



## Global inflation and emerging markets

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DRAFT, 6 April 2018

### Two-page abstract

Recent research suggests that inflation is largely a global phenomenon. Borio and Filardo (2007) find that global factors increasingly exerted an influence on domestic inflation rates, especially since the 1990s. Ciccarelli and Mojon (2010) show that a common global factor can explain 70% of the variation of inflation rates in industrialized countries. Moreover, they find that, in the face of shocks, a “robust error-correction mechanism” brings inflation rates back to some long-term global level.

If inflation is a global phenomenon, what does that imply for monetary policy? The answer would require resolving an identification problem. What exactly is the common global factor to which domestic inflation rates tend to revert? To what extent is the factor exogenous? To what extent does it matter to emerging markets? Is it the average worldwide inflation rate resulting from global slack, as emphasized by Borio and Filardo? Or is it just the outcome of the way central banks have come to think about monetary policy? Bean et al (2010) and Clarida (2012), for example, have argued that since the 1990s monetary policy in major economies around the world has been conducted according to the “Jackson Hole consensus.”<sup>1</sup>

Much of what we know about global inflation is based only on the experience of advanced economies, and the part of this experience that has been analysed is largely one that ends before the great financial crisis (GFC) of 2007-2009. Borio and Filardo, for example, look at inflation in 16 advanced economies, while Ciccarelli and Mojon examine inflation in 22 OECD countries. To shed light on the issue of identification, it may help to consider a more varied sample of countries and to compare the pre-crisis experience with the post-crisis one.

This more varied sample and this comparison between the pre-crisis and post-crisis periods are what this paper provides. Following Ciccarelli and Mojon, we use principal components to extract common factors, or what Stock and Watson (2002) call diffusion indexes, using quarterly inflation series of 38 countries, including 16 emerging markets. We also compare global inflation before the GFC to global inflation after the GFC. Finally, we explore the

<sup>1</sup> This consensus included the following elements: (a) an assumption of efficient financial markets; (b) operational independence of the central bank; and (c) the setting of a path for a short-term interest rate as the main policy decision.

possible importance of a second common global factor. We then propose to identify these factors by analysing how the sensitivities to them, as measured by the factor loadings, vary across countries.

Our preliminary results are intriguing and confirm the importance of including emerging markets in our sample of countries and of looking also at what happened after the GFC:

- The first common factor explains 66% of the variation of inflation rates in our sample of 38 countries in the period before the GFC. In the period after the GFC, the common factor explains only 53% of the variation of inflation rates.
- The second common factor explains 13% of the variation of inflation rates in the period before the GFC and 18% in the period afterwards.
- As shown in Graph 1, average inflation in OECD countries tends to track the first factor more closely than does average inflation in non-OECD countries.
- As shown in the table below, average loadings on the first factor reveal a difference between advanced and emerging economies, with inflation in the advanced economies showing more sensitivity to the factor. Indeed, as shown in Graph 2, this difference is quite systematic. All but three emerging markets have loadings smaller than any of the advanced economies.
- Average loadings on the second factor show an even larger gap, with inflation in advanced economies loading negatively and inflation in emerging markets loading positively. Indeed, as shown in Graph 4, all but three advanced economies show negative loadings.
- As also shown in the table, these patterns change from the period before the GFC to the period afterwards. The gap in the average loadings on the first factor widens even more. In contrast, the gap in the average loadings on the second factor narrows, with the average loading on inflation in the advanced economies turning positive. The change in patterns is also evident in Graphs 3 and 5, which show somewhat less of a demarcation between advanced economies and emerging markets.

We propose to identify these factors by analysing what explains the cross-sectional variation of their loadings. For explanatory variables, we will consider various country-specific fundamentals. Consistent with Bianchi and Civelli (2015), Auer et al (2017) and Altansukh et al (2017), we will include among these variables the following: (a) terms of trade, (b) financial openness, (c) exchange rate regime, (d) inflation targeting; and (e) participation in global value chains. From an understanding of what fundamentals condition the sensitivities, we will infer what is likely to be behind each of the two common global factors.

