapter 10.

57 For a survey on the relationship between the rate of interest and investment in Post-Keynesian and Neo-Ricardain models see, for instance, McKenna/Zannoni (1990). On the investment theories in Keynes and in Kalecki and the respective differences see Arena (1996), Fazzari/Mott (1986/87) and Lopez/Mott (1999).

58 See in particular the work by Minsky (1975, 1977) as well as the surveys by Crotty (1992) and Fazzari/Mott (1986/87).

59 See also Steindl (1952, pp. 113–24), who assumes an effect of the ‘gearing ratio’, the relationship between capital stock and own capital, on investment.

60 Dealing with the role of own capital in his Theory of Economic Dynamics, Kalecki (1954, pp. 91–5) neglects rising interest rates due to ‘increasing risk’ associated with increasing investment already for the single firm and rather supposes credit rationing.

61 A more detailed discussion of the required amount of finance for production and investment purposes and the sources of ‘initial’ and ‘final’ finance is provided in chapter 10 where we will analyse a monetary circuit.


63 What exactly this base rate is depends on institutional circumstances under which central banks operate.

Major elements of the horizontalist view have already been developed by Le Bourva in the French debate of the 1950s (Lavoie 1992b). On an English translation of this contribution see Le Bourva (1992).

See Wolfson (1996) for an elaboration of a Post-Keynesian theory of credit rationing based on asymmetric expectations of borrowers and lenders in a world with fundamental uncertainty. Credit rationing may occur due to differences in expectations between borrowers and lenders. Wolfson shows that credit standards and interest rates are both increased, if commercial banks’ state of confidence decreases. Credit rationing and increasing spreads are then moving together.

See also Palley (1996b).


For a description of the variables, see the explanation of Figure I.1.

For a description of the variables, see again the explanation of Figure I.1. See also Palley (1996b).

Notes from Part II

1 Surveys of Post-Keynesian growth and distribution theories can be found in Hein (2004a, pp. 133–219) and Lavoie (1992a, pp. 282–347). For recent developments see the contributions in Setterfield (2002) and in Argyros/Forstater/Mongiovi (2004).

2 Mark-up pricing in the banking sector, i.e. commercial banks marking up the central bank’s base rate in order to determine market rates of interest, is therefore irrelevant in Kalecki’s approach (Sawyer 2001a).


Note that this assumption is different from the one in the Kaldor–Robinson model where labour supply is taken as given or assumed to be growing at a constant rate (Marglin 1984a, 1984b, pp. 103–9).


7 This view on the tasks of commercial bank sector is similar to New Keynesian work (Greenwald/Stiglitz 2003, pp. 43–103). On the role of commercial banks in the Monetary Circuit School see, in particular, Bossone (2001, 2003).
8 We shall not consider the role of the state in a monetary circuit. For the sake of simplicity there are no taxes, no credit demand by the state, no public investment, public transfers or public interest payments. See Lavoie (1992a, pp. 165–9) for some basic considerations with respect to the integration of the state into a monetary circuit model.

9 For a more detailed treatment see the discussion of Post-Keynesian monetary theories in chapter 6.


12 Depreciations and replacement investment are not considered, because we have assumed above, for the sake of simplicity, that the capital stock does not depreciate.


14 See Keynes (1973, pp. 201–23, 229–33), Hawtrey (1937), Ohlin (1937a, 1937b), and Robertson (1937, 1938a, 1938b, 1940).

15 Graphically, in Figure I.1 in chapter 6, the credit demand curve which describes the creditworthy loan demand as an inverse function of the loan rate of interest, shifts to the left. With a horizontal loan supply curve we get a lower amount of credit granted to firms at a given rate of interest.


17 In his growth models, Kaldor also assumed full employment of labour, whereas Robinson, by and large, considered unemployment to persist also in long-run growth equilibrium.

18 The same is true for the relationship between the rate of capital accumulation and the wage rate. Faster accumulation is associated with a lower real wage rate, taking the technical conditions of production as given.

19 See Smithin (2003b) for a similar model. Lavoie (1995a) makes clear that the result for the Kaldor–Robinson model with competitive goods markets also applies to Eichner’s (1980) model with oligopolistic markets and target-rate-of-return pricing. Eichner assumes that the target rate of return is given by the internal means of finance required for an intended rate of accumulation. There is hence no direct influence of the interest rate on the mark-up, the real wage and the rate of profit. But there are indirect effects. If we assume an accumulation function that makes the decisions to invest depend on the difference between the rate of profit and the interest rate, we will get for Eichner’s model, which – like the Kaldor–Robinson model – assumes a normal rate of capacity utilization in the long period, a reduction in the rates of accumulation and profit and a rising real wage following an increase in the interest rate.

20 More extensive treatments of the basic Kaleckian distribution and growth models can be found in Blecker (2002), Hein (2004a, pp. 177–219), Lavoie (1992a, pp. 297–347), and Mott/Slattery (1994).


