An open-economy Kaleckian model with public expenditure*

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October 2018

Abstract

This paper proposes an open-economy Kaleckian model taking explicitly into account current-account disequilibrium with public expenditure. The model incorporates an explicit role for current-account deficit or surpluses and the net foreign asset position as well as the evolution of public and foreign debt in the saving–investment equilibrium. In the long run, the question of the sustainability of current-account imbalances arises, as well as that of the public debt. The model exhibits stable or unstable equilibriums in this respect, depending on the structural parameters. The paper also investigates whether an austerity policy, which would imply a drop in public expenditure, would actually lead to an improvement or a worsening of the economic situation of national economies.

1 Introduction

The post-Keynesian model of growth and distribution[1] has been extended to include international trade and financial flows (Blecker 2011, Nah & Lavoie 2016) and public expenditure (Allain 2015, Franke 2017, Hein 2016). This paper includes both in order to analyse how the dynamics of public debt and net foreign assets can be incorporated into the model. Many models that take into account foreign trade either assume a balance of payment constraint or neglect the influence that a foreign trade imbalance may have on the national macroeconomic dynamics. The model presented in this paper takes explicitly into account the impact of a current account disequilibrium on the long run dynamics of the economy.

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[1]Lavoie 2014, ch. 6.

This extension is partly motivated by the recent debate on the size of Germany's current account surplus (Priewe 2018) and the difference between the export-led growth trajectories of Northern European economies contrasted with those of the Southern periphery (Celi et al. 2018), as well as the questions raised by the pursuit of austerity policies in export-led countries, Germany in particular. Neo-mercantilist and austerity policies are related because Germany's massive current account surplus (about 8% of GDP in 2017) is partly a consequence of the quest of the German government for a balanced budget, even at the cost of welfare state retrenchment and low investment in public infrastructures. Another influence on the current account disequilibrium is the weakness of domestic demand fuelled by wage restraint, a consequence of the evolution of wage bargaining for the core export industry workers as well as the impact of the labour market liberalisation reforms implemented in the 2000s for the fringe service employees (Hassel 2012). The wage and fiscal restraint policies implemented during the 2000s have made it possible to sustain a current account surplus that resulted in a positive net foreign asset position representing ca. 60% of GDP. The income flow from this foreign asset position cannot be neglected and one may wonder whether Germany, in addition to being the maufacturing powerhouse of Europe, is not at the same time becoming a rentier economy.

The paper is organised as follows. After having presented the basic Kaleckian model, foreign trade and public expenditure functions are incorporated. The equilibrium distinguishes short-term quantity adjustments, medium-term price adjustments and the long run dynamics of public debt and net foreign asset position. Finally, two policy changes are considered: a decrease in the wage traget of workers as a consequence of wage restraint and labour market liberalisation policy, and a decrease in the level of public expenditure.

2 Basic model

This section presents the basic model, which is an extension of the now almost traditional Kaleckian model originally proposed by Rowthorn (1981), Dutt (1984) and various authors including Marglin & Bhaduri (1990), and developed over the years by numerous post-Keynesian scholars (Lavoie 2014, ch. 6).

2.1 The neo-Kaleckian growth model

Production is made with with a fixed-coefficient technology, A is labour productivity and ν is the capital/output ratio at the normal (reference) utilisation rate. Firms apply mark-up pricing on their unit labour costs.

$$
\begin{aligned}
Y &= \min\left(AL, \frac{K}{\nu}\right) \\
p &= (1+m)\frac{w}{A}
\end{aligned}
$$

Factor shares σ_π(profits) and σ_w (wages) can be expressed as functions of the mark-up m

$$
\begin{aligned}
\sigma_\pi &= \frac{m}{1+m} \\
\sigma_w &= \frac{1}{1+m}
\end{aligned}
$$

Y^n is the "full" or "normal" (reference) production level, ν the capital /output ratio at a normal utilisation rate $\frac{K}{Y^n}$ and u the utilisation rate $\frac{Y}{Y^n}$. The profit rate is:

$$r = \frac{\Pi}{K} = \sigma_\pi \frac{u}{v}$$

Denoting g^s the saving/capital ratio (S/K), with s the saving rate, one may express it as:

$$g^s = \frac{S}{K} = s\sigma_\pi \frac{u}{v}$$

If one differentiates between saving out of profits and saving out of wages, this can be written as:

$$g^s = \left[(s_\pi - s_w)\,\sigma_\pi + s_w\right]\frac{u}{v}$$

Following Marglin & Bhaduri (1990), the investment function is supposed to depend on the utilisation rate u and profitability (the profit share σ_π):[2]

$$g^i = \gamma + \gamma_u u + \gamma_\pi \sigma_\pi$$

2.2 introducing foreign trade

Foreign trade has been introduced in Kaleckian models by means of a trade balance function in the macroeconomic equilibrium (Blecker 1989, 1999, 2011). Trade balance is:

