

Countercyclical policies in emerging markets¹

Emerging market economies (EMEs) have historically faced challenges in implementing countercyclical policies. However, the policy environment has changed. This paper finds evidence that EMEs were able to conduct countercyclical monetary and fiscal policies over the past decade. Indeed, the EMEs that have leaned more heavily against the business cycle have generally used both monetary and fiscal tools to do so.

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Can emerging market economies (EMEs) successfully pursue countercyclical monetary and fiscal policies? In the past, EMEs often found it difficult to do so. This was particularly the case for central banks. Monetary policy was frequently subordinated to the requirements of an expansionary fiscal policy, a condition described by Sargent and Wallace (1981) as fiscal dominance. And fiscal expansion during economic upturns left little scope for countercyclical policies during downturns. However, the era of fiscal dominance appears to have ended in most EMEs.

This study finds that many EMEs have implemented policies that are almost as countercyclical as those of many advanced economies, even if the individual outcomes have varied. Furthermore, the results indicate that the EMEs that leaned more heavily against the business cycle generally relied on both monetary and fiscal policy to do so.

That EMEs are able to pursue countercyclical monetary and fiscal policies is a welcome development. Such policies have certainly benefited EMEs, by reducing their output volatility, and may quite possibly have helped to stabilise the global economy. However, these findings should not be allowed to induce a sense of complacency. A policy that is countercyclical is not always sustainable, as recent experience in the euro area shows. It remains crucial to closely monitor fiscal sustainability and financial imbalances.

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This special feature is organised as follows. The first section outlines how the countercyclicality of monetary and fiscal policies can be measured. The second introduces the empirical estimation strategy and the third presents the results. The fourth highlights some caveats and the final one concludes.

Measuring countercyclicality

Monetary and fiscal policies can stabilise the business cycle by reining in economic activity during booms and bolstering it during downturns. For monetary policy, this means increasing the real policy rate during booms and lowering it in recessions; for fiscal policy, this means adjusting expenditures and taxes beyond the range that automatic stabilisers would achieve, with the aim of cutting government deficits during booms and increasing them in recessions.

One way to measure how far monetary policy is countercyclical is to estimate the correlation between the business cycle and the real policy interest rate, controlling for other relevant factors. The Taylor (1993) rule offers a straightforward way to do so. The policy rate is modelled as responding to several variables:

$$i = \pi + \alpha(y - y^*) + \beta(\pi - \pi^*) + r^* \quad (1)$$

where i is the nominal policy interest rate, π is the rate of inflation, π^* is the (explicit or implicit) inflation target, $y - y^*$ is the output gap, r^* is the “equilibrium” real interest rate, and α and β are parameters that represent the degree to which a central bank responds to output and inflation developments, respectively. The intuition behind the Taylor rule is straightforward: a monetary authority should adjust the policy rate one-for-one for changes in inflation (π) and should respond positively to business cycle fluctuations ($y - y^*$) and the deviation of inflation from the inflation target ($\pi - \pi^*$). In particular, a larger α captures a more countercyclical monetary policy, while a negative value would imply a procyclical monetary policy.²

For fiscal policy, Taylor (2000) provides an analogous approach. The fiscal balance, measured as a percentage of GDP, is split into structural and cyclical factors:

$$b = b^* - \gamma(y - y^*) \quad (2)$$

where b denotes the general government budget balance as a percentage of GDP, b^* the cyclically adjusted deficit, $y - y^*$ the output gap, and γ the degree of sensitivity of budget balance to the output gap. The coefficient γ can be used to measure for the degree of countercyclicality; the larger γ becomes, the more countercyclical is fiscal policy. Similarly, as in the case of monetary policy, a negative γ would imply procyclical fiscal policies.

The Taylor rule captures the countercyclicality of monetary policy ...

... and a similar approach captures that of fiscal policy

² Furthermore, a larger β might also signal that monetary policy is more countercyclical in responding to output deviations to the extent that these output deviations also appear in the inflation rate (via, for instance, the relationships captured in the Phillips curve).

The estimation takes policy preferences for smoothing into account

Estimation

The degree to which monetary and fiscal policies are countercyclical is estimated over the 2000–11 period for a subset of EMEs that have adopted inflation targeting. To better match the data in the EMEs under investigation, equation (1) is extended to include an exchange rate term to reflect EME concerns about exchange rates in monetary policy-setting. In addition, an autoregressive term is added representing the preference of policymakers for smoothing interest rates. The two modifications yield the following empirical specification:

$$i = \phi i_{-1} + (1 - \phi) [\pi^* + \alpha(y - y^*) + \beta(\pi - \pi^*) + \delta(e - e_{-1}) + r^*] + \varepsilon \quad (3)$$

where, in addition to the variables defined in equation (1), the subscript (-1) denotes one-quarter lagged variables, ϕ is an autoregressive parameter reflecting the preference of a monetary authority to smooth policy rate adjustments over time, e is the bilateral nominal exchange rate vis-à-vis the US dollar, δ is the parameter reflecting the monetary policy response to exchange rate movements, and ε is the error term. The time and country subscripts are omitted for ease of representation.³ Notice that α remains the parameter of interest, because it captures the long-run countercyclicity of monetary policy.

