

Opportunities and limits of rebalancing the Eurozone via wage policies. Theoretical considerations and empirical illustrations for the case of Germany

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In this paper we discuss the relationship between the necessary current account rebalancing in the Eurozone, income distribution and wage policies. In contrast to most approaches we do not (primarily) focus on personal income distribution but on functional income distribution and on the role of income and wage policies.

The role of wage policies within a currency union has been discussed extensively – particularly from a Keynesian perspective. A simplifying, yet influential approach assumes (i) a direct and proportionate relationship between nominal unit labour costs and the price level in the individual member countries (Heine *et al.*, 2005; Herr, 2009; 2014);¹ and (ii) a direct and unambiguous dependence of

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¹ Herr (2009; 2014), following Keynes (1930), acknowledges that prices are composed of wages and capital costs, with the latter calculated using the rate of interest and the capital stock. However, it is then assumed that each rise in unit wage costs immediately feeds into the capital costs, such that wage costs and capital costs rise simultaneously and a proportional relationship between nominal wage growth and price inflation is established.



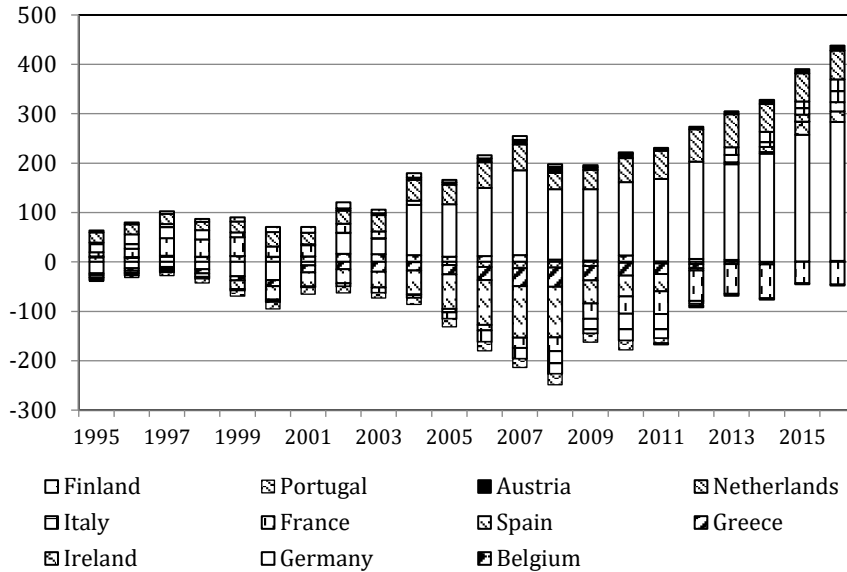
net exports on relative price competitiveness (Flassbeck and Lapavitsas, 2013; Flassbeck, 2015; Sinn, 2014). From that perspective, the increasing current account imbalances before the global financial and economic crisis have been explained by an overly expansionary wage policy in the deficit countries (Sinn, 2014) and an overly restrictive one in the surplus countries, in particular in Germany (Flassbeck and Lapavitsas, 2013; Stockhammer and Onaran, 2012).

In order to cure the imbalances, therefore, a restrictive wage policy in the deficit countries and an expansionary wage policy in the surplus countries would be needed. This would directly correct the relative price competitiveness between countries and therefore reduce the imbalances. Looking at the development of the current account balances since the crisis gives the impression that the previous deficit countries have gone through their necessary adjustment, because their deficits decreased or even turned into surpluses, whereas this adjustment in the surplus countries, particularly in Germany is still to be done (figure 1). Hence, a strongly expansionary wage policy would have to trigger remarkably higher inflation rates and a corresponding reduction in the export industries' price competitiveness in order to reduce the current account surpluses.

However, there are at least two problems with this simplifying approach. First, a complete shift of changes in unit labour costs into proportionate changes in output prices will happen only under the restrictive conditions of a closed economy in which all firms operate with the same technology and are simultaneously confronted with the same increase in nominal wages and thus in nominal unit labour costs. Under less restrictive assumptions, i.e. with some heterogeneity of firms or industries with respect to the production technology or the change in nominal wages, the shift of average nominal unit labour cost changes into prices will always be incomplete and will therefore automatically induce a change in the functional income distribution, as Sylos Labini (1979) had already made clear (Hein, 2005; 2014, chapter 6). This conclusion is well confirmed by empirical evidence for several countries, including Germany (Onaran and Galanis, 2014; Onaran and

