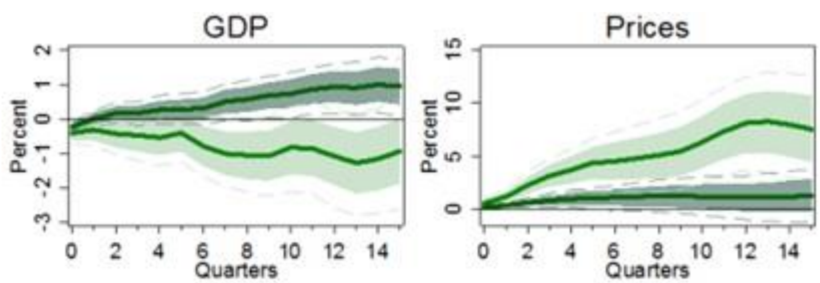
Can inflation targeting help to absorb shocks from natural disasters?

By Christoph Grosse Steffen (with Marcel Fratzscher and Malte Rieth)

Countries that adopt a strict inflation target experience stronger growth and lower inflation after large natural disaster shocks. Inflation targeting can hence serve as an important shock absorber thanks mainly to a different policy mix. The results indicate that relaxing the inflation targeting regime might generate potential costs, since the stabilisation of future recessions might become more difficult.

Figure 1. Benefits of inflation targeting (=dark green) in the presence of large disasters



Note. Effects of a natural disaster that leads to reported insurance claims of 1% of GDP at quarter t=0. Inflation targeting countries=dark grey, non –inflation targeting countries= light green. Source: Fratzscher, Grosse Steffen and Rieth (2017)

What are the benefits of conducting monetary policy under an inflation targeting regime? In theory, higher commitment for policymakers due to the presence and communication of an explicit numerical inflation target makes monetary policy more effective. However, finding benefits of adopting an inflation targeting regime in the data is a complicated task. One reason is that inflation targeting became popular after 1990, which was a period of low macroeconomic volatility across many advanced economies that became known as the Great Moderation. The 'good luck' due to the absence of larger shocks makes it harder to detect 'good policies' when it comes to average outcomes like the reduction in inflation rates (Ball and Sheridan 2003).

We use large natural disaster shocks and show that economic outcomes differ across countries in the immediate aftermath of such shocks depending on whether or not they have an inflation targeting regime (Fratzscher, Grosse Steffen and Rieth 2017). The approach considers the unpredictability of natural disasters in conjunction with their significant economic consequences in order to isolate the effects of inflation targeting in deep recessions.

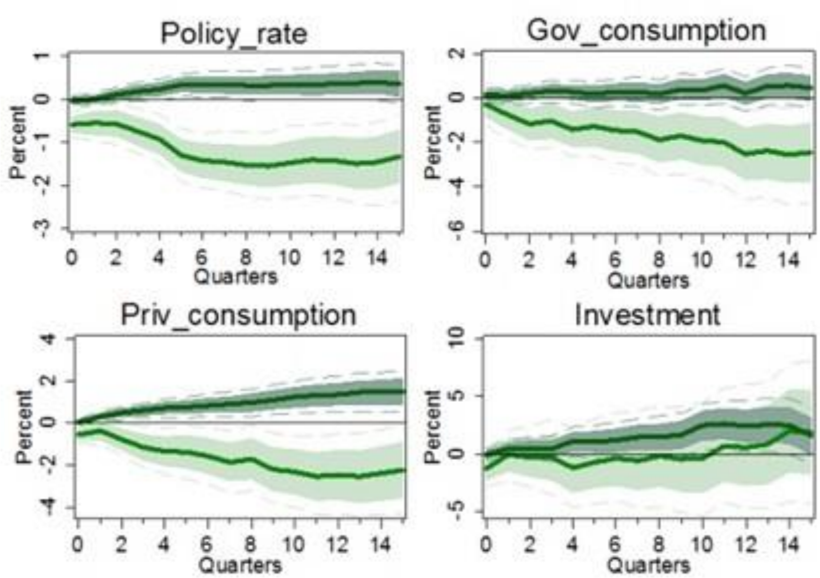
Results based on a sample of 76 countries over the period 1970-2015 suggest that there are significant gains from adopting an inflation target in terms of macroeconomic stabilisation. During the four years after a natural disaster with reported insurance claims of 1% of GDP, output growth is on average 0.16 percentage point higher and inflation rates 0.44 percentage point lower per quarter in inflation targeting countries. Although our focus is not on the Great Recession of 2009, these findings support the view that inflation targeting might have helped to cushion the adverse effects of the Great Recession (Miles, Panizza and Reis 2017).

A different monetary-fiscal policy mix lifts output growth and lowers inflation

A natural disaster initially leads to a contraction in output and higher inflation in both inflation targeting and non-targeting countries. However, in inflation targeting countries, the recovery is faster and more pronounced (see Figure 1). This is due to a recovery in private consumption and, to a lesser extent, investment activity (see Figure 2). In line with a higher inflation rate, targeters respond with some lag to the shock by gradually tightening monetary policy during the recovery period.

