

# Economic growth, redistribution and private sector de-leveraging: a macroeconomic policy trilemma?

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## Abstract

In the aftermath of the Great Financial Crisis the world economy shows reduced economic growth, a renewed rise in inequality and partly a fall in private sector debt. The three issues seem to be intertwined. It is shown how in a theoretical framework that builds on the sectoral balances they affect the macroeconomy. An increase in credit creation neutralizes the adverse growth effects of regressive redistribution until the financial situation becomes impossible to validate. In a tight sectoral accounting framework, the necessary policies given the de-leveraging needs of the private sector are few. They are discussed with a view on the world economy. It seems that more public spending, redistribution and financial default through another financial crisis are the only options left on the table when the goal is economic growth that does not depend on increasing private sector financial debt.

Keywords: economic growth, redistribution, de-leveraging, financialization, secular stagnation, macroeconomic policy

JEL classification:

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# 1 Introduction

In the roaring twenties, economic growth was strong, income inequality reached an all-time high in 1929 and then the Great Crash in 1929 triggered a deflationary de-leveraging process that Fisher (1933) described as a debt deflation. The event is often seen as the start of modern macroeconomics.<sup>1</sup> Many recessions and financial crises followed, also depressions.<sup>2</sup> Although presented as a sovereign crisis by many authors, at the center of the macroeconomic problems we find the credit system. Debt is not repaid, and this creates economic problems, which are at the center of the debate. The rise in private debt in many developed economies has led Turner (2014, 1) to describe the following dilemma: 'We seem to need credit growth faster than GDP growth to achieve an optimally growing economy, but that leads inevitably to crisis and post-crisis recession.'<sup>3</sup> So, for some reason there is not enough demand in the economy, and that lack of demand must be neutralized by the creation of credit.

This had already been recognized outside of academia, when the satirical US magazine 'The Onion' in July 2008 published an article titled 'Recession-Plagued Nation Demands New Bubble to Invest In' in which an (imaginary) investment banker is on the record with the admission that 'the U.S. economy cannot survive on sound investments alone'. Indeed, the fall in investment has been a major explanation of relatively slow economic growth as the real estate sector went into a prolonged slump in countries like the US, Spain and Ireland. Paul Krugman (2002) had anticipated these problems when he wrote: 'To fight this [2001-02] recession the Fed needs more than a snapback; it needs soaring household spending to offset moribund business investment. And to do that, as Paul McCulley of Pimco put it, Alan Greenspan needs to create a housing bubble to replace the Nasdaq bubble.'

Given that income inequality peaked in 2007 just like it peaked in 1929 it seems very likely that the source for the lack of aggregate demand is the skewed distribution of incomes and wealth. After all, the fall in the wage share has lasted many decades now in most countries, among them the US. Therefore, income inequality

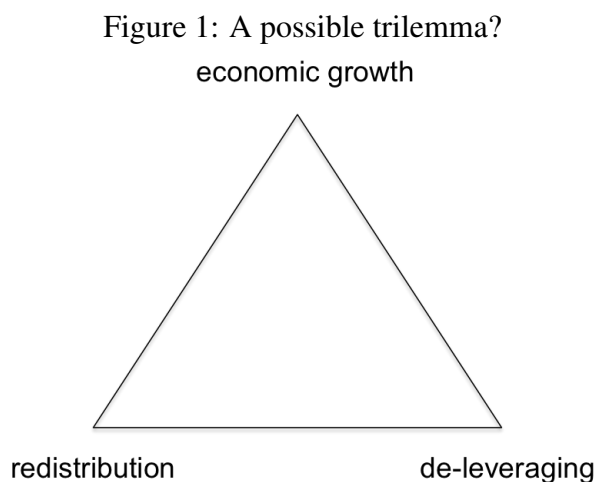
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<sup>1</sup>I would prefer Wicksell (1898) as the starting point of macroeconomics, but that is a different discussion.

<sup>2</sup>See Dodig and Herr (2014).