Obst, 2016; Stockhammer *et al.*, 2011). Second, price competitiveness does not seem to be the only explaining factor for the European current account imbalances; non-price competitiveness and growth differentials matter as well, as has been shown by using different types of empirical models (Argyrou and Chortareas, 2008; European Commission, 2010; Gaulier and Vicard, 2012; Stockhammer and Sotiropoulos, 2014). German exports, in particular, seem to be mainly driven by high product quality leading to a high income elasticity of exports and therefore by the domestic demand dynamics in the importing countries (Horn *et al.*, 2017; Horn and Lindner, 2016; Kollmann *et al.*, 2014; Schröder, 2015; Storm and Naastepad, 2015; Schulten, 2015a; 2015b). Therefore, expansionary wage policy in Germany should not have a strong direct detrimental effect on German export growth, but should instead rather exert a relevant effect on functional income distribution, which will then influence domestic demand and in turn import growth, net exports and the current account. Based on these findings and observations, this paper will try to illustrate how and to which extent German wage policies could be able to contribute to a more balanced development of the Eurozone and to overcome the export-led mercantilist German model. This model has considerably contributed to the grave current account imbalances within the Eurozone (and also within the global economy) prior to the crisis (Hein, 2013; Hein and Truger, 2011; 2012; Hein *et al.*, 2012), and has continued in a more or less unrestricted way even after the crisis (Dodig *et al.*, 2016; Hein and Detzer, 2016). It has also meant severe welfare losses for Germany, i.e. producing ever more goods and services than what has been used for investment and consumption purposes within the country. These have been accompanied by a rising German net creditor position with regard to the rest of the world, which, however, suffered from devaluations during financial crises as the recent one. And it has meant a rapid increase in the openness of the German economy, which has made it very susceptible to shocks to world demand, as observed in the recent Great Recession (Detzer and Hein, 2016; Hein and Detzer, 2016).

Figure 1 – Current account in billion ECU/euros, selected euro area countries, 1995-2016



Source: elaboration on European Commission (2016).

Our analysis and scenarios are based on stylised econometric results for Germany, as they have recently been obtained in the empirical literature estimating the demand and growth regimes based on post-Kaleckian models. We focus in particular on those studies applying a single-equations estimation approach, i.e. Onaran and Galanis (2014), Onaran and Obst (2016), and Stockhammer *et al.* (2011). Where possible we also draw on the results of Hein and Vogel (2008; 2009) and Naastepad and Storm (2006). The numerical results of these studies are summarised in Appendix 1.² We are particularly interested in the relationship between nominal wages and functional

² Hein (2014, chapter 7) presents a general overview of the estimation results of demand regimes for several countries based on a post-Kaleckian distribution and growth model in the tradition of Bhaduri and Marglin (1990) and Kurz (1990).

income distribution, on the one hand, and between functional income distribution and domestic demand, on the other hand. The purpose of our paper is thus quite modest: we attempt to provide an illustration of the nominal wage growth, inflation and re-distribution required in order to rebalance the German current account, applying stylised econometric results and some assumptions about investment to GDP ratios in Germany, as well as government deficit to GDP ratios.

1. Analytical framework and method

The export driven mercantilist German growth model is mirrored in the development of the financial balances of the main macroeconomic sectors (private sector, public sector and foreign sector). The financial balance of the private sector is given by the difference between private saving (S) and private investment (I); the public financial balance is given by the difference between government revenues (T) and government spending (G); the foreign financial balance expresses the difference between the sum of domestic spending on imports and compensation of foreign production factors (M), which is equal to the foreign earnings for this, and the sum of domestic earnings through exports and the compensation for domestic production factors used abroad (X), which is equal to the foreign spending for these purposes. The sum of all financial balances must be equal to zero because every surplus must by definition be compensated by a corresponding deficit:

$$S - I + T - G + M - X = 0 \quad (1)$$

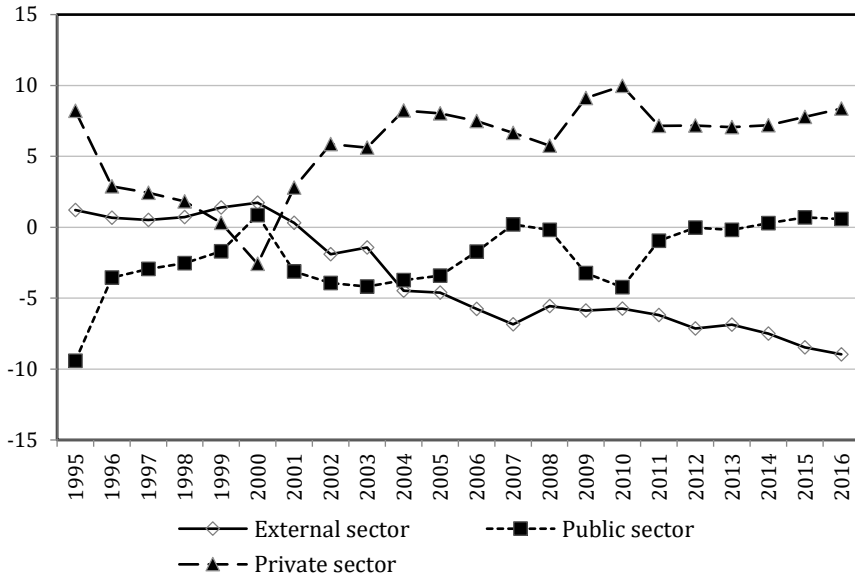
The permanently positive private sector balance in combination with balanced or slightly positive public sector financial balance since the beginning of the 2000s have required a considerably negative foreign sector financial balance (figure 2), which is equivalent to the German current account surplus. Prior to the crisis it amounted to 7% of nominal GDP, and has increased to almost 9% in the meantime. On the one hand, this large current account surplus means an increase in

foreign assets held by German domestic sectors and hence an increase of Germany's net international investment position vis-à-vis the rest of the world. As a mirror image, the rest of the world increases its liabilities with respect to Germany and witnesses a deterioration of its net international investment position. On the other hand, the German current account surplus has been mainly the result of a rising surplus in the net exports of goods and services – which means an export of unemployment (Horn *et al.*, 2017).