$$TB = X - e_R M$$

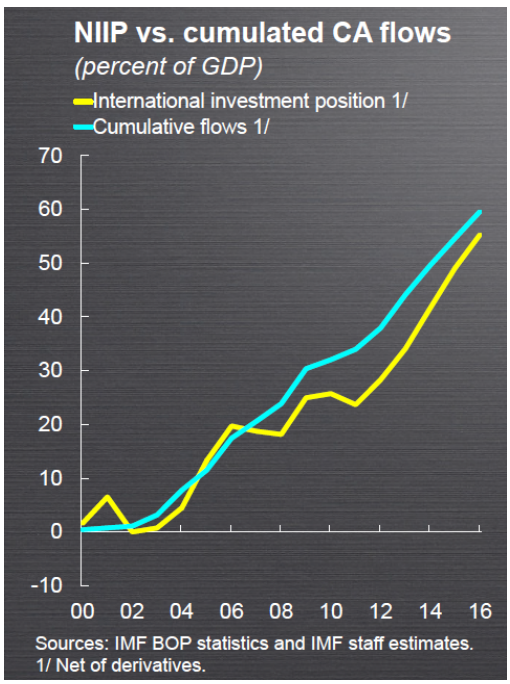
[2] γ can be negative (cf. Lavoie 2014), and indeed must be if one wants the possibility of a "profit-led" regime.

X and M are real exports and imports, and e_R is the real exchange rate. Trade balance and current account (CA) in real terms will be distinguished in what follows. Denoting F the stock of net foreign assets, supposed to be denominated in domestic currency, and r^* the real return on these assets, one has:

$$CA = TB + r^* F$$

Considering a stock of foreign assets in domestic currency is a simplification. One abstains from taking into account the impact of foreign currency changes as well as possible changes in asset prices. The latter may have an impact in times of financial crises such as the 2008 Great Depression, but in the longer run, there is little difference between the net investment position and the cumulated current account flows, as shown in Figure 1.

Figure 1. Net international investment position as percent of GDP
and cumulated current account flows as percent of GDP (from Obstfeld 2018)



With the current account taken into account, the investment-saving equilibrium relative to the capital stock thus becomes:

$$g^s = g^i + ca = g^i + tb + r^* f$$

with all variables expressed relative to the capital stock: $g^s = \frac{S}{K}$, $g^i = \frac{I}{K}$, $ca = \frac{CA}{K}$, $tb = \frac{TB}{K}$, $f = \frac{F}{K}$

The trade balance relative to the capital stock is specified as depending negatively on the utilisation rate u and positively on the real exchange rate $e_R = \frac{ep_f}{p}$. Adopting a linear specification:

$$tb = \chi + \phi_e e_R - \phi_u u$$

2.3 Public expenditures and budget policy

Introducing G as real public expenditure and T as real tax receipt, $G-T$ is the real primary budget balance and BB the budget balance. The budget balance in nominal terms reads:

$$pBB = p\left(G-T\right) + iD = \dot{D}$$

D is the level of public debt, i is the interest rate on public debt.

Defining the real level of public debt relative to the capital stock $d = \frac{D}{pK}$, the real budget balance relative to the capital stock is

$$bb = \frac{G}{K} + id - \frac{T}{K}$$

One can express the dynamic evolution of public debt as:

$$\begin{aligned} \dot{d} &= \frac{\dot{D}}{pK} - d\left(\hat{p} + g_K\right) \\ &= \frac{G}{K} + id - \frac{T}{K} - d\left(\hat{p} + g_K\right) \end{aligned}$$

$\hat{p}$ is the inflation rate.[3]

The specification for public expenditure is taken from Franke (2017) and has two components. The first one is supposed to grow in step with normal output Y_n. This represents the structural component of public expenditure, reflecting the socio-political choices of the country regarding the size of the public sector. The second component reflects macroeconomic stabilisation policy; the government increases public expenditure in times of underutilisation of productive capacity, when $Y < Y_n$, or decreases it in a boom, when $Y > Y_n$.

$$\begin{aligned} G &= \gamma_n Y_n - \gamma_c\left(Y - Y_n\right) \\ \frac{G}{K} &= \frac{\gamma_n}{v} - \gamma_c\left(\frac{u}{v} - \frac{1}{v}\right) \end{aligned}$$

Turning to taxation, for the sake of simplification, only wages (W) and profits (Π), not financial income, are supposed to be taxed, with respective rate τ_w and τ_π.

$$T = \tau_w W + \tau_\pi \Pi$$

$$\begin{aligned} \frac{T}{K} &= \tau_w \frac{W}{Y}\frac{Y}{K} + \tau_\pi \frac{\Pi}{Y}\frac{Y}{K} \\ &= \left(\tau_w \sigma_w + \tau_\pi \sigma_\pi\right)\frac{u}{\nu} \end{aligned}$$

[3] A^will signal a growth rate.