<sup>3</sup>Turner (2014) proceeds to argue the validity of this dilemma, putting forward increasing inequality, global imbalances caused by excess savings and 'financialization' as causes.

is added to Turner's dilemma to produce a trilemma of economic growth, redistribution and de-leveraging (see figure 1). Economic growth is measured in GDP, redistribution means the imposition of redistributive policies (mainly through tax policy), and de-leveraging describes the repayment of debt by private sector entities (households and/or firms). The trilemma seems to be a result of the following logic, which is based on standard neoclassical (macro)economics.



If you have economic growth, you have to pay the price of increased inequality in the short-run. This was the message of Okun (1975) and his 'big trade-off'. De-leveraging of the private sector, not a topic of discussion in the 1970s, is in principle compatible. Whether it happens depends on who gets a larger share of income. The diving line might run between households and firms, or between groups of households (or firms). De-leveraging firms is what economic adjustment in Germany looked like in the aftermath of the tech bubble.<sup>4</sup> Falling real wages, so the neoclassical argument goes, have to be accepted if more employment is the goal. From a different perspective, falling real wages are helping if the private sector needs to deleverage. Lower costs increase the cash flow, which enhances the ability of firms to carry their debts. The only problem is that aggregate demand will suffer from lower wages, which however can be compensated by relying more heavily on external demand. In the long run, the inequality of incomes will be returning towards the average through 'trickle down economics'.

If you have redistribution, this will mean higher taxes, distorting incentives to

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<sup>4</sup>Koo (2003) calls this a balance sheet recession.

work. Labour supply will decrease and economic growth will be out of reach, it is argued. It is also argued that higher taxes will lead to falling tax income because of the Laffer curve. De-leveraging is compatible with redistribution, again depending on whether the redistributed incomes go towards those that are de-leveraging.

If you have an economy where parts of the private sector are de-leveraging, this will be harmful to economic growth. De-leveraging is either the result of overconsumption of firms or households, or of misguided investment decisions. The lack of economic growth is a punishment that has a cause and thus should be accepted. De-leveraging is compatible with redistribution since debtors pay creditors.

All this is based on neoclassical thought. It thus seems that economic growth goes together with de-leveraging, but not with redistribution. Redistribution is compatible with de-leveraging, but not with economic growth. Last but not least, de-leveraging is compatible with redistribution, but not with growth. However, I will argue in the following that there is no trilemma and that economic growth, redistribution and de-leveraging are compatible given the right policies. These policies are only available if the currency is set up as a sovereign currency. That is, it is possible for the government to access central bank reserves in exchange for treasury securities without limit.

In the next section I will review parts of the relevant literature. This is followed by an exposition of the IS/MY model as developed in Ehnts (2012), amended by a discussion of economic growth, redistribution and de-leveraging. In section four, policy alternatives and their effects on sectoral balances are discussed. The last section concludes.

## **2 Literature**

The discussion of economic growth, redistribution and private sector de-leveraging should be based on sound theoretical fundamentals. In the following I describe essential definitions and then review the literature on these topics with a focus on possible tradeoffs between the three terms.

## 2.1 Endogenous money

The theory of endogenous money establishes that banks create money from nothing by lending. Loans then create deposits, which in a pure credit economy circulate in the economy as means of payment (Wicksell, 1898). In modern monetary systems, the banks can access cash money by acquiring reserves, which are deposits at the central bank.<sup>5</sup> The reserves can be exchanged into cash, and vice versa. The monetary aggregate, if understood as deposits in banks, is demand-driven. Banks lend on good collateral at an interest rate. That rate is above the central bank's interest rate at which it lends to banks, also on good collateral.

Loan demand determines the monetary aggregate, and given that loans are used to finance real investment and not financial investment an increase in net loan demand should be expansionary. Repayment of loans destroys purchasing power just as the issuance of loans creates it. Investment of both private and public sector have long run consequences for the structure of the macroeconomy. Increases in productivity give some room for price decreases, improve the current account, or a rise in real incomes. Combinations of all three can help to allow for policies that aim at increasing real incomes across the board, which will deliver relatively high economic growth rates while keeping the current account from turning negative.

