

# Central banks and distribution

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Institute for New Economic Thinking

Annual Meeting

Paris – April 8 - 11, 2015

Income and wealth inequality have been rising in the past three decades. Surprisingly, inequality has been largely ignored in the literature and practice of monetary policy. However, due to the crisis, this question has been gaining more attention. Recent studies have shown that unconventional monetary policy implemented to fight the Great Depression in advanced economies has significant distributional effects and tends to exacerbate inequality. This poses a challenge for central banks. Not the least because increasing inequality is likely to affect monetary policy's transmission mechanism, thereby reducing the effectiveness of monetary policy.

The first section of this paper presents a critical appraisal of the traditional view of central banking which has neglected the relation between distribution and monetary policy. The second section challenges this view and presents the increasing evidence showing that monetary policy exerts significant effects on distribution, particularly in the euro zone. The third section provides some answers to the question of how central banks should respond to growing inequality and its relationship to monetary policy.

## **1. Distribution is not a concern for “conservative” central banks**

It is well known that income and wealth inequality has increased on the average in developed economies since the 1980s (OECD, 2014). Existing data suggest that inequality has been on the rise in the United States and in the euro area. The Gini coefficient, a standard measure of income inequality that ranges from 0 (when everybody has identical incomes) to 1 (when all income goes to only one person), stood at an average of 0.29 in OECD countries in the mid-1980s. By the end of the last decade, it had increased by almost 10% to 0.32. It rose in 17 of the 22 OECD countries for which long-term data series are available.

Surprisingly, the issue of distribution of income and wealth has been largely ignored by central banks until recently, for several reasons. First, the “conservative” central banker considers that his mandate is monetary stability and not distribution. As Benoît Coeuré, a member of the Board of the European Central Bank (ECB), puts it : “The task of the ECB under the Treaty on the Functioning of the European Union is to ensure price stability in the medium term. It thus focuses on income and wealth stabilization rather than on the allocation of economic resources, or on redistribution” (2012).

This view is based on two principles. First, according to the “separation principle” put forward by Milton Friedman, central banks must focus on price stability; other issues such as employment, financial stability and distribution should be addressed by different policies, which should be defined

independently from monetary policy. According the second principle, price stability must be considered as the best way to maintain the purchasing power of households; hence, there is no trade off between price stability and income distribution.

This view of monetary policy stems from the traditional macroeconomic framework used by central bankers. This framework is based on the general equilibrium behavior of homogenous “representative” households and firms, thereby abstracting from distributive effects. A good example is given by *Dynamic, Stochastic General Equilibrium* (DSGE) macroeconomic models which have been used by central banks in the pre-crisis period to define the inflation targeting.

Such macroeconomic models were not able to emphasize the role of financial vulnerability, associated with stagnant wages and rising inequality which were in the origins of the crisis, and how inequality and vulnerability are playing today a major role for the recovery process.

Furthermore, as they focus on aggregate measures of spending, credit supply, wealth, income, prices and interest rates, central bankers are far from a comprehensive understanding of how wealth and income inequality may affect business cycles dynamics.

In a famous paper published in 2010 at the outset of the financial crisis, Olivier Blanchard, chief economist at the IMF, recognized that there was a need to revise the pre-crisis consensus with respect to macroeconomic policies, including monetary policy. Three main changes were called for regarding (i) the risk of low inflation targeting, (ii) the limited role given to financial regulation and (iii) to fiscal policy. However, this article missed a fourth limit of the pre-crisis consensus, i.e. the relation between monetary policy and the distribution of income and wealth.

## **2. Distribution became a major issue for central banks in the aftermath of the crisis**

### **2.1. Paul Volker’s monetary policy and the rise in inequality**

The arrival of Paul Volker at the Federal Reserve in 1979 coincided with the implementation of strongly restrictive monetary policies in the US and in major developed economies to squeeze inflation which was rising dangerously then. This policy had a dramatic effect on income distribution as it came at the expense of lower wage rates, and labor’s share of income. Since labor costs are a high proportion (around 60% – 70%) of most developed economy businesses, it was decided that the best way to curb down inflation and improve competitiveness was to constrain wage growth. Any time wages accelerated, central banks tightened monetary policy, pushing up unemployment and squeezing labor’s share.

