

Global Trends in Inflation: Are Central Banks Barking up the Wrong Tree?

Monetary Dialogue September 2019



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Abstract

The ECB will not be able to achieve its inflation target over the foreseeable future. Further expansionary measures will have at most a modest impact on financial market conditions and even less on overall demand. Moreover, the impact of any demand stimulus on inflation is highly uncertain. The reasons for low inflation persistence despite tight labour markets almost everywhere are not fully understood. It is a global phenomenon, but not necessarily due to globalisation. One global factor seems beyond dispute, namely a fall in global equilibrium real interests. However, different views of how the economy operates lead to very different views how central banks should react to this phenomenon.

There is little evidence that cooperation between central banks would have a significant impact on their (limited) ability to achieve their inflation targets.

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AUTHORS

Daniel Gros, CEPS (Centre for European Policy Studies)

ADMINISTRATOR RESPONSIBLE

Dario PATERNOSTER

Drazen RAKIC

EDITORIAL ASSISTANT

Janetta CUJKOVA

LINGUISTIC VERSIONS

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ABOUT THE EDITOR

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To contact the Policy Department or to subscribe for updates, please write to:
Policy Department for Economic, Scientific and Quality of Life Policies
European Parliament
L-2929 - Luxembourg
Email: Poldep-Economy-Science@ep.europa.eu

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LIST OF ABBREVIATIONS

ECB	European Central Bank
PSPP	Public Sector Purchase Program (of the ECB)
QE	Quantitative Easing

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EXECUTIVE SUMMARY

- Persistently subdued inflation despite improving labour markets and other indicators of economic slack constitute a global phenomenon which characterises most developed economies. It is thus a global phenomenon. But this does not imply that it is due to globalisation. It seems more likely that a number of trends affect most developed economies in parallel.
- Low inflation despite economic slack (i.e. the absence of a reliable Phillips curve relationship) affects different economies to a varying degree: in Japan, one cannot detect any slack; low inflation seems ingrained, whatever the employment situation. By contrast, inflation has remained below, but much closer to the target in the Anglo-Saxon economies, e.g. US and UK. The euro area seems to occupy an intermediate position. It experiences similar low inflation like Japan, its labour market is also tightening, but it still has pockets of high unemployment.
- A caveat: it remains to be seen whether the current weakening of the economy will turn into a real recession which could interrupt the ongoing tightening of labour markets (on average) throughout the euro area. This was not the case in 2015/6 when growth also slowed down, but could happen this time.
- Recent research suggests that the most important common or global trend affecting advanced economies is the decline in the 'equilibrium' real interest rate, called r^* , in central bank parlance. The causes of the decline in r^* are disputed, ageing, low productivity growth, after-effects of the global financial crisis and central bank policy itself, have probably all contributed. But there is no dispute that real rates have indeed declined; and that central banks need to take this element into account when setting policy at the national level.
- Central bank policy, including in the European Central bank (ECB), is dominated by the idea that monetary policy should be eased when r^* declines. The line of reasoning is the following: prices are sticky, at least in the short run. This means that if the equilibrium real rate ($=r^*$) declines a central bank needs to lower the policy interest rate (or increase asset purchases if the policy rate is already at zero), to avoid a situation in which the actual real interest rate, deflated by today's inflation, is above the global long run one.
- A minority view has taken the opposite stance. The, so-called, Neo Fisherian view is based on the generally accepted idea that in the long run r^* is determined by global capital markets. This view implies that central banks should increase the policy rate (or reduce asset purchases) when r^* is low. Under this view, a higher inflation rate is required to keep the real rate constant if the nominal interest rate increases.
- The ongoing weakness of inflation in the face of ultra-low rates into the foreseeable future should make the ECB reflect whether its approach will ever bear fruit.

1. INTRODUCTION

One needs to be careful with the superficial arguments why globalisation should depress inflation. The 26 March 2019, speech by Mary C. Daly, President and Chief Executive Officer, Federal Reserve Bank of San Francisco, referred to in the ToR for this briefing, represents a good example of the way different ideas are often mingled up in the broader statement that ‘globalization fosters disinflation’

“in the global marketplace, many firms have lost pricing power, facing ever increasing competition to hold onto customers. This means they have a harder time passing along rising costs, such as wages, to final goods prices. Therefore, an important wedge that is been evolving over several decades is the loss of worker bargaining power. Declining unionization, along with increased automation and globalization, have made it harder for workers to push for higher pay, even in very healthy job markets. This weakens the link between employment and wage growth”

The first part of this paragraph asserts that globalisation lowers the pricing power of firms, which should imply lower margins and thus a higher share of production going to workers. But this is the opposite of what has happened, at least until very recently. The wage share has actually fallen in most advanced countries and the share of profits in GDP has increased, again until very recently.