A reduction in Germany's high current account surplus or in the highly negative foreign sector financial balance will only be possible if the surplus of the private sector financial balance is reduced by consuming more (and consequently saving less) and/or investing more, or if the surplus in the public sector financial balance is reduced significantly by accepting considerable budget deficits. The latter is currently prevented by the debt brake that was written into the German constitution in 2009, which constrains the federal government's structural balance to -0.35% of GDP and requires the federal states and local authorities to balance their structural balance from 2020 onwards. The European "Fiscal Compact" limits the German structural government deficit to -0.5% of GDP. Given these institutional constraints, we focus here on the possibilities for a reduction in the high private sector financial surplus by means of a more expansive German wage policy as a first step.

The private sector financial balance is influenced by income distribution, because private consumption and savings depend on the distribution of income. Following Kalecki (1939; 1954; 1968), we neglect potential direct effects of the functional income distribution, hence the real wage rate and the profit share, on private investment. As Laski and Walther (2015) and Osiatynski (2015) point out, it is difficult to see how redistribution at the expense of labour should directly stimulate investment, if a lag between investment decisions and investment spending is taken into account, as in Kalecki's work. In the case of Germany, this argument seems to be supported by a number of empirical macroeconomic estimates of investment

Figure 2 – Germany: sectoral financial balances as a percentage of GDP, 1995-2016



Source: European Commission (2016).

functions, based on theoretical models in the tradition of Bhaduri and Marglin (1990) and Kurz (1990). These estimations have mostly found no or only insignificant direct effects of the profit share or the wage share on business investment (Hein and Vogel, 2008; 2009; Onaran and Obst, 2016; Stockhammer *et al.*, 2011).³ We can therefore focus on the effects of distribution on consumption and saving, for which stable econometric results have been found in the case of Germany. Distinguishing the propensity to save out of profits (s_{π}) from the propensity to save out of wages (s_w), private saving depends on

³ However, it has to be admitted that Onaran and Galanis (2014) and Naastepad and Storm (2006) have found small significant direct effects of the profit share or of real wage growth on investments in Germany. See Appendix 1 for detailed results.

nominal GDP (Y), the profit share (h) or, respectively, the wage share ($1 - h = \Omega$), as follows:

$$S = s_W(1-h)Y + s_{\Pi}hY, \quad 0 \leq s_W < s_{\Pi} \leq 1 \quad (2)$$

The propensity to save out of wages should be generally smaller than the propensity to save out of profits, because the latter includes firms' retained earnings. Furthermore, profits usually flow disproportionately towards high income households with a relatively lower marginal propensity to consume. Equations (1) and (2) establish a connection between the functional income distribution, i.e. the profit share, the investment ratio (I/Y), the budget balance ratio $[(T - G)/Y]$ and the current account balance ratio $[(X - M)/Y]$ with given functional propensities to save:

$$h = \frac{\frac{I}{Y} - \frac{T-G}{Y} + \frac{X-M}{Y} - s_W}{s_{\Pi} - s_W} \quad (3)$$

Equation (3) explains the level of the profit share, and therefore the wage share, that satisfy equation (1) given the propensities to save out of profits and wages, for different levels of investment-GDP ratios, government budget balance-GDP ratios, and current account balance-GDP ratios. As is clear from equation (3), the profit share and the current account balance ratio are positively related to each other. *Ceteris paribus*, any reduction in the current account balance ratio thus requires a reduction in the profit share. Or, seen from the other perspective, *ceteris paribus* any reduction in the profit share means a reduction in the current account balance ratio.

Of course, this relationship is derived from an accounting identity and a saving function, and is hence open for different theories regarding the causal links. What we argue below is that the profit share can be affected by domestic wage policies, and that this will then affect the current account to GDP ratio through the net export-GDP ratio. The channels through which this will happen are, first, a reduction in price competitiveness associated with rising nominal wages, triggering rising real wages and a falling profit share, which

will directly dampen exports and raise imports.⁴ Second, a falling profit share and rising wage share will increase domestic demand, and thus the demand for imports. Both channels will therefore reduce net exports and hence the current account-GDP ratio in the medium to long run. Given the recent econometric results on the determinants of the German current account and German exports, in particular, we hold that the indirect redistribution – domestic demand – imports channel is the dominant one in Germany, without denying the potential effects of redistribution on exports.⁵

