Rethinking the macroeconomic framework in a supply-driven world

All the global shocks the world has experienced over the past six years have one common feature and it is the same denominator shared by the four megatrends that will shape the global economy in the future: they are all issues related to the aggregate supply side of the economy. For a world that, in previous decades, essentially moved to the rhythm of the demand side, this has important implications. The way these shocks have been dealt with so far raises doubts about the sustainability of some economic policies over the medium term. What other measures or strategies should be considered? We outline them here.

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What do the Covid pandemic, the war in Ukraine, trade tensions over tariffs and the conflict in the Middle East have in common? The same thing as several global megatrends, such as geofragmentation, demographic change, climate change and new technologies led by artificial intelligence (AI). They are all shocks or trends that initially emerge on the aggregate supply side of the economy.

For a world that has historically been affected mainly by aggregate demand, this has profound implications for how global phenomena are thought about and understood. The debate is not only theoretical; it could also have consequences for the global economy and for economic and industrial policies in the years ahead.

For economists or economic analysts who grew up studying textbooks whose models were largely developed under the opposite premise — that aggregate demand is the main source of economic disruptions, essentially inspired by the Keynesian school — this entails a radical shift in the way we will think about and understand the world ahead. Over recent years, the global economy seems to have moved from a demand-driven regime to a supply-driven one.

Recent crises have shifted the global economy from a demand-driven environment to one shaped by supply-side shocks, including pandemics, geopolitical conflicts, trade tensions and technological change

An "uncomfortable" environment

Strictly speaking, an environment dominated by supply shocks is somewhat "uncomfortable" for everyone. For economists, because, as noted, it requires moving beyond traditional models and developing a better understanding of certain patterns usually associated with other disciplines, such as engineering, that are more closely linked to global value chains, production processes and technological change. And for policymakers, because such an environment is often associated with phenomena such as stagflation — economic slowdown alongside accelerating inflation — a particularly challenging situation for both governments and central banks. In most cases, the "definitive solution" lies beyond what can be done in the

short term (even beyond the time horizon of political cycles) using the usual economic policy tools, apart from trying to mitigate temporary effects and "buy time" while the source of the disruption, such as a military or trade conflict, slowly dissipates.

Negative supply shocks create stagflation, combining weaker growth and higher inflation, while making traditional fiscal and monetary policies less effective

The history of the contemporary global economy, strongly influenced by Keynesianism since the middle of the last century, has documented and identified demand disturbances as traditional or typical drivers of inflation — for example, through empirical tools such as the Phillips curve, which links the level of inflation to unemployment.

Something called "stagflation"

It was not until just over half a century ago, in the mid-1970s, that the so-called "oil price crisis" pushed the debate on aggregate supply disturbances and the term "stagflation" to the fore. If the initial shock affects aggregate supply, the situation becomes rather more complicated. A negative supply shock produces a stagflationary effect: price increases alongside economic slowdown or recession. This is the worst possible scenario or, at the very least, the one no government would want to face. But no fiscal or monetary policy alone can solve both problems simultaneously — accelerating inflation and slowing economic activity — at least not without worsening the other problem in the meantime. The solution to a negative supply shock requires some recovery in supply itself. For example, we have seen this with the easing of bottlenecks and global trade chains after the pandemic and the invasion of Ukraine, which paved the way for the subsequent fall in global inflation.

As mentioned above, the main negative supply shocks in recent years have been the Covid pandemic (2020), the war in Ukraine (2022), the trade tariff war (2025) and, more recently, tensions in the Strait of Hormuz (2026). But there are other medium- and long-term trends that will bring about positive, probably more gradual supply shocks, such as the spread of new technologies led by AI. Over the medium and long term, these trends are projected to bring faster growth alongside slowing inflation. Demographic changes — population ageing, migration and so on — are also essentially supply-side movements, as might be the disruptions climate change could create. It is worth clarifying here that when we speak of supply shocks, we are not ignoring the fact that demand also moves during this process; rather, the initial impact, the trigger, comes from the aggregate supply side of the economy.