On pricing and distribution see also Kalecki (1971, pp. 43–77) and Asimakopulos (1988).

In a more detailed analysis in which productivity differentials between firms, differences in the mark-up between industries, and open economy aspects are taken into account, nominal wage increases may affect income shares in a Kaleckian approach also when the mark-up remains constant. See Kalecki (1954, pp. 28–41; 1971, pp. 156–64), Sylos-Labini (1979), and Hein (2004a, pp. 178–88, 2005) for elements of such an analysis.


In the introduction to Kalecki’s Selected Essays on the Dynamics of the Capitalist Economy 1933–1970, only published after he had passed away, we can read: ‘It is interesting to notice that the theory of effective demand, already clearly formulated in the first papers, remains unchanged in all the relevant writings, as do my views on the distribution of national income. However, there is a continuous search for new solutions in the theory of investment decisions, where even the last paper represents – for better or for worse – a novel approach’ (Kalecki 1971, p. viii). In the foreword to the English translation of his early works published in Poland in the 1930s, Studies in the Theory of Business Cycles, 1933–1939, there is a similar view: ‘The studies also reflect the most essential features of my theory of the business cycle. I modified in my later work only the factors determining investment decisions (...)’ (Kalecki 1969, p. 1). For a survey of investment functions in Kalecki’s models see Steindl (1981).

On Kalecki’s ‘principle of increasing risk’ see also chapter 6 as well as Arestis (1996b) and Sawyer (1985, pp. 101–6, 2001a).

In his latest work, Kalecki (1971, pp. 169–75) also attempted to introduce technical progress into the investment function. There, expected profitability of the latest capital stock vintages which incorporate a higher level of technical knowledge are of importance for investment decisions (Steindl 1981). Since we are assuming constant technical conditions of production in our model, we do not need to deal with this development.


See already Meyer/Kuh (1957) for empirical work on the effect of firms’ internal funds on investment questioning the Modigliani/Miller (1958) theorem. More recent studies with similar results are Fazzari/Mott (1986/87), in particular Fazzari/Hubbard/Peterson (1988), and also Ndikumana (1999).
For surveys on the empirical work confirming the effect of internal funds on firms’ investment see Hubbard (1998) and Schiantarelli (1996).

31 Our assumption is equivalent to assuming that dividend incomes, if they existed, would be completely reinvested into the firm.

32 This saving function is similar to the one used by Lavoie (1992a, p. 365, 1995a, p. 160), the only difference is that we explicitly consider the debt–capital ratio.

33 This section draws on Hein (2006b).


35 If rising interest rates have a positive effect on the real equilibrium, however, it might be difficult for firms to raise mark-ups because rising mark-ups will require weak unions and hence rising unemployment – and not falling.

36 See chapter 16 for an introduction of conflict inflation and related real debt effects into the present model.

37 This does not imply that rentiers’ saving is a precondition for credit and investment. On the contrary, rentiers’ saving as well as firms’ retained earnings are a result of production of investment and consumption goods initially financed by short-term credit, as we have shown in chapter 10 in our discussion of the monetary circuit.

38 Note that the stability of the goods market equilibrium implies \( \frac{h}{v}(1 - \rho - \beta) > 0 \).

39 From equation (II.53), assuming an interest-inelastic mark-up and the stability conditions for the short-run goods market equilibrium \( \left[ \frac{h}{v}(1 - \rho - \beta) > 0 \right] \) and the long-run debt–capital ratio \( \beta(1 - s_Z) - \rho \frac{h}{v}s_Z > 0 \) to hold, we get:

\[
\frac{\partial \lambda}{\partial i} = \frac{1}{i} \left\{ \frac{s_Z \left[ \frac{h}{v}(1 - \rho - \beta) \right]}{\beta(1 - s_Z) - \rho \frac{h}{v}s_Z} - \lambda \right\} .
\]

40 These results are different from Lavoie’s (1995a, pp. 164–73) ‘Minsky–Steindl model’ who gets a uniquely positive relation between the interest rate and the debt–capital ratio in the case of a stable long-run equilibrium.

41 Assuming an interest-inelastic mark-up and the stability conditions for the short-run goods market equilibrium \( \left[ \frac{h}{v}(1 - \rho - \beta) > 0 \right] \) to hold, we get from equation (II.53) if the long-run debt–capital ratio is unstable \( \beta(1 - s_Z) - \rho \frac{h}{v}s_Z < 0 \):

\[
\frac{\partial \lambda}{\partial i} = \frac{1}{i} \left\{ \frac{s_Z \left[ \frac{h}{v}(1 - \rho - \beta) \right]}{\beta(1 - s_Z) - \rho \frac{h}{v}s_Z} - \lambda \right\} < 0.
\]

42 These path-dependence features are absent from Lavoie’s (1995a, pp. 164–73) ‘Minsky–Steindl model’.


44 This process may be reinforced if commercial banks – in the face of rising indebtedness of firms – start to increase market rates beyond the initial increase in the central bank’s base rate.