As redistribution at the expense of profits and in favour of wages will reduce the net export-GDP ratio and the current account-GDP ratio, assuming the other ratios and saving propensities to be constant, the level of GDP will not remain unaffected. Empirical estimates suggest that aggregate demand and GDP in Germany are wage-led (Naastepad and Storm, 2006; Hein and Vogel, 2008; 2009; Stockhammer *et al.*, 2011; Onaran and Galanis, 2014; Onaran and Obst, 2016). Therefore, a decrease in the profit share and an increase in the wage share aiming at rebalancing the German economy will also go hand in hand with a (slightly) higher GDP. This means that we may observe ‘level effects’ too, which cannot be seen in the ratios of equation (3), which holds for all levels of GDP.⁶

With these qualifications, equation (3) will be used in order to calculate the redistribution requirements for different scenarios with different (target) values for the other ratios. After having identified the necessary redistribution for different scenarios, we can also determine the additional nominal wage growth required in order to

⁴ For detailed results of the relevant studies, see Appendix 1. In these estimations, the main effect of the distribution-price competitiveness channel is on exports, with only small or hardly any effects on imports. However, we must stress that the estimated coefficients only capture the direct effects through changes in price competitiveness of exports and imports, and thus net exports. They do not include the indirect effects via the impact on imports of an increase in domestic demand. That is why we cannot use these coefficients to directly calculate the required redistribution of income for a target level of the net export-GDP or the current account-GDP ratios.

⁵ For detailed results of those studies that have estimated the direct effects of redistribution on German exports, see Appendix 1.

⁶ These level effects, however, are small, as shown in Appendix 1.

achieve a certain target of redistribution. We write the wage share as the ratio of the average nominal wage rate (w) and the product of the price index (p) and the average real labour productivity (y):

$$\Omega = \frac{w}{py} \quad (4)$$

The change in the wage share ($\Delta\Omega$) thus depends on the growth rates of the nominal wage rate, of labour productivity and of the price index as follows:

$$\Delta\Omega = \Omega(\hat{w} - \hat{y} - \hat{p}) \quad (5)$$

Nominal wage policy will only be able to influence the wage share if a change in unit labour cost growth ($\hat{w} - \hat{y}$) does not automatically cause a proportional change in the growth rate of the price index, that is, inflation. Changes in unit labour cost growth need to be passed on only incompletely to inflation:

$$\hat{p} = (1 - \alpha)\hat{p}_0 + \alpha(\hat{w} - \hat{y}), \quad 0 \leq \alpha \leq 1 \quad (6)$$

where \hat{p}_0 , the trend of inflation, is given by the other cost factors and by changes in mark-ups and hence profit claims. As shown in Appendix 2, equation (6) can be derived from a simple Kaleckian mark-up pricing approach, in which firms mark-up unit variable costs, composed of unit labour costs and unit material costs, each of which are assumed to be constant up to full capacity output. In what follows we assume that $\hat{p}_0 = 0$. Our results can therefore be interpreted as being the deviation from an inflation trend determined by the other cost factors and the firms' mark-up.

If the factor of transmission (α) is smaller than one, nominal wage policy is able to influence the wage share:

$$\Delta\Omega = \Omega[(\hat{w} - \hat{y} - \hat{p}_0)(1 - \alpha)] \quad (7)$$

Therefore, the connection between the pursued redistribution target, or to be more precise the target wage share growth, and the required nominal unit labour cost growth is:

$$\hat{w} = \frac{\hat{\Omega}}{(1-\alpha)} + \hat{y} + \hat{p}_0 \quad (8)$$

By inserting the nominal wage growth from equation (8) into equation (6) we get the (increase of the) inflation rate caused by the redistribution.

2. Model scenarios I: Rebalancing by means of German wage policy

The model calculations, which aim to reduce the German current account surpluses by way of redistribution in favour of wages, are conducted in two steps for every scenario. First, we calculate the required profit share or wage share, and hence the necessary shift in the functional income distribution based on the assumptions about the investment ratio, the public sector financial balance ratio, the target current account balance ratio and the functional propensities to save (equation 3). Second, additional assumptions about the degree of wage cost shifting and the growth of labour productivity are used to calculate the nominal wage growth (equation 8) required for redistribution and the associated inflation rate (equation 6). As we have mentioned above, we will assume an inflation trend induced by the other cost factors and profit claims of $\hat{p}_0 = 0$, so that our results can be read as the additional wage and price inflation required by the re-distribution target.

For the investment ratio, i.e. the share of nominal gross fixed capital formation in nominal GDP, we take the average for the years since the introduction of the euro (1999-2015). For the public sector financial balance as a share of the nominal GDP, we follow the requirements of the German debt brake and set it equal to -0.35% of GDP. For the target current account balance as a share of nominal GDP, we assume different values for the various scenarios.

Scenario A assumes a negative German current account balance of -2% of GDP, which allows the foreign sector to reduce its net

negative international investment position in absolute terms. Scenario B assumes a balanced current account and therefore a less pronounced rebalancing. Scenario C assumes a moderately positive current account balance of +2% of GDP. This last scenario takes into account that a successful economic catch-up process of the European periphery will mean higher relative growth rates in the foreseeable future, leading to moderate current account deficits for the catching-up countries. This is reasonable and feasible if a stable, long-term oriented net capital inflow into these countries can be guaranteed by efficient regulation of and intervention in capital flows in order to avoid the growth of bubbles. Moreover, 'high road' development strategies are required for successful and sustainable catch-up, making use of public investment, both national and European, in infrastructure and education, as well as public development banks and funds (i.e. the European Investment Bank, the European Investment Fund, etc.) to support private investment in the respective countries (Hein and Detzer, 2015). However, a current account balance of +6% for Germany, which is considered as tolerable within the Macroeconomic Imbalance Procedure by the European Commission, seems to be far too high and very difficult to reconcile with a rebalancing of the Eurozone.