Net financial (interest on public and foreign debt) income is supposed to accrue to capitalists. The saving rate on that income is therefore s_π. Taking taxation into account, the saving and investment functions become:

$$\begin{aligned} g^s &= \left[s_\pi\left(1-\tau_\pi\right)\sigma_\pi + s_w\left(1-\tau_w\right)\sigma_w\right]\frac{u}{v} + s_\pi\left(id + i^* f\right) \\ g^i &= \gamma + \gamma_u u + \gamma_\pi\left(1-\tau_\pi\right)\sigma_\pi \end{aligned}$$

2.4 Short run equilibrium

The investment-saving equilibrium can now be written taking into account foreign trade and public expenditure. The saving - investment equation must now become a saving - investment, current account and budget balance equilibrium.

The IS equilibrium reads

$$\begin{aligned} g^s &= g^i + bb + ca = g^i + bb + tb + r^* f \\ & \left[s_\pi\left(1-\tau_\pi\right)\sigma_\pi + s_w\left(1-\tau_w\right)\sigma_w\right]\frac{u}{v} \\ +s_\pi\left(id + r^* f\right) &= \\ & \gamma + \gamma_u u + \gamma_\pi\left(1-\tau_\pi\right)\sigma_\pi \\ & +\frac{\gamma_n}{v} - \gamma_c\left(\frac{u}{v} - \frac{1}{v}\right) \\ & +id - \left(\tau_w\sigma_w + \tau_\pi\sigma_\pi\right)\frac{u}{\nu} \\ & +\chi + \phi_e e_R - \phi_u u + r^* f \end{aligned}$$

The excess demand for goods (EDG) is $g^i + bb + ca - g^s$. The Keynesian stability condition (cf. Lavoie 2014) demands that $\frac{\partial EDG}{\partial u} < 0$, which is expressed as:

$$KSC = \gamma_u - \phi_u - \frac{s_\pi\left(1-\tau_\pi\right)}{\nu} - \frac{\gamma_c + \tau_\pi}{v} - \omega\frac{s_w\left(1-\tau_w\right) + \tau_w - s_\pi\left(1-\tau_\pi\right) - \tau_\pi}{Av} < 0$$

noting that $\sigma_w = \frac{\omega}{A}$where $\omega \equiv \frac{w}{p}$ is the real wage. Foreign trade sensitivity to capacity utilisation (ϕ_u) tends to stabilise the economy in the short run. As expected, the countercyclical action of the government (γ_c) does that too. As in closed economy models, saving and taxation have a stabilising impact whereas the real wage[4] and the sensitivity of investment to capacity utilisation have a destabilising effect.

The IS curve writes as

[4]When $s_w\left(1-\tau_w\right) + \tau_w < s_\pi\left(1-\tau_\pi\right) + \tau_\pi$

$$
\begin{aligned}
u &= \frac{a_0\omega - b_0}{c_0\omega - d_0} = \frac{a_0\omega - b_0}{AvKSC} \\
a_0 &= v\gamma_\pi(1-\tau_\pi) > 0 \\
b_0 &= A\left\{(id + r^* f)\, v\,(1-s_\pi) + \gamma_c + \gamma_n + v\left[\gamma + \gamma_\pi\,(1-\tau_\pi) + \chi + \phi_e e_R\right]\right\} > 0 \\
c_0 &= s_\pi\,(1-\tau_\pi) + \tau_\pi - s_w\,(1-\tau_w) - \tau_w > 0 \\
d_0 &= A\left[v(\phi_u - \gamma_u) + s_\pi(1-\tau_\pi) + \gamma_c + \tau_\pi\right] > 0
\end{aligned}
$$

For u to be positive, one must have $a_0\omega - b_0 < 0$ because $KSC < 0$.

The short-term equilibrium exhibits the traditional wage-led and profit-led regimes according to parameters: The macroeconomic regime is wage led (profit-led) when $b_0c_0 - a_0d_0 > 0$ (< 0).