## References

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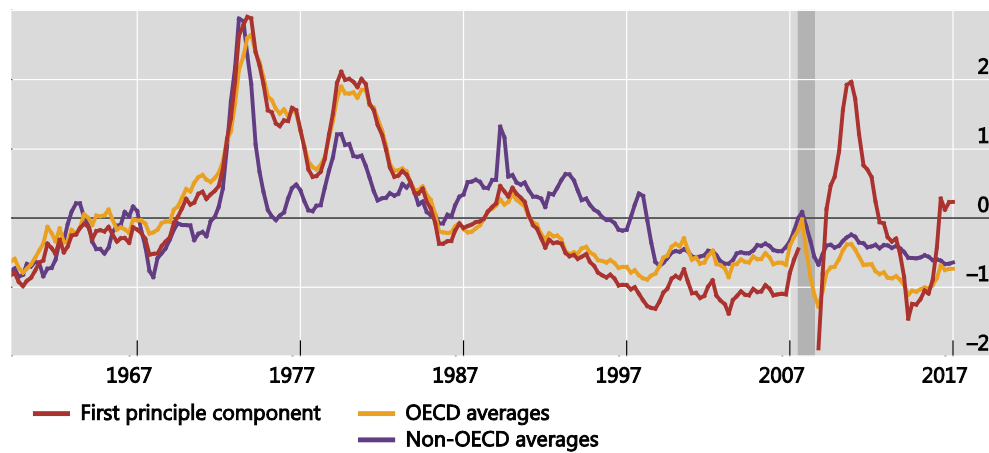
Table: Average factor loadings on two common global factors

	Pre-crisis (1960-2008)		Post crisis (2009-2017)	
	First factor	Second factor	First factor	Second factor
22 advanced economies	0.187	-0.060	0.168	0.021
16 emerging markets	0.098	0.147	0.055	0.088
Difference (AE minus EM)	0.089	-0.207	0.113	-0.067

## Global inflation

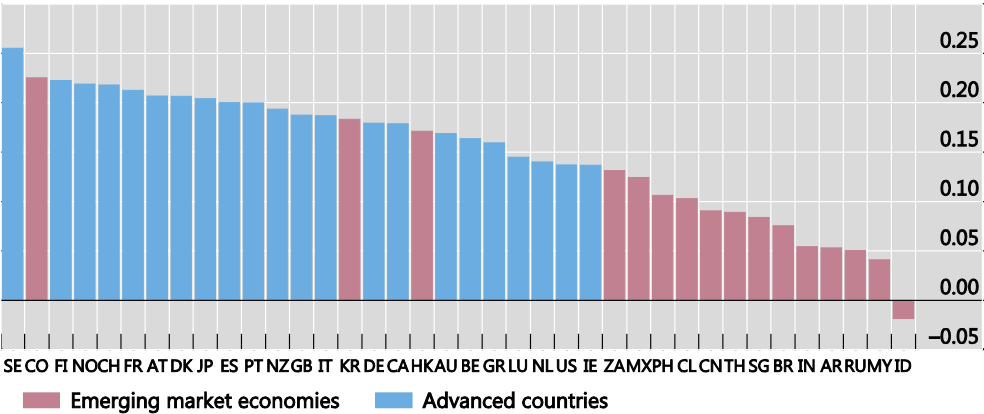
The first factor (principal component) and averages of OECD and non-OECD inflation

Graph 1



Pre-crisis loadings on 1<sup>st</sup> factor

Graph 2



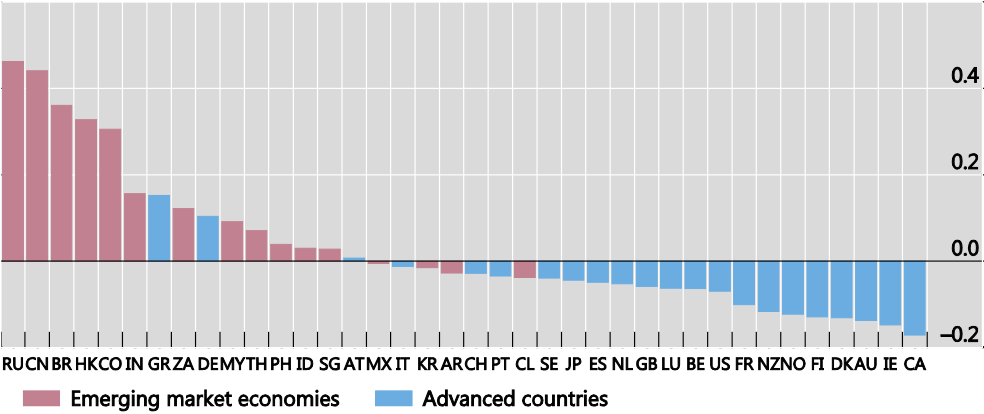
Post-crisis loadings on 1<sup>st</sup> factor

Graph 3



Pre-crisis loadings on 2<sup>nd</sup> factor

Graph 4



Post-crisis loadings on 2<sup>nd</sup> factor

Graph 5