The corollary of reduced wage growth has been increased corporate profits as a proportion of GDP. And the rich, who own the major share of assets, have benefited accordingly. As a consequence, the share of labor income has fallen since the 1980’s on one hand, the share of income going to the 1% of earners has risen sharply on the other hand. This change in distribution reflects partly the degree to which high income earners benefited from the shift to higher corporate profits.

Inflation targeting, which has been at the core of monetary policy, can be viewed as a diluted version of the gold standard, in which the interests of creditors (in terms of preserving the value of money) were put ahead of the interests of workers.

Of course, monetary policy and inflation targeting are not the only causes of this huge change in the distribution of wealth and income since the 1980s. In his monumental book, Thomas Piketty (2014) points to the big drops in top tax rates, particularly in the United States and Great Britain since 1980.

## **2.2. Central bankers became recently aware of the effects of monetary policy on distribution**

The crisis has changed the perception of academics and central bankers with respect to distribution for several reasons. Distribution is seen as an important issue which cannot be ignored by central bankers any longer. There is increasing empirical evidence that monetary policy and distribution are related. The issue of distribution has taken a specific dimension in the euro area which calls for attention.

### ***2.2.1. The role of income and wealth distribution cannot be ignored any longer***

It has been recognized by central bankers that stagnant wages in the middle class income and increasing inequality of wealth and income has been a major cause of rising households' debt and financial fragility. For instance, Sarah Bloom Raskin, member of the Board of Fed, argues that "At the start of this recession, an unusually large number of low-income and middle-income were vulnerable to exactly the same types of shocks that sparked the financial crisis" (2013). Second, it is acknowledged by economists at the IMF that rising inequality, combined with high debt, can trigger financial crises (Kumof et alii, 2012). Furthermore, a recent OECD paper shows that inequality is strongly related with slower growth (Cingano, 2014)

### ***2.2.2. Central bankers' recognition of the distributional effects of monetary policy***

Central bankers have shown "benign neglect" with respect to the issue of distribution during the pre-crisis period. However, not only is this issue now taken seriously for the reasons just mentioned, but it appears that central bankers have changed their mind on the relationship between monetary policy and distribution.

This is probably so because, as the zero lower bound was encountered, traditional monetary policy became ineffective. This led to unconventional monetary policy (UMP) with new channels of transmission, and new collateral effects. Three collateral effects have been put forward, (i) global spill over on emerging market countries, (ii) increasing financial instability and (iii) rising wealth and income distribution.

European central bankers acknowledge that monetary policy has a short-term impact on inequality. Whether monetary policy can durably modify the level of income or wealth inequality in the long-term is, however, subject to debate. Central bankers at the ECB and the BoE reckon that loose monetary policy may have increased inequality by rising asset prices. At the same time, they point out that inequality would probably have been worse if central banks did not take strong measures to counter the effect of the financial crisis.

Yves Mersch, a member of the ECB Executive Board, opened a speech on monetary policy and economic inequality with a strong statement on October 17, 2014: “All economic policy-makers have some distributional impact as a result of the measures they introduce – yet until relatively recently, such consequences have been largely ignored in the theory and practice of monetary policy... Non-conventional monetary policy however, in particular large scale asset purchases, seem to widen income inequality, although this is challenging to quantify”

Mark Carney, Governor of the Bank of England, gave a speech in May 2014 on the “Growing exclusivity in capitalism”. In his view, “While to not have acted would have been catastrophic for all, the distributional consequences of the response to the financial crisis have been significant. Extraordinary monetary stimulus – both conventional, through low short-term interest rates, and unconventional, through large scale purchases of assets – raised a range of asset prices, benefiting their owners, and lowered yields, benefiting borrowers at the expense of savers.”

### **2.2.3. Empirical evidence about the distributional effects of monetary policy**

In recent years, there has been a growing body of literature on the distributional effects of monetary policy. A comprehensive study by Coibion et al. at the National Bureau of Economic Research (NBER, 2012) outlines five potential channels by which more accommodative measures might affect inequality : i) the income composition channel based on the differences between wages and capital income; ii) financial segmentation is related to the ability of some financial market actors to benefit more from policy shocks than others; iii) the savings redistribution channel works through the impact on nominal contracts of unexpected inflation; iv) the earnings heterogeneity channel: the tendency of lower incomes to be more sensitive to the business cycle; and v) the portfolio channel: upper-income households, who tend to be the largest holders of securities, will gain more from asset market booms caused by expansionary monetary policy. The empirical study by Coibion et al. finds that contractionary shocks lead to *greater* inequality in the United States in the pre-crisis period. They find that income distribution is changed primarily through the savings redistribution (savers gain, borrowers lose) and the earnings heterogeneity channels (households with lower incomes earn a large portion of income from transfers, which tend to be countercyclical).