Policy responses have cushioned economic activity but left the world with higher public debt and larger central bank balance sheets, reducing room to tackle future shocks

Empirical data support

Do the empirical data support the view that the pandemic, the war in Ukraine and the recent trade tensions have been supply shocks? The answer is yes, with some qualifications. On average, one year after each of these events global gross domestic product (GDP) slowed down by 1.7 percentage points (pp), while inflation accelerated by 0.8 pp. All these events behaved as expected: activity slowed and inflation picked up pace. The only exception is the Covid pandemic, when prices

were still falling a year later. By two years later, however, prices had accelerated, driven by the bottlenecks generated and the incipient recovery, and inflation had already jumped by 2.4 pp to 5.6%[1].

As noted, the latest major global shocks have been supply shocks. Indeed, even demand-side imbalances seem somewhat old-fashioned these days. With the improvement in the calibration and management of monetary and fiscal policy in recent decades through independent central banks and sophisticated monitoring models, not to mention stricter budgetary controls, the possibility of persistent demand imbalances — the gap between actual and potential output, or the output gap, widening systematically over time — seems lower than in previous decades. In this context, the initial sources of imbalances have shifted to supply, where, as we shall see, traditional fiscal and monetary policies operate in a more uncertain way.

In a macroeconomic environment dominated by supply-side shocks, inflation spikes tend to occur more frequently. At the same time, monetary policy becomes less effective in containing them

So how has the world dealt with negative supply shocks so far? In general, through expansionary demand-side fiscal policies, which sought to minimise the short-term contractionary impact on activity. Evidence of this is that, compared with 2020 — before the pandemic, wars, trade tensions and so on — the level of global public debt was 82% and for OECD economies it was 97%. Now it is 96% and 105%, respectively[2].

Meanwhile, with regard to monetary policy, the situation has fluctuated. There were very marked expansionary cycles at the start of the pandemic, aimed at providing markets with abundant liquidity, followed by periods of monetary tightening when the pandemic recovery and bottlenecks overlapped with Russia's invasion of Ukraine, which pushed up energy and food prices. The fact is that in a macroeconomic environment dominated by supply-side shocks, inflation spikes tend to occur more frequently. At the same time, monetary policy becomes less effective in containing them, while its transmission mechanisms become more complex and indirect.

Lack of coordination

The way the world has dealt with supply-side shocks has been quite contradictory: fiscal and monetary policy have often moved in opposite directions

The result has been that, from a global perspective, fiscal and monetary policy have often moved in opposite directions or with only modest coordination, the equivalent of the right hand doing the opposite of the left. The final outcome of this monetary and fiscal policy mix has been a more indebted world, with much more swollen central bank balance sheets and monetary policies that have had to swing between cycles of rate cuts and hikes. Some effects of this policy mix appear likely to endure over time, such as the recent rise in long-term interest rates, partly explained by greater doubts over the long-term fiscal sustainability of many economies.

What are the implications of a world that, in the future, is more frequently affected by positive supply-side disruptions, such as AI, or by other negative disruptions, such as geopolitical conflicts, pandemics or transition and physical risks related to climate change? Any answer would be incomplete and partial. But here are some key preliminary conclusions. An initial one is that the "traditional" solution of applying

[1] International Monetary Fund (IMF). World Economic Outlook Database, various editions.
[2] International Monetary Fund (IMF). Fiscal Monitor, various editions.

expansionary or contractionary monetary and/or fiscal policies does not resolve the situation by itself. It is necessary to work on policies that influence aggregate supply as well as aggregate demand. Aggregate supply means focusing on productivity, improving technology, increasing training and labour-force reskilling, applying targeted stimulus policies by sector, implementing strategic industrial policies and promoting a coordinated energy transition, among other things. In sum: to expand the productive frontier of the economy.