For the propensities to save out of wages and profits, we use the results from the econometric estimates for Germany referred to above (Naastepad and Storm, 2006; Hein and Vogel, 2008; 2009; Prante, 2017; Stockhammer *et al.*, 2011; Onaran and Galanis, 2014; Onaran and Obst, 2016). These estimates are based on data from national accounts, that is, for profit they include the gross income from entrepreneurial activity and assets (i.e. including depreciation, retained earnings, interest, dividends, rents and leaseholds), and for wages they include employee compensation, in both cases before tax. The econometric estimates for the periods from the early 1960s or 1970s to the early 2000s found relatively stable differentials between the propensities to save out of profits and wages, ranging from 32 percentage points (Hein and Vogel, 2008) to 50 percentage points (Onaran and Galanis, 2014), with an average of about 40 percentage

points.⁷ Although these differences are within a relatively narrow range, the levels of the estimated saving propensities differ considerably because of the use of different data with respect to functional income distribution. For this reason, we computed the propensity to save from wages consistent with the data, and the difference between the two saving propensities, of 40 percentage points, from equation (3) with the average values for the years 1999-2015, as follows:

$$s_w = \frac{I}{Y} + \frac{X - M}{Y} - \frac{T - G}{Y} - h(s_{\pi} - s_w) \quad (9)$$

This results in a propensity to save out of wages of 6.6% and out of profits of 46.6%.⁸

In order to be consistent with the other variables and also the estimated results for the saving propensities, we calculated the wage share as the share of the compensation of employees in nominal GDP at market prices, and the profit share as the residual. In order to determine the necessary redistribution, we assume the average wage or profit share of the years 1999-2015, since we are not interested in cyclical short-term but rather in the medium to long term changes. For the calculation of the necessary nominal wage increases, we expect a growth in labour productivity, defined as real GDP per employee, of about 1% in the long term. This is roughly the average for the 1990s and 2000s, until the crisis (European Commission, 2016).

For the link between wage or unit labour cost growth and inflation, it is again possible to use estimation results from the literature. Since we are interested in the distributional effect, the elasticity of the GDP price index with regard to nominal unit labour costs is of interest. The values for Germany for the periods from the early 1960s and 1970s to the 2000s (before and after the crisis) are

⁷ For the estimated differentials for the propensities to save out of profits and wages in Germany, which also provide the effects of a 1% increase in the profit share on consumption as a percentage of GDP, see Appendix 1.

⁸ Note that we are using nominal GDP at market prices as a denominator for our functional income shares. Profits, the profit share and the propensity to save out of profits thus include depreciation.

0.62 (Onaran and Galanis, 2014), 0.38 (Onaran and Obst, 2016) and 0.42 (Stockhammer *et al.*, 2011) respectively.⁹ For the sake of simplicity, we assume $\alpha = 0.5$ in the following calculations.

The results of the wage policy rebalancing scenarios are reported in table 1. Scenario A, which is connected with an absolute debt relief for the periphery, would imply a massive shift in the functional income distribution: the German wage share would have to rise from an average of 50.4 to 70.2% of GDP. This is obviously unobtainable, because since 1960 the maximum wage share has been 56.4% of GDP in 1981 (European Commission, 2016). In view of the realistic way of shifting labour costs to prices to a degree of 50%, and with a growth rate of labour productivity of 1% per year, the growth of the nominal wages per capita, i.e. the nominal wage rate, would have to increase by 18.3 percentage points per year if the adjustment had to take place within 5 years. If the adjustment period is doubled to 10 years, the nominal wage growth would have to rise by 8.5 percentage points. Accordingly, the inflation rate should increase by 8.6 or 3.7 percentage points respectively, which is obviously unrealistic.

A decisive parameter for the amount of the necessary shift in the functional income distribution is the targeted extent of the rebalancing: when reducing the goal to a balanced current account (scenario B) or even a moderately positive current account, of 2% of GDP (scenario C), the extent of the required redistribution is clearly reduced. Nevertheless, even in these cases the extent of redistribution, with required wage shares of 65.2% (scenario B) or 60.2% (scenario C), remains quite unrealistic. For scenario B, this would mean an annual rise in wage inflation by 6.8 percentage points (for an adjustment within 10 years) or 14.3 percentage points (adjustment in 5 years), with an increase in price inflation by 2.9 or 6.6 percentage points. And for Scenario C, wage inflation would have to rise annually by 5 or 10.1 percentage points and price inflation by 2 or 4.5 percentage points.

⁹ See also the values for the elasticity of the export price index with regard to nominal unit labour costs in Appendix 1, which are considerably smaller.