Dobbs et al. (2013) look specifically at the period of what they call ultra-low interest rates. This study published by McKinsey Global Institute suggests that, as a result of low rates in the US, the UK and the euro area, households have lost a combined \$630 billion as lower interest earned on deposits and other fixed income investments has outweighed lower interest payments on debt.

James Bullard (2014), president of the Federal Reserve Bank of St Louis, has also examined whether quantitative easing has exacerbated US inequality during the post-2008 experience. It has been asserted that the Fed’s policy of buying US government bonds and mortgage-backed securities has depressed real yields on relatively safe assets and thus encouraged savers to move into riskier assets, such as equities, raising their prices. Since only half of US households hold equities and they tend to be the wealthiest households, it is likely that this policy could be making the wealth distribution more unequal.

Ayako Saiki and Jon Frost (2014) have examined the impact of unconventional monetary policy on the distribution of income in Japan, a country with a long history of non-standard measures. Their results show that while aggressive monetary policy seems to be having the desired effect on the economy, this strong medicine has come with the unwanted side-effect of higher income inequality. They suggest a transmission mechanism via the portfolio channel: an increase in the monetary base (through purchases of both safe and risky assets) tends to increase asset prices. Higher asset prices benefit primarily households with higher incomes, who hold a larger amount and share of overall

savings in equities, and thus benefit from greater capital income. Hence, according to this recent empirical study based on VAR estimations, the Bank of Japan’s unconventional policies have widened income inequality.

Ayako Saiki and Jon Frost conclude that their study holds lessons for other countries undertaking unconventional monetary policy (UMP). Japan’s experience provides a cautionary tale on the potential side-effects of UMP. They warn that the negative effects of UMP on distribution via the portfolio channel may be even larger in the US, the UK and many euro area economies, where households hold a larger portion of their savings in equities and bonds.

**2.3. The euro-zone : specific distributional effects**

The effects of monetary policy on distribution have been quite powerful in the euro zone due to its specific institutional setting. Monetary policy in the euro zone has been much less accommodative than in other advanced economies (United States, United Kingdom and Japan). In fact, monetary policy in the euro zone is characterized by a “deflationary bias” with a depressing impact on incomes (Pettinger, 2015). The major transmission channels of monetary policy to the real economy have been the interest rate and the exchange rate channels.

***Deflationary bias of the euro zone***

First, the euro’s institutional design was a political choice biased toward deflationary adjustment policies. Deflationary bias means that there is a built-in tendency for economic policy to promote lower growth and lower inflation disproportionately benefiting creditors and capital owners, and leading to falling incomes and higher unemployment. This deflationary bias in the euro zone can be illustrated by the comparison with the US performance with respect to growth, inflation and unemployment. The inflation rate has declined more sharply in the euro zone than in the US since this is the leading goal of the European central bank (ECB). In recent years, inflation has been below 2% which is the official target of the ECB. Negative inflation rates have been recorded in 2014 – 2014, pointing to a deflationary threat in the euro zone.

**Macroeconomic performances in the United States and in the Euro zone (rates in %)**

	United States		Euro zone	
	1980 - 1999	2000 - 2013	1980 - 1999	2000 - 2013
GDP – rate of growth	3.1	1.8	2.2	1.0
Inflation rate	4.3	2.4	5.2	2.0
Unemployment rate	6.5	6.6	9.6	9.3

Source : IMF

Monetary policy in the euro zone has been more restrictive than in the US during the past three decades. As a result, the rate of growth of GDP has been lower and the unemployment rate higher in the euro zone, as illustrated by the table above.

Two features of the euro zone are crucial in this respect (Guttman & Plihon, 2014). First, monetary policy is the unique economic policy instrument at the euro zone level. Fiscal policy does not play a significant role as illustrated by the fact that the European budget is very small, representing less than 1% of GDP. Second the major, if not sole, target of the ECB is low inflation. During the crisis

period (2007 – 2015), inflation has remained well below target, while growth has been anemic and unemployment well above double figures (11%).