The second part of this paragraph surmises that globalisation, maybe coupled with automation, lowers the bargaining power of trade union and thus leads to lower wage growth given unemployment or other measures of economic slack. This would, in the first instance, mean that wages should be lower, not necessarily prices. This argument is at least partially corroborated by the data in that wage growth has recently be rather lower than one would expect given low and declining unemployment rates. However, the relationship between unemployment and wages has held up better than the relationship between unemployment and inflation (i.e. the Phillips curve). Empirical research tends to show that automation had a more important impact than globalisation (Autor and Salomons, 2018).

Most of these arguments have gained ground in the light of the intense period of globalisation up to 2008. However, the decline in the labour share (wage increases below productivity) already started much earlier, and most of these arguments could account mainly for a step change in the level of prices, rather than continuing deflation. In addition to this, if the uncertainties created by the US-China trade war persist, and affect global value chains and trade beyond the bilateral US-China relationship, one would have to surmise that these globalisation factors should now operate in reverse, increasing inflation.

As an aside, one should note that until the advent of the global financial crisis in 2007/8, a common argument was that globalisation should lower inflation via higher productivity. This argument is no longer used since total factor productivity growth has fallen, not increased over the last decade.

A more recent strand of economic literature has identified another global factor, namely a persistent downward trend in real interest rates across the world. The existence of this trend is not disputed. However, it is not clear what it implies for monetary policy. This is a sensible question since short run and long run properties of the most commonly accepted economic models (including those used by central banks) point in different directions.

This contribution will start with a short summary of the literature on globalisation and inflation.

2. GLOBALISATION AND INFLATION

The purpose of this section is not to provide a survey of the literature, but only to present, in a stylized way, the framework through which one can analyse the impact of global development on inflation.

Central banks base their policy essentially on three steps:

- i) Lower (policy) rates strengthen (domestic) demand.
- ii) Stronger domestic demand in turn leads to higher employment, which then translates into higher wages.
- iii) Higher wages should lead to higher prices.

Steps ii) and iii) are usually taken together in a relationship between economic slack and inflation (also called the Phillips curve).

Few economists would argue today that unemployment (or some other measure of economic slack) represents the only driver of inflation. This is why much empirical work also looks at other determinants of inflation, e.g. import prices (including in particular oil prices) of inflation expectations (which might affect wages, and thus indirectly also prices). A generalised finding of this work is that economic slack has some impact on inflation, but it is no longer the most important factor. Most of this work analyses how global factors can affect domestic inflation in addition to domestic variables. Early work which emphasised how global factors can shift the Phillips curve includes Borio and Filardo (2007); but see also, more recently, McCoy, Salto and Žďárek (2019), Grishchenko, Mouabbi, and Renne (2017). Forbes (2019) also emphasized the importance of global factors.

The work of Bobeica and Sokol (2019) illustrates the problem with this literature. There exist hundreds of different combinations one can think of, to measure economic slack (unemployment, the output gap, employment rates, etc.) and to measure inflation (the HICP, core inflation, the increase in wage costs of take home pay, or hourly wages, etc.). With so many models to choose from, one can always find some which still show a 'Phillips curve', and others which do not.

One might thus characterize ECB thinking in this way: A bilateral relationship (domestic economic slack and inflation) is clearly no longer sufficient to describe the inflation process in the euro area. But, given all these global factors, domestic slack should still have a negative impact on inflation.

A problem with this literature is the failure of inflation (even core inflation) to accelerate in the euro area over the last 2-3 years despite falling unemployment. As it is also difficult to find other negative factors over the recent past, most of the recent inflation experience remains unexplained in most models. (An exception are those models, which include more and more detailed measures of economic slack, like the unemployment rates of particular groups e.g. Cordemans and Wouters (2018). Japan provides another example of the failure of the Phillips curve relationship which started since the inception of Abe policies designed to reflate the country.)