Table 1 – Scenarios

	I: Rebalancing by wage policy				II: Leeway for fiscal policy		
	A	B	C	D	E	F	G
Nominal gross fixed investment as share of nominal GDP (I/Y), in percent	20.2	20.2	20.2	22.5	20.2	22.5	22.5
Current account balance as share of nominal GDP [$(X - M)/Y$], in percent	-2.0	0.0	2.0	2.0	2.0	2.0	2.0
Public sector financial balance as share of nominal GDP [$(T - G)/Y$], in percent		-0.35			-1.35	-1.35	-1.35
Saving rate out of wages (s_w), in percent	6.6	6.6	6.6	6.6	6.6	6.6	5.6
Difference between the saving rates out of wages and profits ($s_n - s_w$), percentage points			40.0				41.0
Required profit share (h), in percent	29.8	34.8	39.8	45.6	42.3	48.1	49.4
Average profit share (h) 1999-2015, in percent				49.6			
Required wage share (Ω), in percent	70.2	65.2	60.2	54.4	57.7	51.9	50.6
Average wage share (Ω) 1999-2015, in percent				50.4			
Required increase wage share ($\Delta\Omega$), percentage points	19.8	14.8	9.8	4.0	7.3	1.5	0.2
Annual wage growth (in percent) with adjustment after 5 years ($\hat{p}_0 = 0, \hat{y} = 0.01, \alpha = 0.5$)	18.3	14.3	10.1	4.9	7.9	2.5	1.2
Annual inflation rate (in percent) with adjustment after 5 years ($\hat{p}_0 = 0, \hat{y} = 0.01, \alpha = 0.5$)	8.6	6.6	4.5	1.9	3.4	0.7	0.1
Annual wage growth (in percent) with adjustment after 10 years ($\hat{p}_0 = 0, \hat{y} = 0.01, \alpha = 0.5$)	8.5	6.8	5.0	2.7	4.0	1.7	1.1
Annual inflation rate (in percent) with adjustment after 10 years ($\hat{p}_0 = 0, \hat{y} = 0.01, \alpha = 0.5$)	3.7	2.9	2.0	0.9	1.5	0.3	0.0

Notes: scenario A: absolute reduction of foreign indebtedness for the periphery; scenario B: fast rebalancing; scenario C: moderate rebalancing, since the economic catch-up-process in the periphery is accompanied by higher growth rates and small current account deficits; scenario D: same as C, plus higher investment ratios as in the second half of the 1990s; scenario E: same as C, plus Golden Rule for public investments, i.e. a higher budget deficit (1% of GDP) for higher public net investment to the same extent; scenario F: scenarios D and E combined, and Golden Rule and redistribution induce higher private investment as in D; scenario G: same as scenario F, plus more equal structure of wages.

Sources: European Commission (2016), and authors' calculations.

Scenario D seems more realistic, although it is still associated with a high target wage share in historical comparison, of 54.4%. It assumes a significantly higher private investment ratio, of 22.5% of GDP, as it has been observed in the second half of the 1990s after German reunification. However, in view of the weakness of private investment demand prevailing since the beginning of the new millennium, it is unclear how such an increase in private investment should actually occur. And even if it were achieved, rebalancing would still require considerable higher nominal wage growth, of 4.9 percentage points over five years or 2.7 percentage points over ten years, and additional price inflation would amount to 0.9 or 1.9 percentage points.

3. Model scenarios II: More leeway for government budget deficits

Since a rebalancing of the German economy by means of a shift in the functional income distribution and hence by aggressive wage policy alone seems to be highly unobtainable, it is obviously necessary to adopt alternative or additional economic policy measures for rebalancing. An obvious candidate would be fiscal policy in particular, which could lead to a reduction in the public sector financial balance by way of accepting higher budget deficits, and a reduction in the balance of the private sector through a more equal distribution of income (Truger, 2013).¹⁰

Scenario E in table 1 therefore illustrates the impact of the introduction of the so-called Golden Rule for public investment, according to which net public investment should be financed permanently through budget deficits (Truger, 2015; 2016). It is assumed that this will permanently increase the government deficit

¹⁰ Even the advocates of a wage-led recovery strategy for the Eurozone and the global economy after the crisis have now acknowledged that the effects of – and maybe the conditions for – such an exclusive strategy have been overrated, and they are now recommending a mixed strategy of expansionary wage and fiscal policies (Onaran, 2016; Obst *et al.*, 2017).

ratio in Germany by 1% of GDP, to a total of 1.35% of GDP. In itself, this is purely mathematically not enough for a rebalancing, since the required wage share with 57.7% is still well above the historical maximum. Additional annual wage inflation would be in the range of 4 to 7.9 percentage points, and additional annual price inflation in the range of 1.5 and 3.4 percentage points, depending on the period of adjustment.

However, assuming that the increase in public investment made possible by the Golden Rule may trigger a complementary increase in private investment to 22.5% of GDP, as in the second half of the 1990s, the target wage share required for rebalancing, at 51.9%, is still noticeably higher than the average for the years 1999-2015, but still at a level similar to that achieved in the 1990s. As shown in scenario F, the necessary moderate rise in the growth of the nominal wage rate, of 1.7 percentage points per year over ten years or 2.5 percentage points over a period of five years, also appears realistic, as does the additional annual price inflation of 0.3 or 0.7 percentage points, respectively.