At the crux of the euro zone's growth dynamic during its first decade was the very strong pressure exerted on labor by deflationary policies, resulting in relatively spectacular declines in wage shares. The wage share in GDP decreased in the euro zone on average by 2.3% from 1999 to 2007. The decline in wage share in the US was limited to 1.9% during the same period. This decline was especially pronounced in Spain (-4.3%), Germany (-3.9%), and the Netherlands (-2.7%).

### ***Household finances and the interest rate channel***

The distributional effects of monetary policy depend largely on the structure and composition of household finance. The debt to income ratio has been rising sharply in the euro zone, in particular in Spain and Ireland, countries which has experienced important real estate bubbles and crises. In April 2013, the ECB published the results of the Household Finance and Consumption Survey launched in all country members of the euro zone. In the context of concerns about inequality, the survey data can be used to assess changing financial pressures on euro area households as a result of the crisis and monetary policy decisions.

Two results have been put forward by ECB authorities (Mersch, 2014). The debt service-to-income ratio, which gauges household's ability to service existing debt or to take new loans, has recently been affected by two countervailing factors. First, the decline in interest rates had a positive impact on that ratio; this effect has been more significant for households with variable rate mortgages. However, the impact of falling rates on the debt-to-service ratio of low-income households has been dampened by the fact that those poorer households have been disproportionately affected by the rise in unemployment.

Second, while high-income households experienced the largest decline in wealth between 2008 and 2013, the impact on consumer spending by low-income and middle-class households was magnified by their stronger response to wealth shocks. This illustrates the fact that the transmission of monetary policy to the real economy has been affected by distributional effects (Guttman & Plihon, 2010).

### ***The reluctance of the ECB to pursue non conventional monetary policy***

Despite a prolonged period of low inflation during the years of the Great Recession, the ECB has been very reluctant to implement unconventional monetary policy (e.g. quantitative easing). It took a serious threat of deflation to finally push the ECB into proper Quantitative Easing (Q.E.) in January 2015. The reluctance of the ECB to engage in Q.E. can be explained by the strong influence of very conservative German Central bankers who fear future inflation caused by printing money. The ECB decision to refrain from buying government bonds, contrary to the Fed and the Bank of England, is also related to the "no bail out" principle written in the Maastricht Treaty. This orthodox policy of the ECB contributed to amplify the sovereign debt crisis in the euro zone.

As a result of this very conservative policy on the part of the ECB until 2015, the euro zone countries did not benefit from any monetary stimulus to offset the negative impact of fiscal austerity imposed by the European treaties (Stability Pact & Fiscal Pact). In fact, monetary policy exerted a depressing impact on the euro zone economy through the exchange rate channel. Indeed, until 2014, euro zone's countries had to cope with upward pressures on the euro exchange rate due to the restrictive stance of the ECB leading to higher interest rates in the euro zone than in the US and the UK. This problem has been particularly dramatic for countries which are relatively uncompetitive (Greece,

Spain, Portugal and Ireland). Diverging monetary policies between the US going toward the end of QE, while the ECB decided to implement QE, led to a spectacular depreciation of the euro by about 40% since the second semester of 2014.

### ***The internal exchange rate channel***

In fact, the question of the exchange rate channel is more important among euro zone's countries than with respect to countries outside the euro zone. If we consider current account imbalances, the external value of the euro lies close to where it should be since the euro zone has a more or less balanced current account. However the picture is quite different if we look at current account imbalances of individual countries in the euro zone. There are two groups of countries, the Northern countries with high external surplus, and the Southern countries with important external deficits. If we admit that the value of the euro across member economies as a whole is about right since the current account of the euro zone is balanced, then strong euro zone economies must be benefiting from a relatively weak currency – weak compared to what it would be if they had retained their own currency – while weak economies must be dealing with a relatively strong currency. To quantify the impact of that imbalance, Mazier and Petit (2013) considered a scenario involving an imaginary collapse of the euro zone in 2011. Their model showed that a hypothetical post-euro German currency would be 23 per cent stronger than the euro. In other words, they found that the euro was undervalued by nearly a quarter for German exporters to non-euro countries. Likewise, Austrian and Dutch exporters were benefiting from a euro undervalued by between 10 and 15 per cent. By contrast, French exporters faced a currency overvalued by around 15 per cent, while Greek exporters had to survive under a currency misalignment of 22 per cent.