In contrast, non-targeting countries lower the policy rate immediately, which translates into higher inflation rates with some lag, albeit not resulting in output growth. One reason is that the response of government spending is more pro-cyclical in non-targeting countries, weighing on GDP growth. We interpret this result in light of complementarities between monetary and fiscal policy. The presence of inflation targeting enforces fiscal discipline in normal times, thereby fostering more counter-cyclical government spending in the wake of large disasters.

Figure 2. Inflation targeters (=dark green) react with a different policy mix to large disasters



Note. Effects of a natural disaster that leads to reported insurance claims of 1% of GDP at quarter t=0. Inflation targeting countries=dark grey, non –inflation targeting countries= light green. Source: Fratzscher, Grosse Steffen and Rieth (2017).

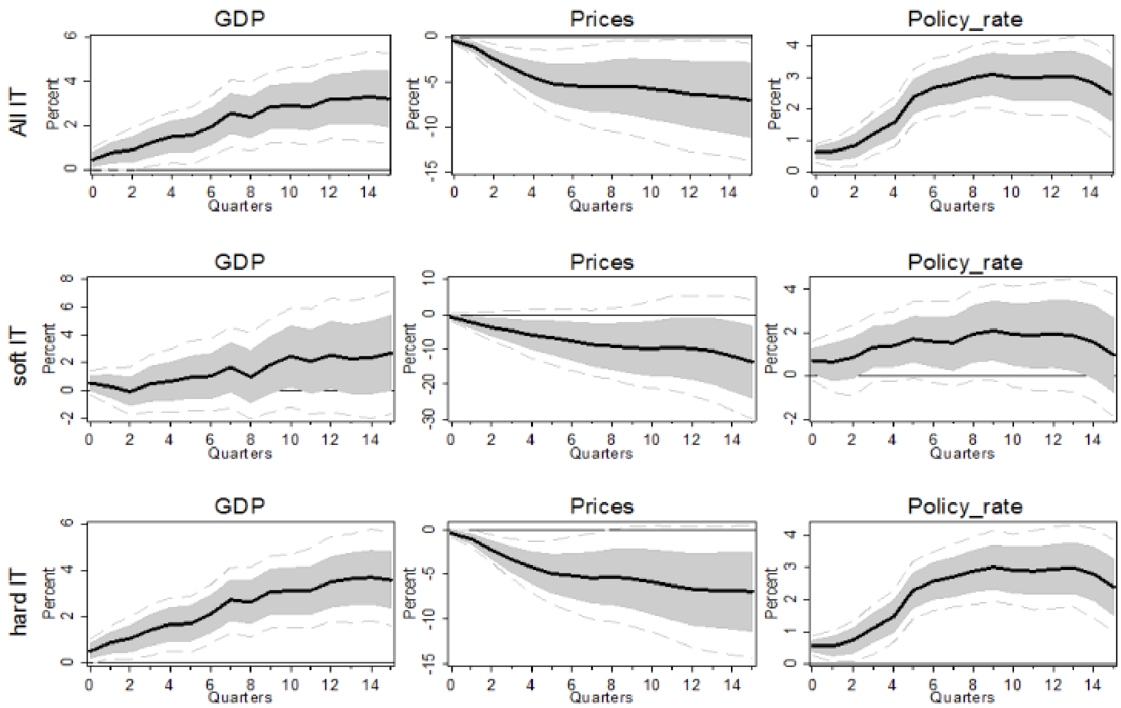
Macroeconomic volatility is lower in response to large shocks under inflation targeting

We also find that macroeconomic volatility over the four years following the occurrence of a natural disaster is significantly higher in non-targeting countries. We interpret this finding as an additional successful stabilisation outcome of inflation targeting. In an extensive sensitivity analysis, we find that our baseline results for the mean and volatility of variables are robust when controlling for many alternative shock absorbers, such as a flexible exchange rate regime. At the same time, our sensitivity analysis shows that the results for the mean effect are partly due to the fact that inflation targeting countries have on average better institutions. This is in line with research that finds that fiscal policy is less pro-cyclical when the quality of institutions is higher (Frankel, Vegh and Vuletin, 2011).

Too much flexibility might come at the cost of a more difficult stabilisation

Is it sufficient to have a *de jure* inflation targeting regime in order to benefit from these stabilisation effects? To answer this question, the group of inflation targeting countries is split into two sub-samples according to an *ex post* measure of compliance with the target. Countries are labelled as 'hard targeters' if they have a better track record in meeting their inflation objective. The results are striking: it is the sub-sample of 'hard targeters' that performs well in terms of GDP/inflation stabilisation after a natural disaster shock, while the economic response of 'soft targeters' to natural disaster shocks cannot be distinguished from that of non-targeters (see Figure 3). This suggests that when it comes to a recalibration of inflation targeting regimes, as debated in policy circles and among academics (Baldwin and Reichlin, 2013), too much flexibility might come at the cost of a more difficult stabilisation of future recessions.

Figure 3. 'Hard targeters' benefit more from an inflation target when hit by a disaster



Note: Cumulative–differential effects of the disaster shock variable between inflation targeting and non-targeting countries. Source: Fratzscher, Grosse Steffen and Rieth (2017)