The failure of model based relationships between inflation and economic slack, even if augmented by a multitude of global factors has led to a host of other, more informal explanations of why inflation has tended to remain low throughout developed economies. Sanchez and Kim (2018) provide a useful summary of these alternative explanations, but without finding a convincing alternative explanation.

The fact that inflation has failed to budge in the face of massive stimulus has led to two reactions.

A) Central bankers are convinced that their recipe is right, but that they need to augment the dose of stimulus.

B) By contrast, other observers are beginning to doubt the recipe 'lower rates to stimulate demand and thus inflation'. Summers and Stansbury (2019) argue that recent experience with stubbornly low inflation should be taken as warning signs that the potency of monetary policy in hitting an inflation target should not be over-estimated. They argue that pursuing the quest to lower interest rates might be counterproductive at this point. Their argument is thus that the first mechanism mentioned above (lower rates lead to stronger demand) does not work at very low rates, or may even go into reverse, because target savers will have to save even more in response to lower rates if they want to achieve a certain income from their investment. Lower rates might thus lead to lower demand.

Another strand of arguments starts from a different observation and leads to a more fundamental question of how central banks should conduct their monetary policy.

3. A KEY GLOBAL FACTOR: TREND DECLINE IN REAL INTEREST RATES

One common factor which impinges on monetary policy is not disputed: it is the trend decline of real interest rates over the last 30 to 40 years.¹ Interest rates have decline almost continuously over this period, but so has inflation. What matters for the savers and investors is not the nominal interest rates, but what the return on savings and investment will be after accounting for inflation. The key fact is that since the mid- to late 1980s real (i.e. nominal rates deflated by consumer or other prices) have also declined.

A contribution by Jordà and Taylor (2019), to the conference of the Kansas City Federal Reserve in Jackson Hole this year, summarises very well the evidence on this point. They document real interest rates in major advanced countries since 1955, identifying both a local and global component. Their main result is that the 'equilibrium' rate, usually called r^* , has declined by several percentage points over the last 30-40 years

The key question this trend raises is: how should central banks react to lower global equilibrium rates? The causes of the decline in r^* are not really essential for central banks. It does not really matter for monetary policy whether it is due to demographics, low productivity growth, after-effects of the global financial crisis.

As an aside one should note that the hypothesis that central bank policy might have contributed to the decline in r^* is usually not considered in this literature. Nobody would dispute that, at least over the last years since the global financial crisis, central banks have kept rates low. But r^* is measured as the equilibrium rate under the assumption that this equilibrium is defined as the absence of inflation (or deflation). Given that inflation has been constant and if anything 'too low' over the last decade, the usual estimates of r^* arrive at the result that the current low level of real rates is close to, but still above the equilibrium. For the euro area in particular, this line of reasoning would say today's real rates, which are negative, are still above the equilibrium because inflation remains below the target.

What should the ECB then do? Its policy is guided by the idea that the (real) interest rate is still too high. The natural conclusion is to lower rates, or when policy cannot go even more negative, use asset purchases to lower long term market rates. The basis for this policy is the assumption that prices are sticky, at least in the short run. This means that if the equilibrium real rate ($=r^*$) is above the actual one, the ECB needs to lower its interest rate (or increase asset purchases if the policy rate is already at zero), to avoid a situation in which the actual real interest rate, deflated by today's inflation, is above the global long run one.

A minority view has taken the opposite stance. This, so-called, 'Neo Fisherian' view is based on the generally accepted idea that in the long run r^* is determined by global capital markets. It can be illustrated with the following formal relationship:

$$\text{Real interest rate } (r^*) \equiv \text{nominal interest rate} - \text{inflation}$$

The equilibrium real rate, r^* , is not directly observable. All one can observe at any given point in time is the realized, ex post, real interest, and, the real interest rate that obtains if one deducts inflation expectations from the nominal rates. The key question then becomes whether the negative real rates one can observe today throughout the euro area represent an equilibrium. Central bankers would

¹ See for instance Del Negro et al. (2018) among others.

argue that inflation would increase if the realized real interest rate were below the long run equilibrium. The absence of inflation thus suggests that actual real rates are still above the long run rate, r^* .