In the medium term it is important to ensure that loans are directed towards investment of projects that are improving the public welfare. The provision of public goods and efficient production of private consumer and investment goods should be the ultimate aim of credit creation, not the creation of bubbles in real estate or financial assets. Bezemer et al. (2013) distinguish between the uses of credit into 'nonfinancial business and consumption' and 'financial and real estate'. While any loans that lead to spending increase aggregate demand in the short run, the picture in the long run is very different.

Last but not least it is important to understand the dynamics of loan creation in a modern economy. There is a certain asymmetry in the fact that loan demand can be decreased by a central bank moving its policy rate upwards, but in case of meagre loan demand it cannot be expected that lower policy rates directly translate into higher loan demand.<sup>6</sup> Also, for an individual bank it is difficult to increase

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<sup>5</sup>See Wray (2012) or McLeay et al. (2014) on the functioning of modern money.

<sup>6</sup>While this is often seen as the liquidity trap, it actually constitutes an investment trap. The decrease in the interest rate has not effect on investment.

its loan portfolio faster than other banks because of the drain in reserves this will cause (Wicksell 1898, 85). Banks in any given currency area usually move in lockstep when it comes to loan provision, which means that individual banks that decide not to increase loans demand as the other banks will experience relatively low profits. It is open to debate whether this dynamic is optimal, but one should be reminded of Keynes (1936, 322) warning: 'The right remedy for the trade cycle is not to be found in abolishing booms and thus keeping us permanently in a semi-slump; but in abolishing slumps and thus keeping us permanently in a quasi-boom.'

More recently, it was the description of Money Manager Capitalism by Minsky (1986) that explained how the debt dynamics work. Minsky argued that (financial) stability creates (financial) instability by dulling the public's sense of danger with respect to potential weapons of financial mass destruction, as Warren Buffett put it. Minsky argues for a combination of big bank and big government to cure capitalism from its instabilities.

## **2.2 Sovereign currency**

The government can also add deposits to the banking system. It achieves that through its normal funding operations. It can issue government securities, which it deposits at the central bank in return for reserves. These are transferred to banks when government spends, thus leading to an increase in deposits for those whose incomes have increased. If the arrangement between the central bank, private banks and the government is set in a way that ensures unlimited access to government financing, then the currency is sovereign. What matters is de facto, not de jure.

If, in a situation of deleveraging, the increase in government spending leads to deposits flowing towards those that are indebted the financial situation relaxes by enabling those in deficit to repay their debt more easily, without a collapse in aggregate demand since the collapse in private demand is now (partly) offset by government spending. This is what Minsky described with 'big government'. The 'big bank' – the central bank - meanwhile ensures financial stability through prudent regulation and fulfilling the role of lender of last resort. This is only

possible in the context of a sovereign currency.<sup>7</sup>

## 2.3 Economic growth

Economic growth is the result of production, which is measured in currency units. Factors of production include mainly labour, land and capital. There are problems with measuring GDP as especially the prices of some durable goods are fluctuating. In the following, economic growth is connected to unemployment via a mild version of Okun's Law, namely the reasoning that GDP growth has an impact on unemployment. Negative economic growth will lead to a fall in employment, while positive economic growth above some level shows a positive relation with employment. Thus, a fall in GDP has two consequences that are unwanted. First, the amount of goods and services produced decreases, and second, the distribution of income will be skewed, leading to increased inequality. The result might well be that some households have no income and thus cannot command any share in GDP. Apart from that, unemployment is bad from a social perspective, both from the perspective of society and individual (Darity and Goldsmith, 1996).

## 2.4 Redistribution

Redistribution is an act of changing the distribution resources. That act is a political act, and it manifests itself through reforms. Those that matter most for redistribution are those concerning health care, social security, pensions and the tax system. It is often said that savings finance investment, and that income inequality can improve economic growth because it allows large capital investments. However, this view is incorrect. Investment is financed by loans, and that leaves very little room for the idea that more savings lead to more investment. More convincing is the Keynesian view, that a redistribution towards the relatively poor will lead to increased demand, which then leads to more production and more economic growth. Empirical evidence has rejected the trade-off of Okun (1975) mentioned above. Ostry et al. (2014, 4) find that 'redistribution appears generally benign in terms of its impact on growth'.