In an analogous way, equation (2) is also modified to incorporate policy preferences for smoothing:

$$b - b^* = \psi(b - b^*)_{-1} - (1 - \psi)\gamma(y - y^*) + \xi \quad (4)$$

where, in addition to the variables defined in equation (2), ψ represents the policy-smoothing preference for fiscal policy, and ξ is the error term. The time and country subscripts are again omitted for ease of representation.⁴ As in equation (3), γ remains the parameter of our interest, because it captures the long-run countercyclicity of fiscal policy.

For each inflation-targeting EME, equations (3) and (4) are estimated jointly using the method of seemingly unrelated regression for the 2000–11 period. In order to provide some context, similar estimates – without the exchange rate term in equation (3) – are also obtained for advanced economies.⁵ Table A1 in the Appendix shows the estimation details.

³ Potential output (y^*) is estimated on quarterly output data (y) between Q1 1999 and IMF projections up to Q4 2013 using the Hodrick-Prescott filter.

⁴ Quarterly budget balances are seasonally adjusted and, where not available, are extrapolated from yearly figures. The structural budget balance (b^*) is estimated on quarterly budget balance data between Q1 1999 and IMF projections up to Q4 2013 using the Hodrick-Prescott filter on quarterly budget balances (b). This proposed b^* is used because it is available for all countries allowing a consistent methodology. This choice does not seem to affect the results: using instead the OECD estimates, where available, does not materially affect the γ estimates.

⁵ The exchange rate term is not used for advanced economies, because exchange rate concerns are less relevant for policymakers there. Importantly, this estimation choice does not materially affect the estimates of α and thus the conclusions of this special feature.