However, even if one cannot measure well, this relationship implies that, as long as r^* is constant, an increase in the nominal rate should go hand in hand with higher inflation. This view thus leads to the conclusion that central banks should increase rates (or reduce asset purchases) when r^* goes down. In both cases this, at first sight, counter-intuitive result is obtained because the inflation rate compatible with a certain real rate is higher, the higher the nominal interest rate.

Cochrane (2016), for example, has pointed out that the most popular large economic models, including those used by central banks for policy analysis contain this key assumption that in the long-run the real interest rate cannot be influenced by central bank policy. However, this long-run property of the model is usually neglected in the face of another property of these models, namely that, in the short run, prices are sticky. This implies that, in the short run, during which central banks can determine market rates, real interest rates will decline if the central bank lowers its (usually short-term) policy rate. The short- and long-run properties of these models thus seem to point in opposite directions. Cochrane (2018) provides a general model, which shows the dynamic process through which the short run and long reactions can go into opposite directions.

One important element of the 'Neo Fisherian' view is that its central proposition refers to the long term equilibrium: an increase in long term rates will, in the long run, lead to higher inflation. However, long-term rates can increase only if short-term rates increase permanently as well. A temporary increase in short-term (policy) rates would be deflationary.

For the ECB the distinction between long-term and short-term interest rates is important because this view implies that only an increase in long term rates (or equivalently a permanent increase in short term rates) will help to increase inflation. This view would thus imply that the ECB should not be trying to lower long-term rates via its asset purchase program. Quantitative Easing (QE) might actually be counterproductive!²

This view would be compatible with recent developments in the euro area; namely that long periods of negative policy rates combined with massive asset purchases (which are supposed to lower long term market rates) have not led to higher inflation. According to the 'Neo Fisherian' view, the ECB is thus engaged in a deflationary trap of its own making: each time the ECB makes its policy more expansionary in response to stubbornly low inflation, it actually reinforces the long run deflationary pressures. The main reason why this unstable process does not lead to accelerating deflation might be that the ability of the ECB to lower rates, whether long or short term, is now severely limited.

A key problem with the view that a sustained increase in policy rates will in the long run be accompanied by higher inflation is that one cannot see how it could work in the short run because the short run impact of higher policy rates should depress demand and thus lead to lower inflation. Uribe (2019) provides some evidence that the distinction between short term and sustained long term increases in policy rates is crucial, as he finds that a short term increase in policy rates depress output and inflation whereas sustained increases in policy rates increase output and inflation.

² Sanchez and Kim (2018) arrive at a similar conclusion: "A widely accepted hypothesis is that in the long-run central banks can only determine nominal interest rates. The real rate is set in the market. If the real rate is close to zero it follows that central banks keep inflation low by keeping (nominal) interest rates close to zero." "However, in an environment in which the monetary authority keeps the relevant nominal interest rate very close to zero for a long period of time, this relationship would simply imply that the expected inflation rate is equal to the negative of the real rate. Recall that under the Fisher hypothesis, the real rate is independent of monetary policy (it depends on factors like long-term economic growth). Thus, if the real rate is close to zero, it must be that, under this hypothesis, expected inflation is close to zero as well. The solution to low inflation in this context is to increase the nominal interest rate." (My underlining.)

4. A FRAMEWORK FOR DEALING WITH MODEL UNCERTAINTY

The ECB, like other central banks, thus faces a situation in which it should have at least some doubts about the validity of the approach it has followed so far. This section provides a rough structure to think about the uncertainty central bankers (and economists as well as policy makers in general) have to deal with. Table 1 below shows thus two possible beliefs about how the economy works: One such belief is dubbed ‘Neo Fisher’, using the assumption that (in the long-run) the real interest rate is set by a global capital market (this assumption is actually embodied in many central bank models). The alternative, ‘not Neo Fisher’ belief about world, is dubbed ‘Taylor rule’ because this is the way central bankers act in the short run: they lower rates when inflation is too low. The essence of this view is that lowering rates will increase inflation.

The matrix in the Table 1 shows the ‘model consistent’ reaction of a central bank to low inflation under two different beliefs and the actual outcome one should expect under two scenarios: i) the world works actually the way the central bank thinks, or, ii) the world works differently from the way the central bank believes.

The second column corresponds to reality today: most central bankers believe a world which is not ‘neo-Fisherian, at least not for the time horizon relevant for them.