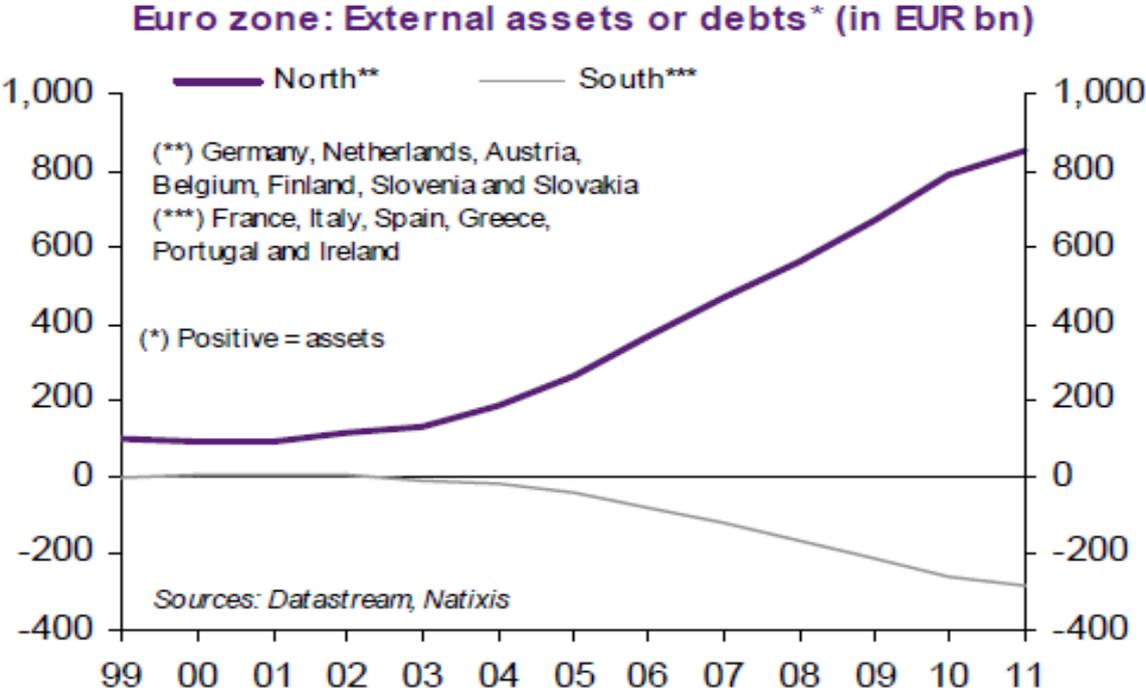
Since nominal exchange adjustments are not possible within a single currency area, Southern countries had to resort to internal devaluation by a very substantial reduction in wages to regain competitiveness and reduce current account deficits. In 2014, four countries, Greece, Portugal, Cyprus and Slovakia experienced falling wages and prices as they tried to restore competitiveness through internal devaluation. These policies had a negative impact on income distribution. Internal devaluation based on wage deflation can be seen as a substitute to the weakness of macroeconomic stabilization policies in the euro zone as well as the absence of exchange rate devaluation.

### ***Geographical distribution and the mercantilist bias***

Increasing business profitability and price competitiveness through downward pressure on wages became a major strategy in the euro zone's mercantilist countries, i.e. Germany, Austria, the Netherlands, and Sweden. No attempt was made by the EU members or by the EU Commission to harmonize wage evolution. Through this non cooperative game Germany, Austria, the Netherlands, and Sweden succeeded in supporting their growth with a positive contribution of net exports. These mercantilist countries of Northern Europe ran substantial current account surpluses, while Southern countries experienced widening external deficits. As a result, the factors of growth, notably the balance between domestic demand versus exports, have been quite divergent among European countries, feeding large macroeconomic and external imbalances. The widening external imbalances resulted in huge income and wealth transfers from Southern countries to Northern mercantilist countries. The latter accumulated external claims on the former as illustrated by the graph below, leading to a major change in wealth and income distribution between, as well as within, euro zone's countries.