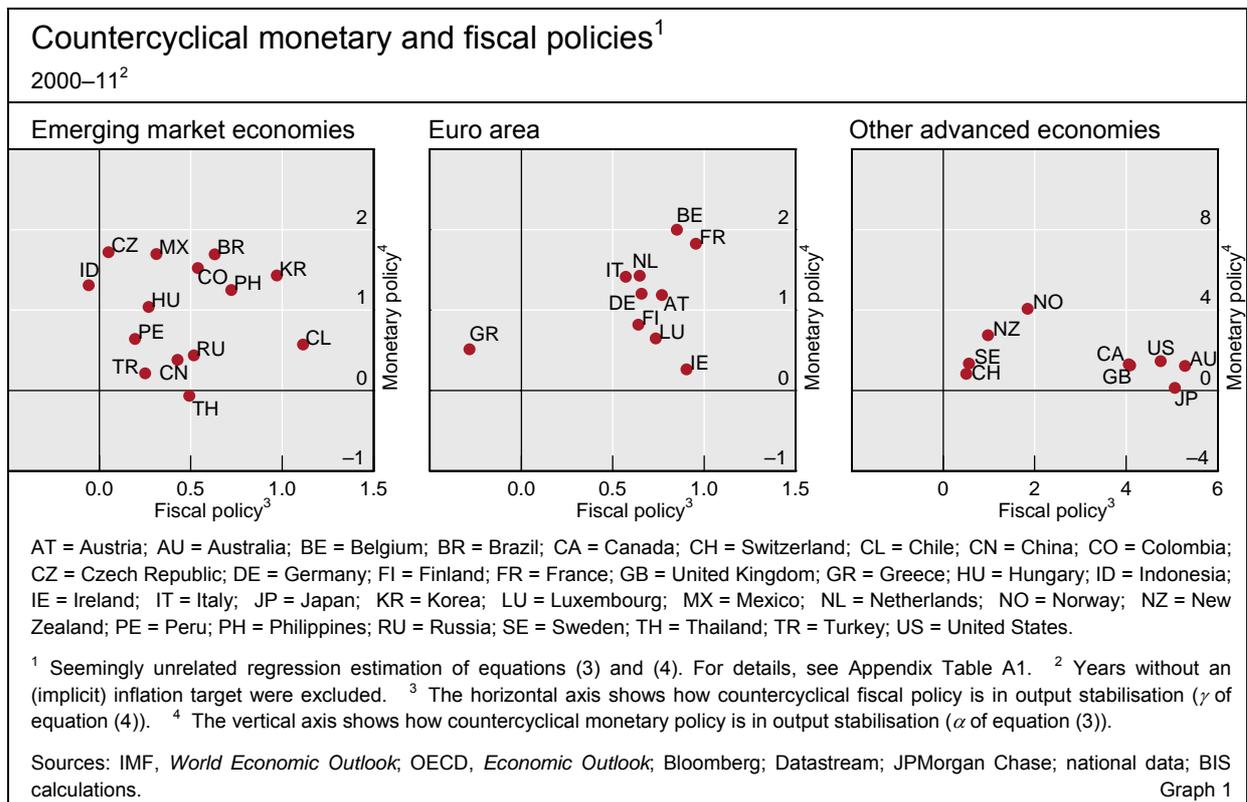
Results

Graph 1 presents the point estimates of α and γ and offers a cross-country perspective on the countercyclical characteristics of monetary and fiscal policies during the 2000–11 period. The vertical axis measures α , the degree of countercyclicity for monetary policy, while the horizontal axis measures γ , the degree of countercyclicity for fiscal policy. Consequently, policies which fall into the first quadrant ($\alpha > 0, \gamma > 0$) are countercyclical and policies which fall into the third quadrant ($\alpha < 0, \gamma < 0$) are procyclical. Policies in the second ($\alpha < 0, \gamma > 0$) and fourth ($\alpha > 0, \gamma < 0$) quadrant are ambiguous, and their cyclicity depends on the relative strength of monetary and fiscal policies.

The results show that most EMEs were able to pursue countercyclical policies during the decade, as the dots representing individual economies are in the first quadrant or on its border. This impression is confirmed by statistical analysis. The last column in Table A1 in the Appendix shows the probability that both monetary and fiscal policies were countercyclical (ie $\alpha > 0$ and $\gamma > 0$). The probabilities are close to unity for around half of the EMEs in the sample, and are below half only in two cases. The evidence suggests that EMEs as a group were able to pursue countercyclical monetary and fiscal policies.

Naturally, the policy mix varies considerably. While most EMEs used both monetary and fiscal policy to lean against the business cycle, some relied more heavily on one policy. For example, Thailand and Turkey relied heavily on fiscal policy while the Czech Republic and Indonesia looked more to monetary policy. The degree of countercyclicity also varied markedly from country to country. For instance, Chile pursued the most countercyclical fiscal policy among EMEs. This may reflect policy preferences for output stabilisation (as

EMEs pursued countercyclical monetary and fiscal policies ...



laid down by Chile's fiscal responsibility law) and also the need to stabilise output in the face of volatile copper prices. Yet fiscal policy is not necessarily dictated by commodity prices: Russia pursued a less countercyclical fiscal policy despite its exposure to oil prices. It seems that policy preferences as well as economic and institutional frameworks have all shaped the policy mix adopted by EMEs over the past decade.

... as did euro area countries ...

To put the EME results into perspective, the centre and the right-hand panels show the results for advanced economies. The centre panel confirms that policies were also countercyclical in the euro area. Not only did the common monetary policy turn out to be countercyclical for all countries for which estimates were possible, but fiscal policy was also countercyclical in all countries except Greece. Interestingly, the estimates show that, on average, countercyclicity in the euro area was similar to that of the EMEs, although slightly stronger. Unfortunately, the further interpretation of the euro area results is not straightforward, as euro area countries are not independent in their monetary policy.

... and other advanced economies

Policies among other advanced economies were so much more countercyclical that the scales needed to be recalibrated in the right-hand panel. In particular, Japan and some English-speaking economies (Australia, Canada, the United Kingdom and the United States) stand out for their markedly countercyclical fiscal policies. For most of these countries, the phenomenon seems to be explained by the huge scale of the fiscal packages adopted after the Lehman failure. In any case, policy, especially fiscal policy, seems to be substantially more countercyclical in most of these economies than in EMEs.

In sum, both monetary and fiscal policy were countercyclical in most EMEs over the past decade. Although the estimates vary from country to country, the degree of countercyclicity compares with that in many advanced economies.

Some caveats

As one EME can be very different from another, there are concerns whether the results can reflect the full complexity of policy-setting. For instance, the use of non-interest rate monetary policy measures (such as reserve requirements or quantitative measures) might have added noise to the estimates.

More concretely, there are concerns that the estimates might under- or overestimate countercyclicity. On the one hand, the reliance of these estimates on the 2000–11 average might have caused countercyclicity to be underestimated. Evidence from central banks suggests that policies became steadily more countercyclical in a number of EMEs over the past decade. Hence, past averages might show less countercyclicity than current policies.

On the other hand, very low advanced economy interest rates during the global financial crisis might have allowed EME central banks to cut their policy rates more sharply than they could have done otherwise. Thus, the estimates might overstate the degree to which EME monetary policy is countercyclical in the long run. Furthermore, while low advanced economy interest rates helped

countercyclical easing in the current downturn, their prolongation would complicate countercyclical monetary tightening in the future.