Table 1: Central bank reaction to low inflation under different beliefs and actual economic mechanisms

		Central banks beliefs	
		Neo Fisher	‘Taylor rule’
How economy works in reality	Neo Fisher	Increase rates => Inflation up, no unemployment, stable equilibrium	Lower rates => Inflation down, no unemployment, unstable process (ending at ZLB?)
	‘Taylor rule’	Increase rates => Inflation down, since unemployment up, Unstable process (ending in depression?)	Lower rates => inflation up (and unemployment down), stable equilibrium

Note: Entries depict the ‘belief consistent’ reaction of a central bank to inflation below target.

Source: Own composition.

In the off-diagonal entries, i.e. when the beliefs of central bankers do not reflect reality, central banks would of course have to deal with ‘cognitive dissonance’.

If the world is ‘Neo Fisherian’, inflation will remain low in the face of permanent ultra-low policy rates. Central banks will then have to argue that the failure of inflation to increase despite their ultra-expansionary stance, is due to some extraneous factor, such as globalization, ageing, or simply some generic global fall in trend inflation.

If the world is not 'Neo Fisherian', unemployment should increase when policy is tightened. In this hypothetical case, central banks might be tempted to argue that the observed increase in unemployment was due to an exogenous negative shock (trade war, etc.).

One way to make this matrix useful for policy is to think about the consequences of different actions and the probabilities of different combinations. The costs of being wrong appear to be asymmetric: if the ECB continues with its policy because it believes in Taylor rule principle (and a functioning Phillips curve) inflation will remain low, but unemployment does not seem to be a problem. However, if the ECB were to switch to a Neo-Fisherian world, it would run the risk of being wrong. Raising rates, with the aim of increasing inflation in the long-run, would entail very high costs if the economy initially reacts negatively, increasing unemployment.

5. CONCLUSIONS

The broader point made in this contribution is that one should not confuse a global phenomenon with a problem which requires coordination. Inflation dynamics are trending down in most advanced economies. Until recently, the preponderant explanation why globalisation should reduce inflation centred on the impact of global competitive pressures on goods and labour markets. But this type of explanation always had difficulties explaining a continuous fall in inflation as opposed to a one time fall in prices or wages. Moreover, the apparent slow-down of global trade over the last years should have implied a reversal of the inflation trend. However, this has not happened as inflation has remained subdued, more subdued than expected by central banks. Globalisation thus does not seem to be a major driver of subdued inflation.

While the global nature of low inflation does not make coordination among central banks more desirable, it still implies that one can learn from other's experience. For example, in Japan inflation has remained very subdued despite record low unemployment and record high employment (making it highly unlikely that there exists some mis-measured slack). Moreover, in Japan, the central bank has bought government bonds worth more than 50% of GDP, much more than the ECB (or the Fed), but interest rates have not moved below those of the euro area.

This persistent weakness of inflation despite globalisation's retreat has underpinned the shift in focus on another global factor, namely real interest rates, which have trended down over almost four decades. The likely causes of this trend decline in real interest rates are longer term trends in demographics and labour markets which are common to advanced economies, rather than external influences impinging on each individual economy. There is no agreement in academic research whether the persistent weakness of inflation, despite very strong expansionary unconventional policies (in Europe and the Japan), means that central banks should radically rethink the basis of their policies. However, as illustrated above, the potential cost of reacting to the uncertainty about how monetary policy works, by a radical change of direction e.g. increasing interest rates, may entail a too high cost.

QUESTIONS FOR MEPS

1. Can additional bond purchases be expected to have a material impact when long-term interest rates are already below zero in many countries?
2. Recent research suggests that below a certain point it become counter-productive to push interest rates down even further. Is the ECB certain that this point has not been reached? What concrete evidence does it have for its point of view?
3. The tiering of the negative rates on deposits at the euro-system represents an implicit subsidy to the banking system. Would it not be simpler to increase the deposit rate slightly to help banks with their profitability?