Figure 2a. Profit-led demand regime

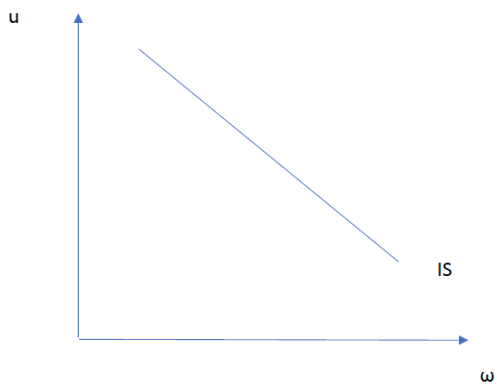
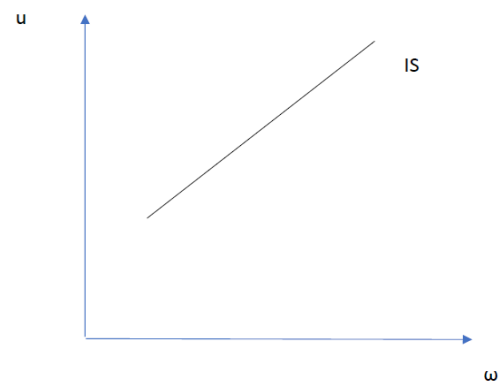


Figure 2b. Wage-led demand regime



Whatever the regime, the IS curve moves up (u increases for a given ω) with ϕ_e, e_R, γ_n, χ, γ, γ_π, f, i. The effect of i^*depends on the sign of f, i.e. whether the country is a net foreign creditor or debtor. The curve moves down with saving and tax rates. The growth regime possibilities are the following:

The three possibilities for a regime are rather standard in post-Keynesian models:

- wage-led demand and wage led growth $b_0c_0 - a_0d_0 > 0$ and $-\frac{\gamma_\pi(1-\tau_\pi)}{A} + \gamma_u \frac{b_0c_0 - a_0d_0}{(c_0\omega - d_0)^2} > 0$
- wage-led demand and profit-led growth $b_0c_0 - a_0d_0 > 0$ and $-\frac{\gamma_\pi(1-\tau_\pi)}{A} + \gamma_u \frac{b_0c_0 - a_0d_0}{(c_0\omega - d_0)^2} < 0$
- profit-led demand and profit-led growth $b_0c_0 - a_0d_0 < 0$

2.5 Medium run equilibrium

In the medium run, prices adjust and factor shares are endogenised. The next subsections specify price, wage, and exchange rate adjustments.

2.5.1 inflation

Price changes are assumed to follow the conflicting-claims model (Lavoie 2014, ch.8). Trade unions have a certain degree of labour market power and can obtain some increases in money wage rates. On the other hand, firms can limit the consequences for their profitability and shift a certain part of the wage hikes onto consumers through price increases. The conflicting-claim model works as follows. Workers have a target for the real wage ω_w and firms have a target for the markup, which is equivalent to having a target for the real wage ω_f.

$$\omega \equiv \frac{w}{p} = \frac{A}{1+m}$$

The wage price spiral is given by a couple of growth equations for wage and price respectively. In the most general specification, wage increases are a function of the deviations of the actual wage share from the workers' target, augmented by an inflation term and a real exchange rate term reflecting imported goods' inflation.

$$\widehat{w} = \Omega_\omega \left(\omega_w - \omega\right) + \Omega_p \widehat{p} + \Omega_e e_R$$

Price increases are a function of the deviation of the actual wage share from the (more or less implicit) wage share target of firms, augmented by a nominal wage increase term.

$$\widehat{p} = \Psi_\omega \left(\omega - \omega_f\right) + \Psi_w \widehat{w}$$

The simplest version of the conflicting-claims model specifies the following restrictions on the parameters:

$$\Omega_p = \Omega_e = \Psi_w = 0$$

These restrictions are adopted in what follows.

endogenous real wage targets The wage share targets can themselves evolve with the economic situation. A simple formulation is a pseudo-Phillips curve mechanism whereby unemployment impacts nominal wage growth. More basically, the wage share target of workers can be expressed as a function of the capacity utilisation u. This corresponds implicitly to an employment level because of the fixed technological coefficients assumption.

$$\omega_w = \omega_{w0} + \Omega_u u$$

In an open economy setting, the target real wage (or markup) of firms can be considered to be negatively influenced by the real exchange rate (Blecker 2011):

$$\omega_f = \omega_{f0} - \Phi_e e_R$$

A simplified keeps exogenous the wage share target of workers:

$$\Omega_u = 0$$

open economy inflation As in Blecker (2011), the nominal exchange rate e moves according to a "crawling peg" specification:

$$\widehat{e} = \Gamma\left(\overline{e_R} - e_R\right)$$

$\overline{e_R}$ is the target *real* exchange rate and Γ the speed of adjustment.

The dynamic evolution of the real exchange rate in growth rate is, by definition:

$$\widehat{e_R} = \widehat{e} + \widehat{p_f} - \widehat{p}$$

In the medium run, wage and profit shares are stabilised. The equilibrium distribution is defined by to $\dot{\omega} = 0$ and gives the equilibrium real exchange rate:

$$e_R = \frac{\Omega_\omega \omega_{w0} + \Psi_\omega \omega_{f0} - (\Omega_\omega + \Psi_\omega)\omega}{\Psi_\omega \Phi_e - \Omega_e} \tag{DC}$$

The determination of the real exchange rate and the equilibrium wage share/real wage is identical to that in Blecker (2011). The above solution for the real exchange rate as a function of ω is the "distribution curve" DC. Following Blecker (2011)'s assumption,[5] $\Psi_\omega \Phi_e - \Omega_e > 0$ and the DC curve is downward-sloping in the (ω, e_R) plane.