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<sup>7</sup>Debts in foreign currency would hinder central bank and government from fulfilling their role, since neither can issue foreign currency.

## **2.5 De-leveraging**

De-leveraging is the intention of shrinking the balance sheet, either on the microeconomic level - banks, companies, households - or on the macroeconomic level, where the private or external sector might engage in this kind of behavior. It is important to understand that just like profit maximization the concept of de-leveraging is something which actors try to achieve, but it is not said that their individual or aggregate attempt is successful. As Fisher (1933) has shown, the intent to de-leverage financial balance sheets can lead to results that are the opposite what was originally intended. The selling of assets can send asset prices down, thus increasing the symptom that has led to de-leveraging in the first place. There is a fallacy of composition here since what is optimal for one firm might be damaging to others, which might feed back on the one firm as well if asset prices start collapsing on a broad front.

As Kaldor (1939) has noted, to hold an asset requires the investor to expect a net gain. This is made very difficult if the expected price is lower than the current price, especially when other assets are available that promise a net gain of zero (like money or sovereign bonds with zero coupon). Koo (2003) has shown for Japan that de-leveraging can continue for a very long time during which profit maximization by firms is significantly different from the usual ideas about the monetary circuit. If the cash flow of firms is used to repay debt, than the private sector destroys more money than it creates by borrowing. This will weaken aggregate demand and at the same time make it more difficult for other indebted units to deleverage.

## **3 Economic policy in the IS-MY model**

In the following the focus will be on short-term macroeconomic policy. A discussion of long run economic growth strategies is beyond the scope of this paper. The IS/MY model developed in Ehnts (2012) is a simple macroeconomic description of the net changes in sectoral balances, which are only visible ex-post. It is hence a tool to ensure the consistency of balance of payments accounting when thinking about international macroeconomic adjustment to either 'shocks' or discrete policy changes. It comes with no big baggage, as the assumptions are few and quite



standard. It is assumed that a rise in the monetary aggregate, which is driven by credit demand and deficit spending, leads to a rise in incomes.<sup>8</sup> Note that deficit financing by the government increases the amount of money since net reserves are flowing into the economy, creating additional net deposits in the process.<sup>9</sup> Then, total income is spent on consumption, via the Keynesian multiplier, while investment is determined by the change in the monetary aggregate. Government spending is set exogenously by the government. Exports depend on real foreign demand, imports on real domestic income.

The model shows only flows, not stocks. The change in private sector debt is equal to private savings minus investment, that of the public sector tax income minus government spending and that of the external sector imports minus exports. The changes in these three sectoral balances must equal zero, since the increase in net wealth of one sector must have been achieved by a decrease in net wealth of another. For instance, a rise in net wealth of the private sector means that either they hold more assets which are claims to the other two sectors or they have less claims to honor vis-a-vis the other two sectors. Assets accumulated include government bonds, which are a liability of the public sector, or foreign financial assets, like stocks, which are liabilities of the external sector. The repayment of debt vis-a-vis other sectors can also lead to a situation in which the private sector has a positive change in its net debt position. Households repaying mortgages from foreign banks would be a case in point.