REFERENCES

- Auer, R., A. Levchenko, P. Sauré. (2017) "[International inflation synchronisation through global value chains](#)," VOX, CEPR Policy Portal, May 2017.
- Beck, R., I. A. Duca, L. Stracca. (2019) "[Medium term treatment and side effects of quantitative easing: international evidence](#)," ECB Working Paper Series No 2229, January 2019.
- Borio, C. and A. Filardo (2007) "[Globalization and Inflation: New Cross-Country Evidence on the Global Determinants of Domestic Inflation](#)," BIS Working Papers No. 227, May 2007.
- Bobeica, E and Sokol, A. (2019) "[Drivers of underlying inflation in the euro area over time: a Phillips curve perspective](#)," ECB Economic Bulletin, Issue 4/2019.
- Cochrane, J. H. (2016) "[Do Higher Interest Rates Raise or Lower Inflation?](#)," SemanticScholar, February 2016. (Unpublished manuscript).
- Cochrane, J. H. (2018) "[Michelson- Morley, Fisher, and Occam: The Radical Implications of Stable Quiet Inflation at the Zero Bound](#)", Chapter in NBER book NBER Macroeconomics Annual 2017, volume 32 (2018).
- Cordemans, N. and J. Wauters. (2018) "[Are inflation and real activity out of sync in the euro area?](#)" NBB Economic Review, June 2018.
- Del Negro, M, D Giannone, M P Giannoni, and A Tambalotti (2018), "Global Trends in Interest Rates," NBER Working Paper No. 25039.
- Farhi, E. and F. Gourio (2019) "[Accounting for Macro-Finance Trends: Market Power, Intangibles, and Risk Premia](#)," Brookings Papers on Economic Activity Fall: 147-250, February 2019.
- Forbes, K. J. (2019) "[Has globalization changed the inflation process?](#)" BIS Working Papers No 791, June 2019.
- Gros, D. (2016) "[Adjustment within the Euro Area: Is it all about competitiveness?](#)" CEPS Special Report No. 127, January 2016.
- Jašová, M., R. Moessner and E. Takáts (2018) "Domestic and global output gaps as inflation drivers: what does the Phillips curve tell?," BIS Working Papers, No 748, 28 September, <https://www.bis.org/publ/work748.pdf>.
- Jordà, Ò. and A.M. Taylor (2019) "[Riders on the Storm](#)," Federal Reserve Bank of Kansas City Economic Policy Symposium "Challenges for Monetary Policy," Jackson Hole, Wyoming, August 2019.
- Jordà, Ò. and F. Nechio (2018) "[Inflation Globally](#)," Federal Reserve Bank of San Francisco Working Paper 2018-15, December 2018.
- Kamber, G. and B. Wong (2018) "[Global Factors and Trend Inflation](#)," BIS Working Papers No 688, January 2018.
- Keynes, J. M. (1937) "[Alternative Theories of the Rate of Interest](#)," Economic Journal, vol. 47, No. 186, pp.241-252, June 1937.
- McCoy, E., M. Salto and V. Žďárek. (2019) "[Do global factors spell the end of the Phillips Curve?](#)" European Commission, Quarterly Report on the Euro Area. Volume 18, No 1, July 2019.

- Grishchenko, O., S. Mouabbi, J-P. Renne. (2017) "[The Joint Dynamics of U.S. and Euro-area Inflation Rates: Expectations and Time-varying Uncertainty](#)," Banque de France Working Paper #622, February 2017.
- Sánchez, J. M. and Hee Sung Kim. (2018) "[Why Is Inflation So Low?](#)" Regional Economist, First Quarter 2018, February 2018.
- Summers, L. H. and Stansbury, A. (2019) "[Whither Central Banking?](#)" Project Syndicate, August 2019.
- Uribe, M. (2019) "The Neo-Fisher Effect: Econometric Evidence from Empirical and Optimizing Models", manuscript, <http://www.columbia.edu/~mu2166/neoFisher/fisher.pdf>.
- Voinea, L. (2018) "[Explaining the post-crisis Philips curve: Cumulated wage gap matters for inflation](#)", CEPS Working Document No 2018/05, June 2018.

The ECB will not be able to achieve its inflation target over the foreseeable future. Further expansionary measures will have at most a modest impact on financial market conditions and even less on overall demand. Moreover, the impact of any demand stimulus on inflation is highly uncertain. The reasons for low inflation persistence despite tight labour markets almost everywhere are not fully understood. It is a global phenomenon, but not necessarily due to globalisation. One global factor seems beyond dispute, namely a fall in global equilibrium real interests. However, different views of how the economy operates lead to very different views how central banks should react to this phenomenon.

There is little evidence that cooperation between central banks would have a significant impact on their (limited) ability to achieve their inflation targets.
