Discussion of "The drivers of post-pandemic inflation" by Domenico Giannone and Giorgio Primiceri

By Fernanda Nechio[1]

1 Introduction

I very much enjoyed the opportunity to carefully read and comment on the paper by Domenico Giannone and Giorgio Primiceri. The paper studies the run-up in inflation in the U.S. and in the euro area since the COVID-19 pandemic and assesses the relative contributions of supply and demand shocks to the dynamics of inflation and real activity.

Inflation rates have reached levels not seen in decades since the COVID-19 pandemic and real activity recovered from a near complete halt in some advanced and emerging economies.

The main drivers behind this inflationary bout have been the object of vast analysis in the literature. Various papers have pointed to adverse supply shocks and disruptions as the main contributor to the sizable inflation readings. Others have reinforced demand factors, highlighting the roles of unprecedented fiscal policies paired with accommodative monetary policies in helping the economic recovery but also boosting inflation. Giannone and Primiceri provide a comprehensive literature overview for both groups pointing to the literature key findings and differences.

The relatively conflicting predictions from the literature point to the challenges in finding answers as history unfolds. Moreover, the nearly unprecedented nature of the COVID shocks significantly hamper our ability to use history as a guideline.

When long histories or past episodes are not the best resources to inform researchers, cross-country comparisons come in handy. This is particularly the case for the COVID-19 pandemic as it was a global event, severely impacting most economies in the world.

All these challenges, of course, do not diminish the importance of trying to understand the patterns and drivers of main economic variables since the COVID-19 pandemic. This becomes particularly pressing for monetary authorities and policymakers, as this understanding may help shape policy going forward and can provide lessons for the future.

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[1] Federal Reserve Bank of San Francisco. The views expressed herein are solely the responsibility of the author and should not be interpreted as reflecting the views of the Federal Reserve Bank of San Francisco or the Federal Reserve System.

Against this backdrop, this paper tackles on the important question of disentangling the relative contributions of demand and supply disruptions in explaining the dynamics followed by inflation and real activity since the pandemic. With the considerations above in mind, the paper explores the (relatively) short time sample since the late 1990s but considers a cross-country comparison to help interpret their findings.

Their estimates point to a disproportionate role of demand factors in explaining inflation dynamics in the U.S. and the euro area. Adverse supply shocks seem to have a more sizable role in explaining the dynamics of real activity since COVID, particularly in the euro area. The authors are very thorough in their analysis and cover a series of robustness exercises and extensions.

There is much that I like and agree with the paper. Their findings corroborate my own research despite considering very different methodologies, cross-section, and time samples for the United States. In my discussion I raise a few key points from their findings, pose a few questions, and hope to provide food for thought for future research.

2 U.S. and EA: similar contributions albeit different demand pressures

The paper highlights a few important patterns observed in the data. Two key observations are that (1) the recession has been more severe in the euro area than in the U.S. and the recovery slower; and (2) inflation dynamics have been relatively similar in the two economies.

To study the drivers of such patterns, the paper estimates a structural vector autoregression (SVAR) model for each economy and relies on sign restrictions to identify demand and supply shocks. Because of data limitations imposed by the euro area's inception and potential structural breaks in the macro series caused by the pandemic, the estimation relies on quarterly data from 1997 to 2019. Using the estimated relationships between real activity, inflation, supply, and demand disturbances, the authors obtain the contributions of these disturbances during the pandemic period.

The main finding of the paper is that demand disturbances help explain the bulk of the inflation run-up experienced in the U.S. and in the euro area since the COVID-19 pandemic. Supply shocks are responsible for a large share of the decline in real activity during that period. These patterns hold for the estimation using U.S. and euro area data. The paper shows that these results are robust to alternative inflation measures, the inclusion of other macroeconomic variables and other measures of economic activity.