Future growth will depend on expanding aggregate supply through productivity gains, innovation, investment, skills development and targeted industrial policies

A 2017 article by economists Dirk Jan van de Ven and Roger Fouquet[3] describes the impact of supply shocks arising from energy prices in the United Kingdom. Their findings suggest that the impact of supply disruptions increased with growing dependence on coal and declined with the partial transition to oil. However, the shift from exporting coal to importing oil increased the negative impact of demand disruptions. Broadly speaking, the findings indicate the economy did not become significantly more resilient to supply disruptions as they developed. The transition to less dependent and less volatile — and cleaner — forms of energy is likely to help mitigate these impacts, although greater international interdependence could hold back this effect. Other economists, such as Carolina Pagliacci (2018), argue that supply shocks may be more frequent than we think, but that we do not detect them[4, 5].

A study by European Central Bank (ECB) economists Massimo Ferrari Minesso, Marie-Sophie Lappe and Denise Rößler presents a slightly different view of the role of energy. It notes that the correlation between geopolitical events and the price of oil is not as clear as previously believed. Increased geopolitical tension does not always lead to a systematic rise in energy prices. In fact, they argue that, after a time, oil prices tend to remain below their previous levels[6].

The global economy has proved remarkably resilient, but lower growth and weaker policy buffers highlight the need for long-term structural reforms

But it is not all bad news in this world of "supply tensions". The emergence of AI could have a material positive effect on global productivity in the coming years. But to what extent? It is difficult to know with certainty. Estimations of the potential impact on productivity — a key channel through which AI will impact the economy — range from a low of a 0.7% increase over 10 years (Acemoglu[7]), to a higher 6.8% (Aghion and Bruel[8]), or a significantly more optimistic, but still plausible, 10-15% by other public and private institutions.

Two main lessons

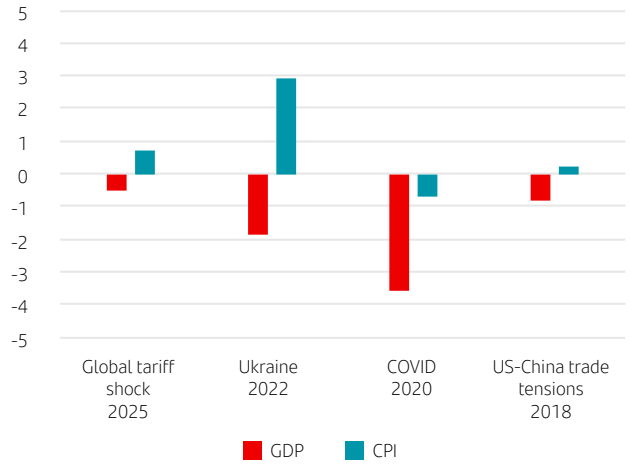
In recent years we have learnt some central lessons about the global economy, together with a general conclusion on how to proceed going forward. The two lessons are: 1) the global economy is more resilient than we initially believed. All the post-pandemic recoveries bear this out. 2) Even so, global growth has been affected: annual growth is half a percentage point lower than it was in the first two decades of this century. These two main lessons lead us to conclude that, although the global

[3] van de Ven, D. J., & Fouquet, R. (2017). Historical energy price shocks and their changing effects on the economy. Energy Economics, 62, 204-216.
[4] Pagliacci, C. (2019), 'Are we ignoring supply shocks? A proposal for monitoring cyclical fluctuations', Empirical Economics, 56, 445–467.
[5] van de Ven, D. J., & Fouquet, R. (2017), 'Historical energy price shocks and their changing effects on the economy', Energy Economics, 62, 204–216.
[6] Ferrari Minesso, M., Lappe, M.-S., & Rößler, D. (2023), 'Geopolitical risk and oil prices'. ECB Economic Bulletin, Issue 8/2023, Box 2. European Central Bank.
[7] Acemoglu, D. (2024), 'The Simple Macroeconomics of AI', NBER Working Paper No. 32487, National Bureau of Economic Research.
[8] Aghion, P., & Bunel, S. (2024), 'AI and Growth: Where Do We Stand?', Federal Reserve Bank of San Francisco.

economy has been resilient, it has emerged from all these shocks with fewer buffers than in the past: with less fiscal policy room for manoeuvre, high levels of debt and swollen central bank balance sheets.