45 This section draws on Hein (2007).

46 Note that the stability of the goods market equilibrium implies \( \frac{h}{v} - \beta > 0 \).

47 From equation (II.68), assuming an interest-inelastic mark-up and the stability conditions for the short-run goods market equilibrium \( \left[ \frac{h}{v} - \beta > 0 \right] \)
and the long-run debt–capital ratio \( \beta (1 - s_Z) - \theta \frac{h}{v} > 0 \) to hold, we get:

\[
\frac{\partial \lambda}{\partial i} = \frac{1}{i} \left[ \frac{s_Z (\frac{h}{v} - \beta )}{\beta (1 - s_Z) - \theta \frac{h}{v} - \lambda} \right].
\]

From equation (II.68), assuming an interest-inelastic mark-up, a stable short-run goods market equilibrium \( \frac{h}{v} - \beta > 0 \) and an unstable long-run debt–capital ratio \( \beta (1 - s_Z) - \theta \frac{h}{v} > 0 \), we get:

\[
\frac{\partial \lambda}{\partial i} = \frac{1}{i} \left[ \frac{s_Z (\frac{h}{v} - \beta )}{\beta (1 - s_Z) - \theta \frac{h}{v} - \lambda} \right] < 0.
\]

Notes from Part III

1. This chapter draws on Hein (2006c).
4. Setterfield’s (2004) Post-Keynesian extension of the New Consensus model, however, assumes away an inflation barrier and hence a NAIRU. He asserts that there is a long-run stable relation between the rate of growth and the inflation rate, and hence no acceleration of inflation at a certain point.
5. This simplification precludes that the size of the capital stock may have an effect on the NAIRU, as in Arestis/Sawyer (2004, pp. 71–99, 2005) and Sawyer (2001c, 2002, 2006).
7. See Arestis/Sawyer (2004, pp. 73–87, 2005) and Sawyer (2002, 2006) for conflicting claims models with an increasing mark-up when high levels of capacity utilization are achieved. See also Lavoie (1992a, pp. 391–7) for a discussion of different cases with respect to relative bargaining powers of firms and labour unions.
8. For the macroeconomic ‘paradox of debt’ in Kaleckian and Post-Kaleckian distribution and growth models with constant prices see chapter 13.
9 Even if we concede that in the face of accelerating inflation the behaviour of rentiers and firms may change, this will only temporarily inhibit the convergence process of the GERE towards the SIRE. Rentiers’ consumption behaviour may change and the saving propensity out of rentiers’ income may decline when inflation accelerates. For the ‘puzzling case’ to exist, however, the saving propensity of rentiers already has to be very low, so that there is only small room for manoeuvre. The same argument applies to the responsiveness of investment with respect to interest payments.


13 The productivity-enhancing effects of investment in capital stock is pointed out in demand-led growth models. See Dutt (2003, 2006a), Kaldor (1957), Leon-Ledesma/Thirlwall (2002), and the papers in Setterfield (2002). Growth is primarily demand-driven because labour force and productivity growth respond to demand. This view has been applied by Lavoie (2004) in his Post-Keynesian alternative to the New Consensus models in which the natural rate of growth is endogenous to the actual rate of growth.

14 Our argument is different from Freedman/Harcourt/Kriesler’s (2004) who also derive a horizontal long-run Phillips curve. They use the labour market hysteresis argument: In order to keep inflation down, a certain amount of short-term unemployment is required irrespective of long-term unemployment. But as short-term unemployed under the condition of persistent unemployment inevitably become long-term unemployed, the total rate of unemployment required to stabilise inflation has to increase.

15 Of course, central banks raising the real interest rates may also prevent the adjustment process, as we have argued above.

16 This chapter draws on Hein (2006d).

17 See Lavoie (1995b, 1996b, 2003b) for a review and discussion of the relevant literature.


Notes from Summary and Conclusions

1 See Lavoie (2006b) for a similar view on the role of the Kaleckian distribution and growth models for the further development of heterodox theory.

2 For a preliminary but incomplete attempt see Hein/Ochsen (2003).

3 On technical progress and productivity issues see also the recent work by Bhaduri (2006b, 2006c), Cassetti (2003), Dutt (2003, 2006a), Lima (2000), and Naastepad (2006). On open economy issues see Bhaduri/Marglin (1990),

4 See Boyer (2000), Bhaduri/Laski/Riese (2006), Dutt (2006b), Stockhammer (2004b, 2004c, 2005/6) and van Treeck (2007) for recent contributions in these areas. See also the stock-flow consistent modelling approach pioneered by Lavoie/Godley (2001/2) and Godley/Lavoie (2006).


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