The equilibrium real exchange rate ($\widehat{e_R} = 0$) gives what Blecker (2011) calls the foreign exchange curve (FE), which is downward-sloping in the (ω, e_R) plane:

$$e_R = \overline{e_R} + \frac{\widehat{p_f} - \Psi_\omega\left(\omega - \omega f0\right)}{\Gamma + \Psi_\omega \Phi_e} \tag{FE}$$

This is what Blecker (2011) calls the foreign exchange curve (FE).[6] Its slope is negative $(-\Psi_\omega)$.

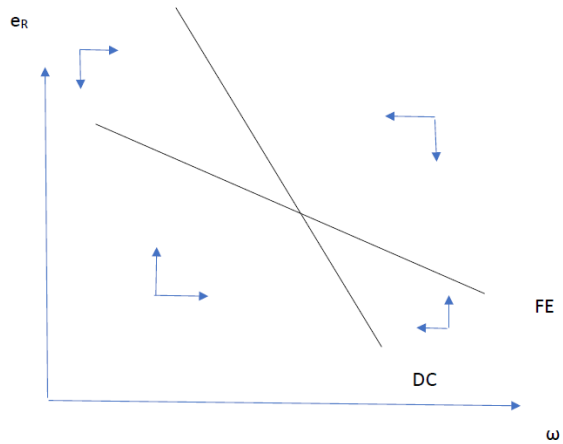
One may finally express the medium run equilibrium values for the real exchange and wage rates

$$\begin{aligned}
e_R^* &= \frac{\left[\overline{e_R}\left(\Gamma + \Psi_\omega \Phi_e\right) + \widehat{p_f}\right]\left(\Psi_\omega + \Omega_\omega\right) - \Omega_\omega \Psi_\omega\left(\omega_{w0} - \omega_{f0}\right)}{\Gamma(\Psi_\omega + \Omega_\omega) + \Psi_\omega(\Omega_e + \Phi_e \Omega_\omega)} \\
\omega^* &= \frac{\left[\overline{e_R}(\Gamma + \Phi_e \Psi_\omega) + \widehat{p_f}\right]\left(\Omega_e - \Phi_e \Psi_\omega\right) + \Psi_\omega\left(\Gamma + \Omega_e\right)\omega f0 + \left(\Gamma + \Phi_e \Psi_\omega\right)\omega_{w0}\Omega_\omega}{\Gamma(\Omega_\omega + \Psi_\omega) + \Psi_\omega(\Omega_e + \Phi_e \Omega_\omega)} \\
\sigma_w^* &= \frac{\omega^*}{A}
\end{aligned}$$

[5] 'the upward-sloping DC curve [...] would rarely be found in reality, since it would imply that a currency depreciation (rightward shift in FE) would cause the medium-run equilibrium wage share to rise; this would require an extremely large response of wages to the depreciation (which might be observed only in countries with very strong labour unions and indexed wages). Much more commonly, currency depreciations tend to reduce real wages and the wage share.' Blecker (2011, 13-14).

[6] Blecker (2011)'s figures represent the FE and DC schedule in the (real exchange rate, wage share) plan. The equations above give an equilibrium in the (real exchange rate, real wage) plan. But since $\sigma_w = \frac{wL}{pY} = \frac{wL}{pAL} = \frac{\omega}{A}$, the result is qualitatively identical when A is fixed.

Figure 3. Medium run equilibrium



The inflation rate can be deduced from the conflicting-claims equation:

$$\widehat{p} = \frac{\Psi_\omega \left\{\Gamma\Omega_\omega \left(\omega_{w0} - \omega_{f0}\right) + \left[\overline{e_R}(\Gamma + \Phi_e\Psi_\omega) + \widehat{p_f}\right]\left(\Omega_e + \Phi_e\Omega_\omega\right)\right\}}{\Gamma(\Psi_\omega + \Omega_\omega) + \Psi_\omega(\Omega_e + \Phi_e\Omega_\omega)}$$

2.6 Long run equilibrium

Turning to the long run equilibrium, the evolution of the public and foreign debts are given respectively by the budget deficit and the current account:

$$\begin{aligned} \dot{D} &= p\left(G - T\right) + iD \\ \dot{F} &= X - e_R M + r^* F \end{aligned}$$

Reexpressing the dynamics of public debt and net foreign assets relative to the capital stock gives:

$$\begin{aligned} \dot{d} &= \frac{\dot{D}}{pK} - d\left(\widehat{p} + g_K\right) = bb + \left(i - \widehat{p} - g_K\right) d \\ \dot{f} &= \frac{\dot{F}}{K} - f g_K = tb + \left(r^* - g_K\right) f \end{aligned}$$