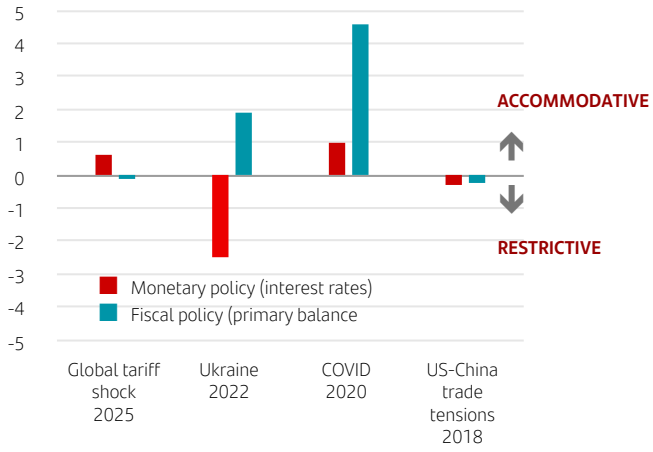
This raises doubts about the capacity to deal with new unexpected shocks in the future. Short-term palliative policies on the aggregate demand side, both fiscal and monetary, may be necessary at a given moment. But in order not to overuse them, it is necessary to work in parallel on long-term policies to strengthen aggregate supply across multiple areas, including international coordination, labour training, productivity gains, technological innovation and investment. The challenge looking ahead will be to design economic policies that make it possible to better reconcile economic growth with medium-term sustainability.

Impact on GDP & CPI after 1 year
(Economic and geopolitical shocks 2000-2025)
pp



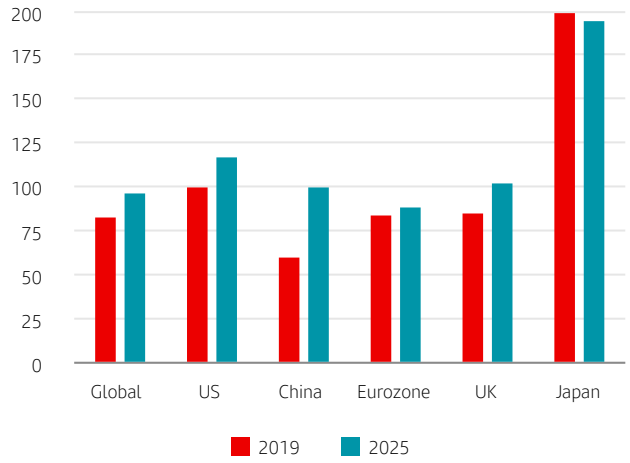
Sources: Refinitiv and Santander Research.

Impact on monetary & fiscal policy after 1 year
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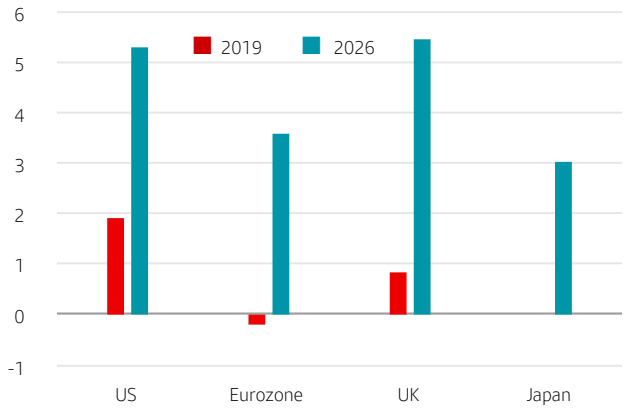
Sources: Refinitiv and Santander Research.

Government debt by country
(% GDP)



Source: BIS.

10y government debt yields
(%)



Source: Refinitiv.