In the following it is shown how a rise in private sector debt drives income growth and subsequently, how private sector deleveraging - or repayment of debt - leads to a fall in incomes. This is followed by two scenarios which allow deleveraging under constant income, first by an increase in domestic and second by an increase in external demand. While the former is possible under stable prices, the latter requires a relative disinflation or deflation and is dynamically unstable. Countries that push their wages down shift unemployment elsewhere, which will likely lead to retaliation of the trade partners.<sup>10</sup>

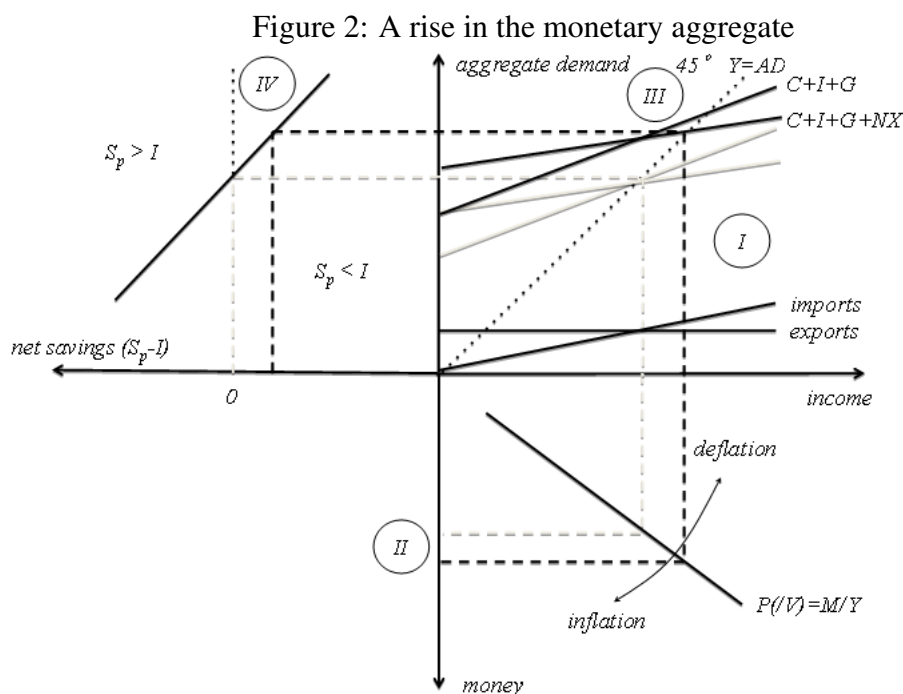
The build-up of private sector debt in many countries in the last few decades can

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<sup>8</sup>Hence, only credit that flows is translated into real investment counts.

<sup>9</sup>Again, only real spending is counted as money. A bail-out of banks would not lead to an increase in the monetary aggregate, although it does increase government debt. Also, deficit spending does not create deposits with reserves in a ratio of one to one, since the private sector can use the deposits to repay debt or can be encouraged to increase loan demand.

<sup>10</sup>This has been discussed in the press in recent years under the heading of currency wars.