Taking account of the short and medium run equilibrium values for the different variables, one may express the dynamics of d and f as:

$$\begin{aligned} \dot{d} &= \frac{\gamma_c + \gamma_n}{v} + \frac{u\left(d, f\right)}{v}\left[\left(\tau_\pi - \tau_w\right)\sigma_w - \left(\gamma_c + \tau_\pi\right)\right] - d\left[\widehat{p} - i + \gamma + \gamma_u u\left(d, f\right) + \gamma_\pi\left(1 - \tau_\pi\right)\left(1 - \sigma_w\right)\right] \\ \dot{f} &= \chi + \phi_e e_R - \phi_u u\left(d, f\right) + f\left\{r^* - \left[\gamma + \gamma_u u\left(d, f\right) + \gamma_\pi\left(1 - \tau_\pi\right)\left(1 - \sigma_w\right)\right]\right\} \end{aligned}$$

The slope of the $\dot{d}=0$ curve is given by the sign of $\left.\frac{dd}{df}\right|_{\dot{d}=0}$. This is the sign of:

$$-\frac{\left[-d\gamma_u - \frac{\gamma_c+\tau_\pi}{v} + \frac{(\tau_\pi-\tau_w)\omega}{Av}\right] u'_f}{-\left[\widehat{p}-i+g_K\right] + u'_d\left[-d\gamma_u - \frac{\gamma_c+\tau_\pi}{v} + \frac{(\tau_\pi-\tau_w)\omega}{Av}\right]}$$

u'_f and u'_d are positive, $-d\gamma_u - \frac{\gamma_c+\tau_\pi}{v} + \frac{(\tau_\pi-\tau_w)\omega}{Av}$ is most likely negative and $\widehat{p}-i+g_K$ positive for sustainable growth regimes. Therefore, the $\dot{d}=0$ curve is most likely downward-sloping.

The sign of $\left.\frac{dd}{df}\right|_{\dot{f}=0}$ is more ambiguous:

$$\frac{r^* - g_K - (\gamma_u+\phi_u)\, u'_f}{u'_d\,(\gamma_u f + \phi_u)}$$

and the $\dot{f}=0$ curve may be upward or downward sloping. One may sum up the partial derivatives:

$$\begin{aligned}
\frac{\partial \dot{d}}{\partial d} &= i - g_K - \widehat{p} + \frac{i}{KSC}\left\{d(1-s_\pi)\gamma_u + \frac{(1-s_\pi\pi)\left[A(\gamma_c+\tau_\pi)+(\tau_w-\tau_\pi)\omega\right]}{Av}\right\} < 0 \\
\frac{\partial \dot{d}}{\partial f} &= \frac{(1-s_\pi)\left[A(\gamma_c+\gamma_u vd+\tau_\pi)+(\tau_w-\tau_\pi)\omega\right] r^*}{AvKSC} < 0 \\
\frac{\partial \dot{f}}{\partial d} &= \frac{i(1-s_\pi)(f\gamma u+\phi_u)}{KSC} < 0 \qquad \text{except if } f \ll 0 \\
\frac{\partial \dot{f}}{\partial f} &= -g_K + \left[1+(1-s_\pi)\frac{\gamma_u f+\phi_u}{KSC}\right] r^* \lessgtr 0
\end{aligned}$$

To sum up, one may consider that the Jacobian is of the following type: $J = \begin{pmatrix} - & - \\ - & +/- \end{pmatrix}$.

if $J = \begin{pmatrix} - & - \\ - & + \end{pmatrix}$, $\Delta < 0$, the equilibrium is a saddle point.

if $J = \begin{pmatrix} - & - \\ - & - \end{pmatrix}$, $Tr\,(J) < 0$. the fixed point is a saddle point (if $\Delta < 0$) or is locally stable (if $\Delta > 0$).

The possible configurations are illustrated in Figures 4a-c.