If in addition, as in scenario G, fiscal policy – for example through tax policy measures – could contribute to reducing the inequality in the personal income distribution, the required shift in the functional income distribution will even be substantially smaller. We assumed that through such a measure the propensity to save out of wages falls from 6.6% to 5.6%, while the propensity to save out of profits remains constant at 46.6%. In this scenario, only a very small functional redistribution would be required to achieve the target current account balance of 2% of GDP, and the nominal wage growth above the inflation trend would have to only slightly exceed trend productivity growth. Additional inflation would be close to zero.

5. Conclusions

In this paper we have examined the role of German wage policy in the rebalancing of the German economy, that is, in the reduction of the

excessively high current account surplus, which should contribute to rebalancing the Eurozone and also the global economy. Based on recent empirical work, we have argued, first, that nominal wage policy has a distributional effect too. This means, second, that the indirect effects on imports of wage policy via domestic demand have to be taken into account. And third, we have argued, based on the recent literature, that in the case of Germany the contribution of wage policy to rebalancing will be mainly through the indirect redistribution – domestic demand – imports channel, and less through the direct price competitiveness – exports channel.

In order to assess the required redistribution we have then used stylized econometric results for Germany, as they have recently been obtained in the empirical literature estimating the German demand and growth regime based on post-Kaleckian models. We have focussed in particular on the relationship between nominal wages and functional income distribution, on the one hand, and between functional income distribution and domestic demand, on the other hand.

We have shown that a more expansionary wage policy can indeed contribute to reducing the excessive German current account surplus, mainly through the domestic income – imports channel, so that German exports should be hardly affected. However, wage policy alone will be overburdened with the task of rebalancing. In particular more expansionary fiscal policies are required, too. First, deficit-financed public investments can significantly contribute to rebalancing. Second, government redistribution policy can contribute to a more balanced development through an increase in private domestic demand.

Since redistributive wage policies and expansionary fiscal policies will have positive level effects on GDP and employment too, they will also improve the political conditions for a more expansionary and balanced German development in the long run.

Appendix 1 – Results from econometric studies on the effect of changes in functional income distribution on ‘excess demand’ in Germany, and of changes in nominal unit labour costs on the price indices of GDP and exports

The econometric studies on the effects of changes in functional income distribution on aggregate demand and real GDP in Germany, on which our simulations are based, have used a single equations estimations approach. The procedure of this approach can be described as follows.

Within national accounting, aggregate demand (Y) is the sum of consumption (C), investment (I), net exports (NX), computed as the difference between exports (X) and imports (M), and government expenditure (G). All variables are in real terms. In a general formulation, consumption, investment and net exports are written as functions of income (Y), the profit share (h), and some other control variables (Z_i) used in the estimations. The latter are assumed to be independent of output and distribution. Government expenditures are usually considered to be exogenous, and thus independent of changes in functional income distribution. Equilibrium aggregate demand is thus given as:

$$Y^+ = C(Y, h) + I(Y, h, Z_I) + NX(Y, h, Z_{NX}) + G \quad (A1)$$

The profit share is taken to be exogenous – feedbacks of changes in aggregate demand and its components on functional income distribution are ignored. Total differentiation of equation (A1) yields:

$$dY^+ = \frac{\partial C}{\partial Y} dY + \frac{\partial C}{\partial h} dh + \frac{\partial I}{\partial Y} dY + \frac{\partial I}{\partial h} dh + \frac{\partial NX}{\partial Y} dY + \frac{\partial NX}{\partial h} dh \quad (A2)$$

Rearranging and collecting terms gives:

$$\frac{dY^+}{dh} = \frac{\frac{\partial C}{\partial h} + \frac{\partial I}{\partial h} + \frac{\partial NX}{\partial h}}{1 - \frac{\partial C}{\partial Y} - \frac{\partial I}{\partial Y} - \frac{\partial NX}{\partial Y}} = \frac{1}{1-x} \left[\frac{\partial C}{\partial h} + \frac{\partial I}{\partial h} + \frac{\partial NX}{\partial h} \right] \quad (A3)$$

with $x = \partial C/\partial Y + \partial I/\partial Y + \partial NX/\partial Y$. If the feedbacks of changes in the level of aggregate demand and income on consumption, investment and net exports, and hence the multiplier $[1/(1 - x)]$, are ignored, equation (A3) simplifies to:

$$\frac{dY}{dh} = \frac{\partial C}{\partial h} + \frac{\partial I}{\partial h} + \frac{\partial NX^r}{\partial h} \quad (\text{A4})$$

Dividing by Y gives the percentage change of aggregate demand caused by a one percentage point change in the profit share:

$$\frac{\frac{dY}{Y}}{\frac{dh}{h}} = \frac{\frac{\partial C}{\partial h}}{\frac{Y}{h}} + \frac{\frac{\partial I}{\partial h}}{\frac{Y}{h}} + \frac{\frac{\partial NX^r}{\partial h}}{\frac{Y}{h}} \quad (\text{A5})$$