This 'winner-take-all, loser-pay-all' outcome – where the Euro zone's richer countries gained at the expense of the poorer ones, while at the same time widening domestic inequality – has been the result of political choices favoring capital over labor, and creditors over debtors. This outcome has

been made worse by the economic policy drift towards deflationary adjustment at the European level, the conservative stance of the ECB, and the growing importance of organized financial interests in Brussels (Guttman & Plihon, 2014).



**Section 3 : How should central banks respond to the challenge of growing inequality ?**

The official view of central banks, according to which distribution should not be a goal of monetary policy, did not change in the aftermath of the financial crisis. Although he recognized that monetary policy has distributive effects, Yves Mersch, a member of the ECB board stated clearly in his 2014 keynote speech mentioned above that : “Central banks are not charged with the task of addressing inequalities in the distribution of wealth, income or consumption – nor are they dealing with the broader challenge of promoting economic justice for society as a whole.”

However this view should be challenged. Given the evidence presented in the previous section, it seems clear that central banks should take into account the distributive effects of their actions; not the least because these actions effects may affect the channels of monetary policy and its effectiveness with respect to the goals of monetary and financial stability.

**Central banks should report on distributive effects of monetary policy**

A first step would be that central banks report regularly on the distributive effects of their policies, as proposed by Pierre Nonnin, a Fellow at the Council on Economic Policies (2014). Pierre Nonnin suggests that “central banks publish a dedicated chapter on the topic in at least one of their key reports annually and that they address the distributive impact of their policies in other communication channels (e.g. press conferences, hearings, speeches). This would foster an informed public debate on the topic. It would also provide an impulse for researchers to generate knowledge

and deepen our understanding of the key distributive impacts of monetary policy and the channels issue through which they unfold”.

We should know in particular whether the policy actions tend to reduce or increase inequality; and the extent to which such distributive effects, if they exist, are short-term (temporary) or long term (durable) effects. According to existing evidence, the distributive effects of monetary policy actions seem to be mainly short-term ones, and if so, they do not represent a high cost for society. It would be a good idea for central banks to use specific indicators to measure the impact of policy actions on firms and households finance, such as Gini indexes of income distribution, and debt-service ratios for the different income-brackets.

### ***Broader targets should be assigned to central banks***

Modern monetary policy needs to have broader objectives and instruments. In particular, employment creation, more rapid economic growth, financial stability, as well as poverty and inequality reduction, should join inflation stabilization as key goals of central bank policy.

Furthermore, alternative indicators need to be defined to guide expectations. Focusing on inflation targeting in times of slow growth and below target inflation is not adapted to the conduct of monetary policy. Nominal GDP targeting, leaving more space for GDP growth, as proposed by some economists (Woodford, 2013), may be more efficient in the presence of high inequality.

Central banks should not concentrate only on the evolution of the prices of goods and services. They should also take into account the impact of monetary actions on the evolution of the prices of financial assets, including real estate prices. This should be the case specifically when quantitative easing policies, resulting in the creation of a huge volume of liquidity, may lead to sharp increases in the prices of financial assets with important distributional effects.

### ***The need for optimal policy mix***

Last and not least, the existence of side effects of monetary policy, mainly on financial stability (bubbles) and on wealth and income distribution, raises the question of the optimal policy mix. Two problems must be dealt with: (1) monetary policy actions may have non desired side effects which need to be taken care of; (2) monetary policy by itself cannot deal with several targets at the same time. Hence, there is a need to combine monetary policy with fiscal policy instruments.

Fiscal stabilization policy is particularly needed to complement monetary policy in the current situation in which the zero lower bound has been reached for interest rates making monetary policy inefficient. The combination of monetary policy and fiscal policy is critically needed in the euro zone. Due to the institutional design imposed by the European Treaties, there are no concerted macroeconomic policies at the European level. Furthermore, due to the so-called Fiscal Compact Treaty (2014) which puts constraining limits on government deficits and debts, there is no space for the use of fiscal policy for stabilization purposes to correct both for the income and geographical inequalities which currently plague the euro zone, as we have seen before.