Conclusion

Based on data from the past decade, this special feature finds that fiscal and monetary policies have been broadly countercyclical in EMEs that target inflation. Furthermore, the EMEs that leaned more heavily against the business cycle generally relied on both monetary and fiscal policy to do so. In fact, the degree of countercyclicality is only slightly below that seen in most euro area countries, suggesting that EME policy frameworks have matured substantially – although it must be noted that EMEs vary considerably in their policy preferences, economic issues and institutional frameworks.

These countercyclical policies lay the groundwork for EMEs to stabilise their output and thereby contribute to the stability of the global economy. This represents a major advance and a welcome departure from the era of fiscal dominance. That said, this is no time for complacency. Countercyclicality is a necessary but not a sufficient condition for sound macroeconomic policy. The example of some euro area countries – which pursued countercyclical policies over the past decade yet are nonetheless facing a crisis today – underlines the importance of continuously monitoring financial imbalances and the sustainability of fiscal policies.

Finally, there is ample space for future research on the countercyclicality of EME economic policies. For example, it would be useful to examine the effectiveness of non-interest rate measures in monetary policy and also to make an explicit assessment of sustainability in fiscal policy. This special feature hopes to pave the way for such research – and, more generally, for better understanding of economic policies in EMEs.

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Appendix

Estimates						
Emerging economies	α	γ	standard error (α)	standard error (γ)	covariance (α, γ)	probability ($\gamma > 0, \alpha > 0$)
Brazil	1.69	0.63	0.96	0.19	-0.01	0.96
Chile	0.57	1.11	0.20	0.20	0.01	1.00
Colombia	1.52	0.54	0.46	0.16	0.02	1.00
Mexico	1.70	0.31	1.00	0.04	0.00	0.95
Peru	0.64	0.20	0.40	0.32	0.03	0.70
Indonesia	1.31	-0.06	1.69	0.43	0.12	0.37
Korea	1.43	0.97	0.36	0.30	0.00	1.00
Philippines	1.25	0.72	1.37	0.43	0.13	0.79
Thailand	-0.06	0.49	0.12	0.31	0.00	0.28
Czech Republic	1.72	0.05	1.15	0.34	0.06	0.53
Hungary	1.04	0.27	1.21	0.77	0.07	0.52
Turkey	0.21	0.25	0.68	0.18	-0.01	0.57
China	0.38	0.43	0.11	0.22	0.00	0.97
Russia	0.44	0.52	0.28	0.29	0.01	0.91
Advanced economies	α	γ	standard error (α)	standard error (γ)	covariance (α, γ)	probability ($\gamma > 0, \alpha > 0$)
Australia	1.22	5.29	0.24	1.44	0.12	1.00
Canada	1.30	4.06	0.35	0.54	0.05	1.00
United Kingdom	1.24	4.09	0.21	0.74	0.04	1.00
Norway	4.06	1.85	3.03	0.59	0.19	0.91
New Zealand	2.75	0.98	0.68	0.44	0.07	0.99
Sweden	1.34	0.56	0.52	0.16	0.00	1.00
Austria	1.19	0.77	0.25	0.19	0.01	1.00
Belgium	2.00	0.85	0.32	0.22	0.01	1.00
Germany	1.20	0.66	0.33	0.15	0.01	1.00
Finland	0.82	0.64	0.20	0.06	0.01	1.00
France	1.82	0.95	0.36	0.11	0.01	1.00
Greece	0.51	-0.28	0.37	0.33	0.03	0.18
Ireland	0.26	0.90	0.07	0.84	-0.01	0.86
Italy	1.41	0.57	0.38	0.10	0.01	1.00
Luxembourg	0.65	0.74	0.17	0.19	0.01	1.00
Netherlands	1.43	0.65	0.81	0.27	0.05	0.95
Switzerland	0.82	0.51	0.15	0.06	0.00	1.00
Japan	0.13	5.07	0.05	0.87	0.00	1.00
United States	1.46	4.75	0.50	0.50	0.07	1.00
<p>Seemingly unrelated regression estimation of equations (3) and (4) (without exchange rate adjustment for advanced economies). Estimates excluded where the null hypothesis that $\phi < 1$ or $\psi < 1$ could not be rejected. Years without (implicit) inflation target were excluded; for China, CPI inflation target set by the Central Economic Working Conference; for euro area countries, euro area inflation target; for the United States, 2%. Probability is calculated assuming normality of distribution.</p> <p>Sources: IMF, <i>World Economic Outlook</i>; OECD, <i>Economic Outlook</i>; Bloomberg; Datastream; JPMorgan Chase; national data; BIS calculations.</p>						