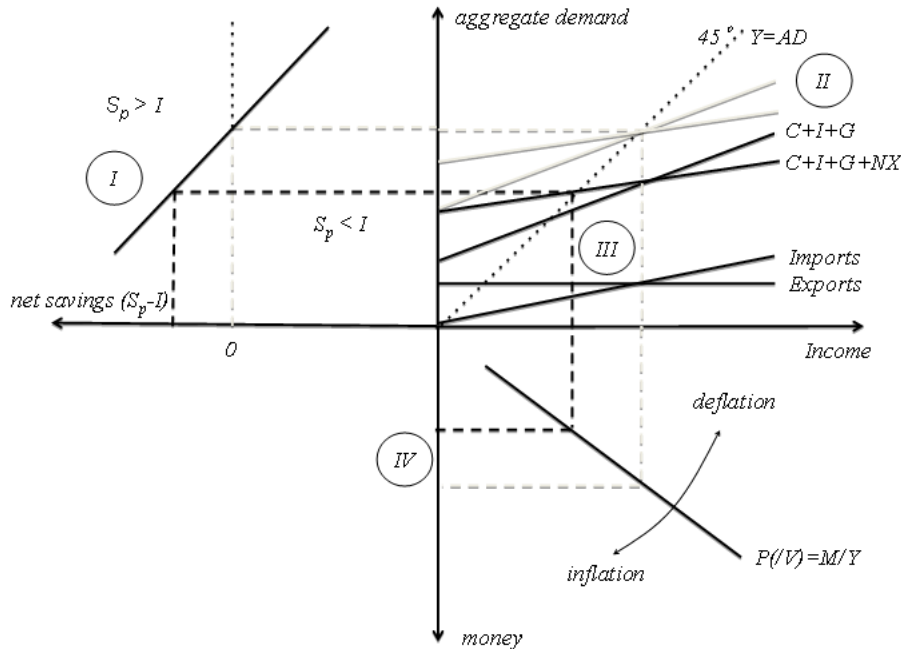


be modeled through an increase in the monetary aggregate which is caused by household borrowing. Figure 2 shows that expectations regarding the growth of the real economy (I) drive the expansionary credit creation process (II), which leads to higher incomes (III) thus validating the expectations of the actors. As a result, investment has increased over private savings, leaving the private sector in a position in which it accumulates net debt. The government balance has been set to zero, so the opposite position to the rise in private debt must be taken by the external sector.<sup>11</sup> The rise in incomes has increased imports but exports haven't changed, which means the current account turns into negative territory. A rise in private sector debt cannot continue forever, so it makes sense to have a look what happens when debt is repaid.

Figure 3 shows the deleveraging of the private sector when it has decided to reduce its debt. Note that the model treats private sector debt as aggregated debt. Hence, household debt levels are not the same as private sector debt as described by the

<sup>11</sup>The government budget of Ireland and Spain was close to zero before 2007, so that assumption is not unrealistic.

Figure 3: De-leveraging of the private sector, case I

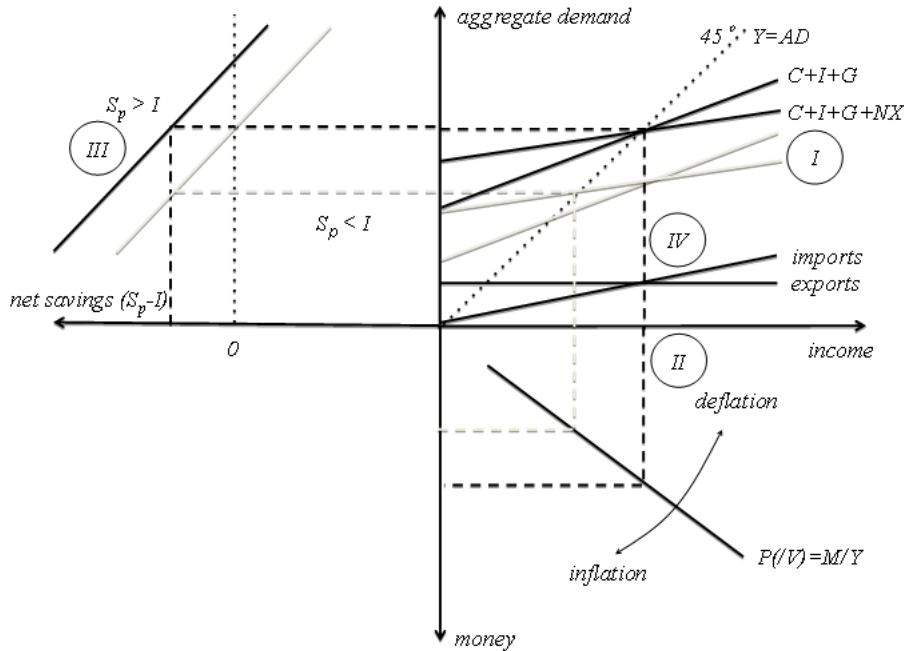


accumulated differences of investment and private saving. Net private debt has its counterpart in foreign wealth, which means that households and firms are indebted to the foreign private or public sector. While it is quite likely that this debt is denominated in foreign currency, this issue will not be discussed.<sup>12</sup> Deleveraging under the constraint of a balanced government budget means that the economy has to move into a position of net exporting. This allows the private sector to move into net saving, which allows it to reduce its debt. Therefore, the current account surplus is the other side of the coin of the private sector surplus. Income shrinks, which is how the current account surplus came about. It was a fall in imports rather than a rise in exports.