European economists have proposed to expand the European budget from 1% to 5% of GDP in the medium run allowing European policies to reduce geographical inequality and to develop public investment in environmental, ICT applications and health fields (EuroMemorandum, 2015). The 315 € billion investment program over three years proposed by Claude Juncker, the new President of the European commission, is too timid. A 2% of EU GDP over a period of 10 years, about €260 billion per

year, as proposed by the European Trade Union Confederation (ETUC), would be more adapted to stimulate growth and to prepare the energetic transition in the European Union.

#### References :

Bank of England (2012). "The Distributional Effects of Asset Purchases", Quarterly Bulletin, 2012 Q3, 254-266.

Blanchard O., G. Dell'Araccia, P. Mauro (2010), "Rethinking Macroeconomic Policy", IMF Staff Papers

Bloom Raskin S. (2013), « Aspects of Inequality in the Recent Business Cycle », Remarks at "Building a Financial Structure for a More Stable and Equitable Economy", Levy Economics Institute of Bard College, New York, April 18.

Bullard J. (2014), "Income Inequality and Monetary Policy: A Framework with Answers to Three Questions", Speech/C. Peter McColough Series on International Economics, Council on Foreign Relations, June 26, 2014.

Cingano, F. (2014), "Trends in Income Inequality and its Impact on Economic Growth", *OECD Social, Employment and Migration Working Papers*, No. 163,

Cœuré B. (2012), "What can monetary policy do about inequality?", Speech, International Day for the Eradication of Poverty, Intergroup "Extreme Poverty and Human Rights, Fourth World Committee" event, European Parliament, Brussels, 17 October

Coibion, O., Gorodnichenko, Y., Kueng, L. and Silvia, J. (2012). "Innocent Bystanders? Monetary Policy and Inequality in the U.S.", NBER Working Paper, no. 18170.

Dobbs, R., Lund, S., Koller, T. and Shwayder, A., QE and ultra-low interest rates: Distributional effects and risks, McKinsey Global Institute, November 2013.

European Central Bank Monthly Bulletin (2013), The financial vulnerability of euro area households – evidence from the Eurosystem's household finance and consumption survey, April.

European Economists for an alternative Policy in Europe (2015), "What Future for the European Union ? – Stagnation and Polarisation or New Foundation", EuroMemorandum, [www.euromemo.eu](http://www.euromemo.eu)  
Federal Reserve (2013). Transcript of Chairman Bernanke's Press Conference, September 18, 2013.

Guttman R., Plihon D., (2010). "Consumer Debt at the Center of Finance-Led Capitalism", International Review of Applied Economics.

Guttman R., Plihon D., (2014), "Wither the Euro", in "The Political Economy of Financial Crises", Oxford Handbooks, Oxford University Press.

Kumhof, M., Rancière, R. and Winant, P. (2013). "Inequality, Leverage and Crises", IMF Working Paper, WP/13/249.

Mazier J., Petit P. (2013), « In Search of Sustainable Paths for the Eurozone in the Troubled Post-2008 world », Cambridge Journal of Economics, 37, p 513 – 532.

Mersch Y. (2014), “Monetary Policy and Economic Inequality”, Keynote speech, Corporate Credit Conference, Zurich, 17 October.

Monnin, P. (2014). “Inflation and Income Inequality in Developed Economies, CEP Working Paper, 2014/1.

OECD (2014), “Focus on Inequality and Growth”, December, <http://www.oecd.org/els/soc/Focus-Inequality-and-Growth-2014.pdf>

Ostry, J., Berg, A. and Tsangarides, C. (2014). “Redistribution, Inequality and Growth”, IMF Staff Discussion Note, 14/2.

Pettinger T. (2015), “Deflationary Bias in the Eurozone”  
[www.economicshelp.org/blog/author/tejvan/page/2/](http://www.economicshelp.org/blog/author/tejvan/page/2/)

Piketty, T., “Capital in the Twenty-First Century”, Harvard University Press, 2014.

Saiki, A. and Frost, J. (2014). “Does Unconventional Monetary Policy Affect Inequality? Evidence from Japan”, CEP Working Paper, 2014.

Wong, A. (2014). “Population Aging and the Aggregate Effects of Monetary Policy”, MPRA Paper, no. 57096.

Wood M. (2013), “Monetary Policy Targets after the Crisis”, IMF Staff Papers  
<https://www.imf.org/external/np/seminars/.../mw2.pdf>