Figure 4a. Saddle point (in)stability 1

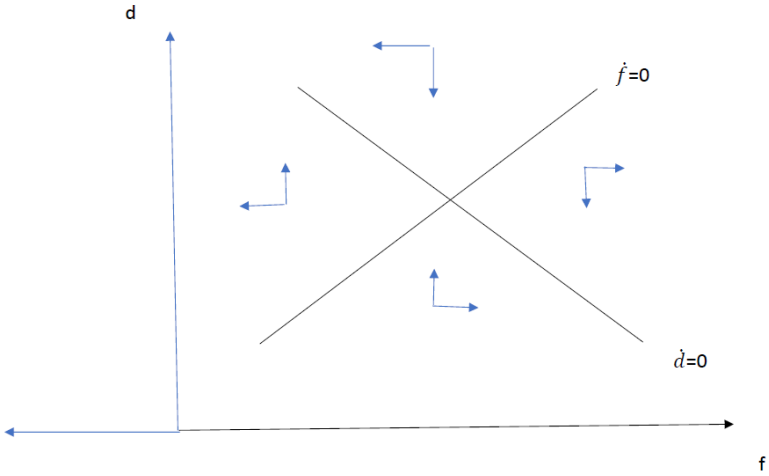


Figure 4b. Saddle point (in)stability 2

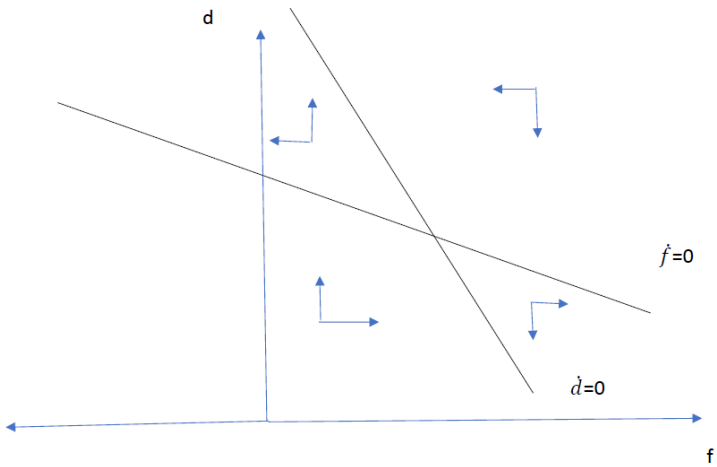
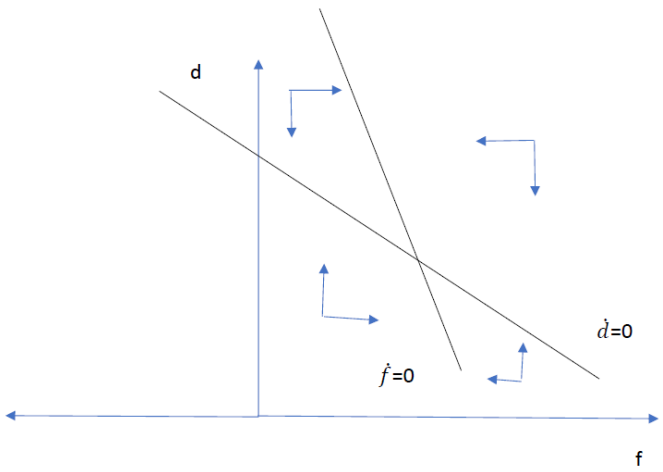


Figure 4c. (local) stability



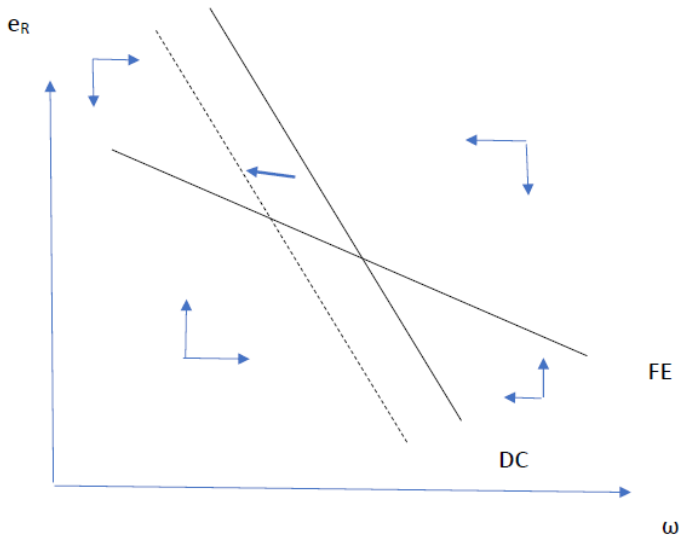
3 Policy changes

This section considers the impact of two types of policy changes: a decrease in the wage share following, for instance, labour market liberalisation measures, and a decrease in public expenditure, as a consequence, for instance, of an attempt to balance the budget.

3.1 wage repression

Let us suppose that labour market liberalisation reforms have for consequence that workers lower their wage increase demands and that this leads to a lower wage real wage target ω_{w0}. The effect on the real wage is straightforward: the medium run equilibrium real wage decreases and the real exchange rate increases (Figure 5). This unambiguously increases the rate of capacity utilisation in a profit-led regime. The effect is more ambiguous in a wage-led regime. The decrease in ω has a recessionary effect mitigated by the increased price competitiveness effect which shifts the IS curve up.