The finding that supply shocks contributed relatively little to the inflation run-up since COVID may seem surprising, as we know that during that period both the U.S. and

the euro area, particularly following the invasion of Ukraine, were affected by various adverse supply shocks.

The paper provides an intuitive way to make sense of these results by resorting to a simple aggregate supply and demand diagram. In that framework, because both the euro area and the U.S. have central banks that built a strong reputation as inflation targeters, their aggregate demand curves are quite flat. This implies that shifts in the aggregate supply curve disproportionately affect real activity rather than inflation.

Of course, COVID-19, particularly initially, comprised both supply and demand adverse shocks, which caused substantial effects in real activity. These adverse demand effects were quickly reversed by the strong actions from fiscal and monetary authorities. But since these two economies have relatively flat demand curves, these demand-enhancing policies disproportionately contributed to the rise in inflation while also fostering an economic recovery.

The similarities in the estimates from the U.S. and the euro area are somewhat striking. This is particularly so once we consider the drivers behind demand disturbances in the two economies. Typical demand stimuli include expansionary fiscal and monetary policies. But while the accommodative monetary efforts were relatively more similar in scope and nature in these two economies, fiscal efforts in response to COVID-19 were much larger in the U.S. than in the euro area. In fact, the U.S. fiscal effort in response to COVID was disproportionately large even by its own historical standards.

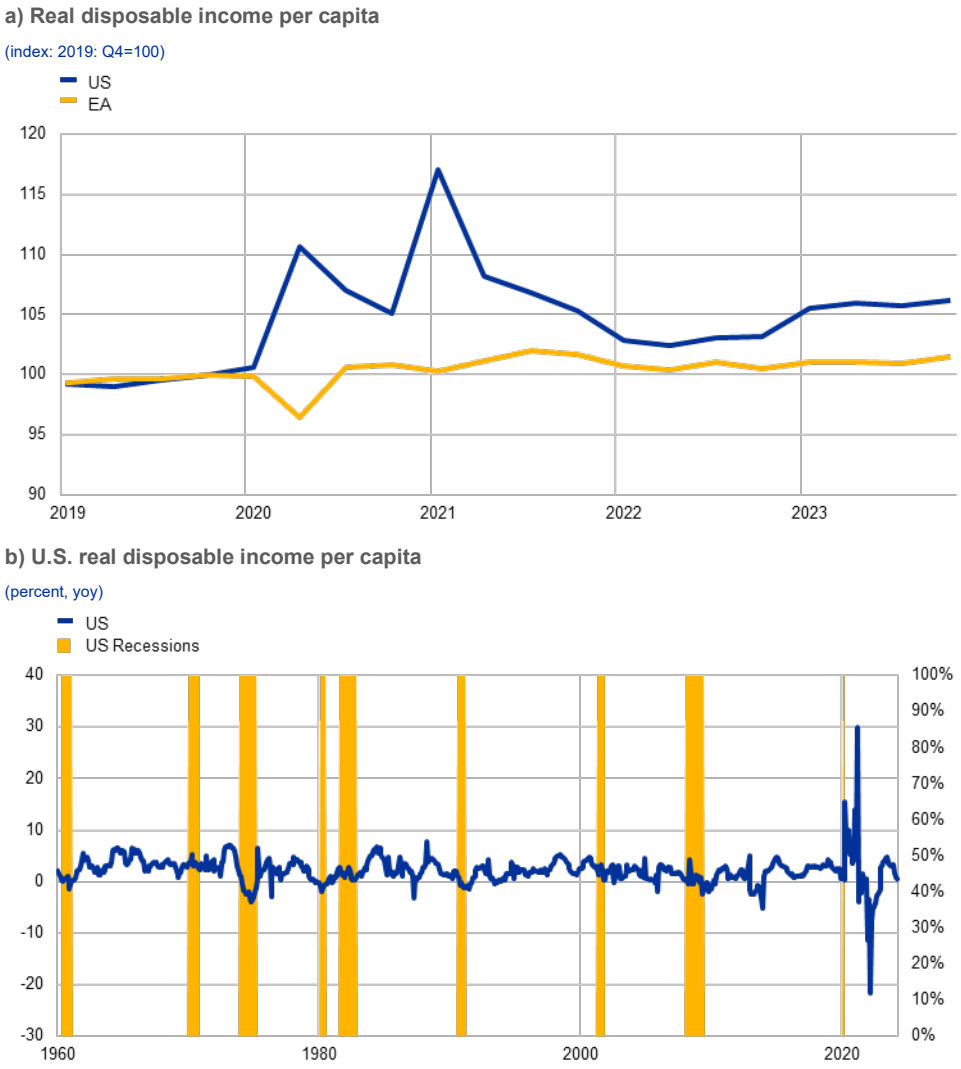
Chart 1 provides an update of Jordà and Nechio (2023) to illustrate this point. It reports, in panel (a), real disposable income per capita in the U.S. and in the euro area and, in panel (b), a longer historical perspective for the United States. The shaded area in panel (a) reports the interquartile range for euro area countries.