Figure 4 shows how an increase in aggregate demand can help with the adjustment. The rise in aggregate demand can result from expansionary government spending, a fall in taxes or a rise in consumption through an increase in the wage share. Redistribution of income towards those groups which consume relatively more of their income than the other groups would lead to this result. Income can

<sup>12</sup>There already exists a large literature on the 'original sin' of borrowing in foreign currency.

Figure 4: De-leveraging of the private sector, case II



also be redistributed by changes in other policy areas, like health care, the social system, pensions, or education. Lower taxes or higher government spending, whether discretionary or as a result of the automatic stabilizers at work, would also increase aggregate demand.

The increase in aggregate demand compensates the fall in the monetary aggregate that has been caused by the shrinking of balance sheets as private sector debt is repaid. The contraction in the monetary aggregate is stopped, and on the real side of the economy the demand gap is filled with government spending or consumption. This is stabilizing income, so that the private sector is now in a position to de-leverage without causing income to fall. The counterpart is the government debt in the case of deficit spending, not the external sector. There is no contractionary impulse to the world economy as in the first case. If redistribution of income has caused the rise in aggregate demand, private sector net saving is zero.<sup>13</sup> Some households are able to save more, others save less. A partial private sector deleveraging is made possible which leaves the debt position of the

<sup>13</sup>The grey line in the northwest sector replaces the black line.

aggregate private sector untouched.

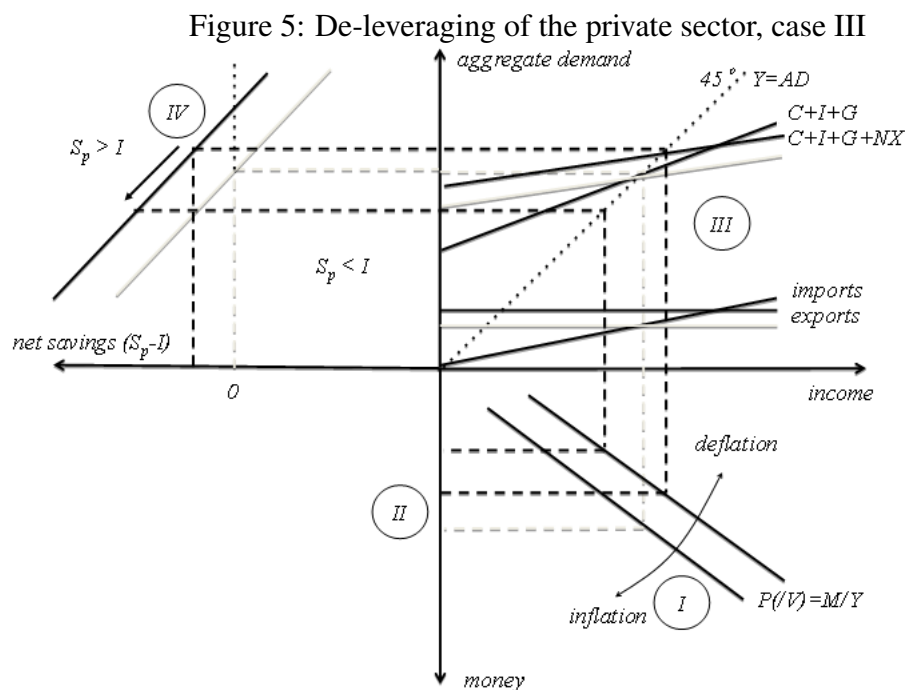


Figure 5 shows how an increase in net exporting can help with the adjustment. Assuming that a nominal exchange rate exists vis-a-vis the rest of the world, a devaluation can lead to higher real demand from the external sector in the medium term.<sup>14</sup> The increase in exports leads to a current account surplus, which enables the private sector to increase its net savings without leading to a fall in income. However, the rest of the world will suffer the opposite as the current account deficit will push the private sector towards more net debt. If the foreign private sector resists this by increasingly trying to spend less, then we get a demand problem at the level of the world economy. It is hence crucial to evaluate the willingness of trade partners to move into more debt before changing the exchange rate in an intent to shift the burden of adjustment elsewhere.