Equations (A5) shows the effects of a change in the profit share on 'excess demand', not yet including the multiplier effects, as the sum of the partial effects on consumption, investment and net exports. If

$$\frac{\frac{\partial C}{\partial h}}{\frac{Y}{h}} + \frac{\frac{\partial I}{\partial h}}{\frac{Y}{h}} < 0,$$

then domestic excess demand is 'wage led', whereas if

$$\frac{\frac{\partial C}{\partial h}}{\frac{Y}{h}} + \frac{\frac{\partial I}{\partial h}}{\frac{Y}{h}} > 0,$$

domestic excess demand is 'profit led'. If

$$\frac{\frac{dY}{Y}}{\frac{dh}{h}} < 0,$$

total excess demand is wage led, and if

$$\frac{\frac{dY}{Y}}{\frac{dh}{h}} > 0,$$

total excess demand is profit led. Table A1 summarises the results that have been obtained for the German economy.

Table A1 – Effects of a one percentage point change in the profit share on excess aggregate demand and its components

Study and time period	$\frac{\partial Y}{Y} \frac{\partial h}{\partial h}$ A = B + C + F	$\frac{\partial C}{Y} \frac{\partial h}{\partial h}$ B	$\frac{\partial I}{Y} \frac{\partial h}{\partial h}$ C	$\frac{\partial X}{Y} \frac{\partial h}{\partial h}$ D	$\frac{\partial M}{Y} \frac{\partial h}{\partial h}$ E	$\frac{\partial NX}{Y} \frac{\partial h}{\partial h}$ F = D - E
Hein and Vogel (2008), 1960-2005	-0.32	-0.32	0	n.e.	n.e.	0
Hein and Vogel (2009), 1960-2005	-0.06	-0.42	0	n.e.	n.e.	0.36
Naastepad and Storm (2007), 1960-2000	negative	-0.39	positive	positive	0	positive
Onaran and Galanis (2014), 1960-2007	-0.03	-0.5	0.38	0.1	0	0.1
Onaran and Obst (2016), 1960-2013	-0.35	-0.4	0	0.05	0	0.05
Prante (2017), 1960-2012	n.e.	-0.39 ...-0.42	n.e.	n.e.	n.e.	n.e.
Stockhammer et al. (2011), 1970-2005	-0.27 ...-0.17	-0.38 ...-0.44	0	0.11 ... 0.22	-0.02 ...-0.05	0.13 ... 0.27

Notes: n.e. stands for not estimated, 0 for no statistical significance; Naastepad and Storm (2007) provide results for the effects of real wage growth on GDP growth, and on growth contributions of demand aggregates: the numerical results from their work are thus not comparable, and we only provide the signs with respect to the implied changes in profit shares; Prante (2017) only estimates the consumption function, controlling for different indicators of personal income distribution.

Only three studies out of this pool have estimated the nominal unit labour cost (*ulc*) elasticities of the price indices for GDP (*p*) and for export prices (*p_x*). The results are shown in table A2.

Table A2 – *Nominal unit labour cost elasticities of the price indices for GDP and for export prices*

Study and time period	$\frac{\partial \ln p}{\partial \ln ulc}$	$\frac{\partial \ln p_x}{\partial \ln ulc}$
Onaran and Galanis (2014), 1960-2007	0.62	0.22
Onaran and Obst (2016), 1960-2013	0.38	0.22
Stockhammer et al. (2011), 1970-2005	0.42	0.37

Appendix 2 – The rate of inflation derived from a Kaleckian pricing equation

Assume a simple Kaleckian pricing equation. In incompletely competitive goods markets, firms mark-up unit variable costs. The latter are composed of unit labour costs, i.e. the ratio of the nominal wage rate (*w*) and labour productivity (*y*), and unit material costs (*μ*), which are both assumed to be constant up to full capacity output. Following Kalecki (1954), the mark-up (*m*) is determined by the degree of price competition in the goods market, overhead costs and the bargaining power of workers and trade unions (Hein, 2014, chapter 5):

$$p = (1 + m) \left(\frac{w}{y} + \mu \right), \quad m > 0 \quad (\text{A6})$$

Transforming equation (A6) into growth rates yields:

$$\hat{p} = (\hat{w} - \hat{y}) \frac{(1+m)\frac{w}{y}}{p} + \hat{\mu} \frac{(1+m)\mu}{p} + \hat{m} \frac{m\left(\frac{w}{y} + \mu\right)}{p} \quad (A7)$$

Setting

$$\alpha = \frac{(1+m)\frac{w}{y}}{p},$$

which is the share of nominal unit labour costs plus the mark up on unit labour costs in the price, and

$$(1-\alpha)\hat{p}_0 = \hat{\mu} \frac{(1+m)\mu}{p} + \hat{m} \frac{m\left(\frac{w}{y} + \mu\right)}{p},$$

which is the part of inflation caused by changes in unit material costs and in the mark-up, we arrive at:

$$\hat{p} = (1-\alpha)\hat{p}_0 + \alpha(\hat{w} - \hat{y}), \quad 0 \leq \alpha \leq 1 \quad (A8)$$

which is used as equation (6) in the paper.

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