The large and persistent difference between real disposable income per capita in the U.S. and in the euro area depicted in panel (a) suggest that demand pressure could have been even stronger for the former. This may seem at odds with Giannone and Primiceri's findings that the contribution of demand factors to inflation were relatively similar, if not lager in the euro area.

Panel (b) reinforces the latter point and raises an additional challenge. It illustrates the challenges of using history to explain relationships in extraordinary events such as the COVID-19 pandemic. The effects of the fiscal efforts in the U.S. on disposable income were enormous even by its own historical standards. In that case, relying on past relationships to help explain the effects of such a disproportionate effort could potentially bias our conclusions. The exceptionality of the recent U.S. fiscal effort and the reliance on history to explain current dynamics may help explain the puzzling similarity of the contributions of demand shocks in the U.S and the euro area.

Chart 1

Real disposable income per capita: U.S and the euro area



Sources: panel a: OECD; panel b: Bureau of Economic Analysis accessed via FRED.

3 Other countries: different demand pressures, but similar inflation and real economy dynamics

One of the most unique characteristics of the pandemic was that it was global. Different from other shocks and challenges faced by economies, the COVID-19 pandemic deeply affected nearly all countries in the world and ensued a somewhat coordinated response worldwide that shared common ingredients even across economies with very different economic fundamentals and initial conditions.

Interestingly, the similarities in the dynamics of real activity and inflation were not only limited to those of the U.S., the euro area, or other advanced economies, but also included some emerging economies. Chart 2 helps illustrate this point by

comparing main economic variables and their dynamics in the U.S., the euro area, and Latin America.[2]

Starting from the top left chart, panel (a) reports fiscal efforts implemented by these three economies during the pandemic. Panel (b) reports the dynamics of their main policy rates. Panel (c) reports the evolution of real GDP. Finally, panel (d) compares their main headline CPI inflation series.

The top panels show how policy-driven demand factors differed substantially in these economies. Panel (a) shows that their fiscal efforts differed in scope, which is likely related to the different availability of fiscal space in these economies. Panel (b) summarizes monetary policy efforts with the evolution of the policy rate which, albeit for a level factor, was rather similar. Of course, unconventional policies were more frequently and intensely used in advanced economies, which is not reported in these panels. Both the latter statement and panel (a) highlight the contrasting heterogeneity in the intensity of demand disturbances in Latin America relative to those in the U.S. or the euro area.

And yet, the similarities between the dynamics followed by real activity and inflation are striking, as panels (c) and (d) clearly illustrate. The rise in inflation and drop in GDP in Latin America, as well as their dynamics since the pandemic, are very similar to those in the U.S. and the euro area.