Figure 5. The impact of labour market liberalisation



3.2 Austerity

Turning now to the impact of a decrease in public expenditure, the consequences of a decrease in γ_n, the structural parameter reflecting the choices regarding the size of the public sector, can be assessed. Decreasing γ_n has a direct effect of the IS curve: u decreases, $du = -\frac{\delta\gamma_n}{\nu KSC} < 0$. There is no effect on the medium run equilibrium in the absence of a Phillips-curve effect on wages. The impact on the long run equilibrium can be deduced from the effect on the $\dot{d} = 0$ and $\dot{f} = 0$ loci.

$$\begin{aligned}
\frac{\partial \dot{d}}{\partial \gamma_n} &= \frac{1}{v} + \frac{1}{|KSC|\, v}\left\{\frac{(\tau_\pi - \tau_w)\,\sigma_w}{v} - \frac{(\gamma_c + \tau_\pi)}{v} - d\gamma_u\right\} \\
&= \frac{1}{v}\left[1 + \frac{(\tau_\pi - \tau_w)\,\sigma_w}{|KSC|\, v}\right] - \frac{1}{|KSC|\, v}\left\{\frac{(\gamma_c + \tau_\pi)}{v} + d\gamma_u\right\}
\end{aligned}$$

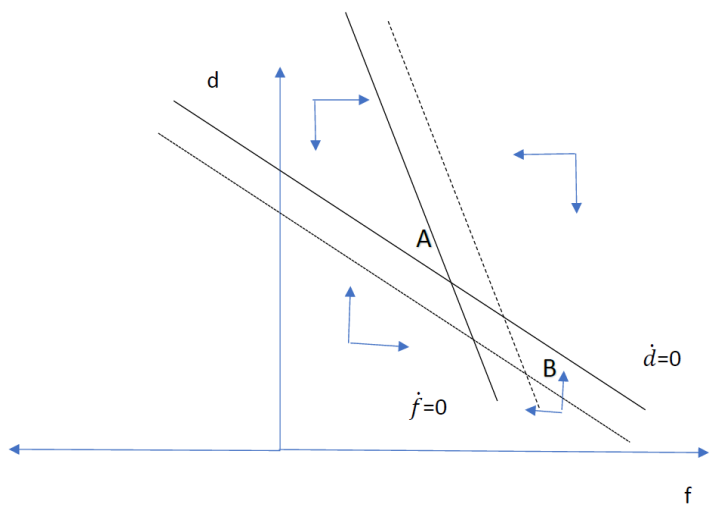
Ther are two effects in opposite directions. The first one is a direct effect: the decrease in public expenditure slows down public debt accumulation ($\frac{1}{v}\left[1 + \frac{(\tau_\pi - \tau_w)\sigma_w}{|KSC|v}\right]$). On the other hand, a negative effect on the rate of capacity utilisation raises public debt accumulation all the more that public debt is high, investment is sensitive to capacity utilisation and the countercyclical policy intervention is strong. When the first effect dominantes, the $\dot{d}$ moves downward; it moves upward when the second effect is stronger

The effect on the $\dot{f}$ curve can be read from the sign of:

$$\frac{\partial \dot{f}}{\partial \gamma_n} = -\left(\phi_u + f\gamma_u\right)\frac{1}{|KSC|\,v}$$

If f is sufficiently negative (smaller than $-\phi_u/\gamma_u$), the $\dot{f}$ locus moves to the left. Otherwise, when f is positive or not too negative, it moves to the right.

Figure 6. A possible effect of a decrease in public expenditure



One may consider that the policy choice of Germany corresponds to the expectation of a move such as that represented in Figure 6, with a move from A to B. This supposes that the economy finds itself in a stable configuration. The improvement of the growth regime following a decrease in public expenditure hinges on the absence of a recessionary effect, too high a level of public debt and a positive or moderately negative contribution of net foreign assets to economic activity. If the long-run equilibrium is stable, the economy moves to an equilibrium with a lower debt and a higher net foreign asset position. This would make the economy increasingly relying on its foreign assets.

4 Conclusion

This paper has considered the consequences of integratuing foreign assets and public debt for the lon run dynamics of a Kaleckian economy. The economy may find itself in stable or unstable configurations. Restricting to the former possibility, one sees that the logic of an economic policy based on wage restraint and lower public expenditure for an export-led country corresponds to an increased foreign competitiveness

compensating a weakened domestic demand, and income from foreign assets accumulated through current account surpluses compensating the downward wage pressure. When the economy finds itself in a stable configuration, the expectation is that such policy choices will result in a lower public debt level relative to GDP as well as an improved foreign position.

This corresponds to the favourable configuration for a single economy, and neglects the possible destabilising effects that these policy choices may exert on other economies.[7] Another element not taken into account is the detrimenatl effect that a decrease in public expenditure, in particular infrasructure or education expenditures, may have on productivity in the long run. This would likely threaten foreign competitiveness and question the relevance of an export-led/foreign asset accumulation strategy.

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