Obviously, if all countries experience private sector debt problems at the same time, then this policy won't work.<sup>15</sup> There is hence room for international coor-

<sup>14</sup>In the short term the well-known j-curve will probably make things worse before they can get better.

<sup>15</sup>This is why after the Scandinavian financial crisis in the early 1990s the economies bounced

dination to allow countries to expand at the cost of other countries depending on indicators that could be agreed upon, like unemployment or output gap.

## 4 Conclusion

After reviewing the sectoral balances inside a simple model based on the balance of payments, endogenous money and deficit spending in the context of a sovereign currency, it seems to be clear that economic growth, redistribution and private sector de-leveraging do not form a macroeconomic policy trilemma. The macroeconomic effects of redistribution can be compensated by a change in deficit spending of the government, if necessary. If incomes redistribution leads to excessive aggregate demand, either less government spending or a fall in the short-term interest rate caused by the central bank can cause other parts of aggregate demand to fall. If redistribution leads to suboptimal aggregate demand, the gap can be filled by more government spending or more private sector investment. Hence there is no necessary effect on de-leveraging or economic growth if economic policy makers react to macroeconomic problems. If, however, they prefer to stand still there can indeed be effects on economic growth. However, the central bank often has an inflation target to follow and politicians have voters to lure, so in practice it cannot be assumed that policy is 'neutral'. The whole point of 'policy' is that it is doing something and hence cannot be called 'neutral'.

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back so quickly: when the rest of Europe was growing and not minding their respective private and public debt positions, the Scandinavian countries could export their way out of the slump. This has not been possible for Portugal, Greece, Cyprus, Ireland and Spain in the years following the Great Financial Crisis.

## References

Bezemer, Dirk, Maria Grydaki and Lu Zhang. 2013. Credit is what Credit does: A Functional Differentiation of the Credit-Growth Relation. Unpublished manuscript

Darity, William Jr. and Arthur H. Goldsmith. 1996. Social Psychology, Unemployment and Macroeconomics. *Journal of Economic Perspectives* 10, pp. 121–140

Dodig, Nina and Herr, Hansjörg, 2014. Previous financial crises leading to stagnation: Selected case studies, IPE Working Papers 33/2014, Berlin School of Economics and Law, Institute for International Political Economy (IPE)

Ehnts, Dirk. 2012. A simple model of a currency union with endogenous money and saving-investment imbalances. IPE Working Papers 16/2012, Berlin School of Economics and Law, Institute for International Political Economy (IPE)

Fisher, Irving. 1933. The Debt-Deflation Theory of Great Depressions. *Econometrica*, 1(4): 337–357

Koo, Richard C. 2003. Balance sheet recession: Japan's Struggle with Uncharted Economics and its Global Implications. Singapore: John Wiley & Sons Pte Ltd

Krugman, Paul. 2002. Dubya's Double Dip? *New York Times* from February 2nd, 2008, <http://www.nytimes.com/2002/08/02/opinion/dubya-s-double-dip.html>

McLeay, Michael, Amar Radia und Ryland Thomas. 2014. Money creation in the modern economy. *Bank of England Quarterly Bulletin* 2014 Q1

Minsky, Hyman P. 1986. *Stabilizing an Unstable Economy*. New Haven: Yale University Press.

Okun, 1975. *Equality and Efficiency: The Big Trade-off*. Washington, D.C.: The Brookings Institution

Ostry, Jonathan David, Andrew Berg and Charalambos G. Tsangarides. 2014. Redistribution, Inequality, and Growth. *IMF Staff Discussion Notes* No. 14/2

The Onion. 2008. Recession-Plagued Nation Demands New Bubble To Invest In. <http://www.theonion.com/articles/recessionplagued-nation-demands-new-bubble-to-inve,2486/>

Wicksell, Knut. 1898. Geldzins und Güterpreise. Jena: Gustav Fischer