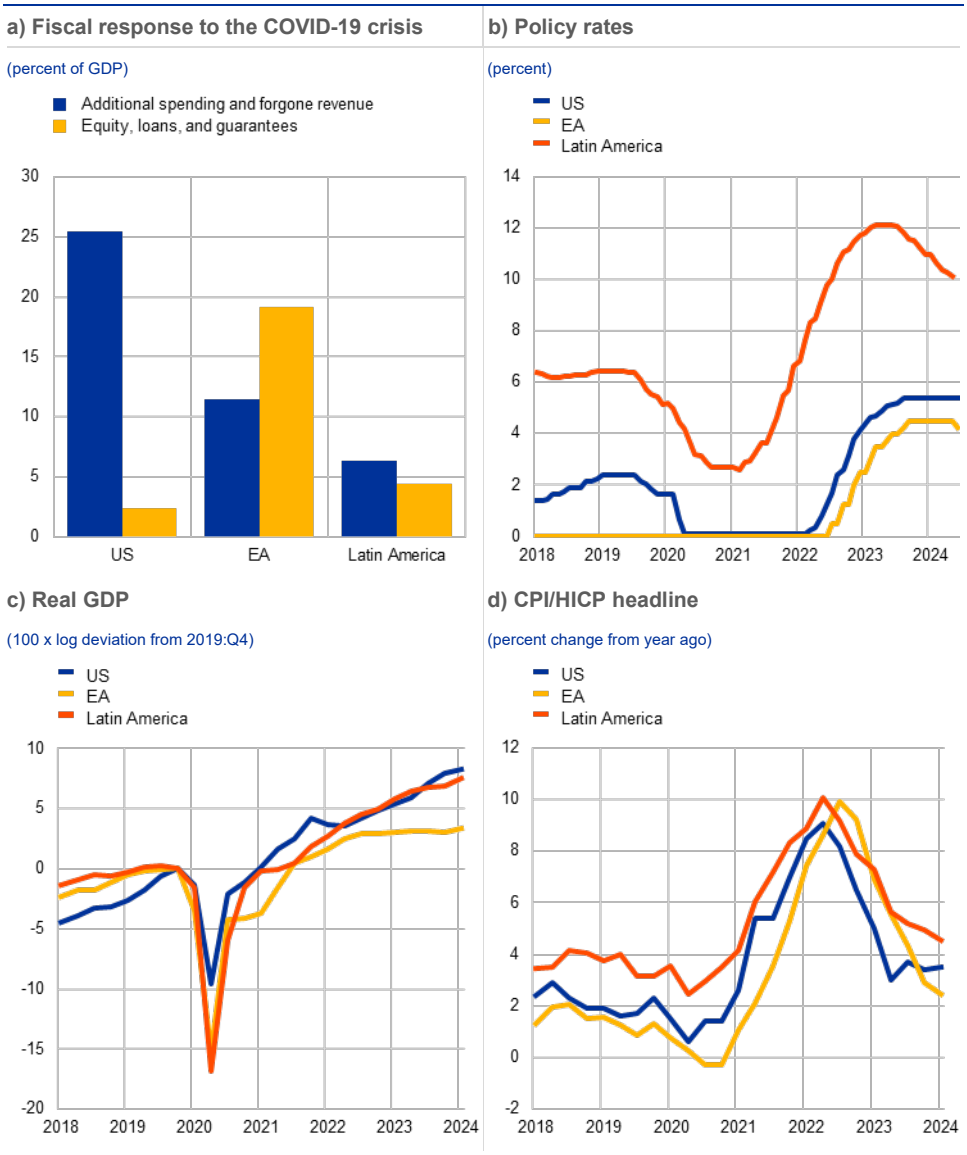
Of course, these emerging economies in Latin America do not share a long history of inflation targeting and, arguably, their central banks do not benefit from same credibility as the Fed or the ECB. Moreover, the relative importance of supply and demand shocks in explaining the dynamics of inflation and real activity are likely different from those estimated to the U.S. or the euro area. But still, the similarities in main economic variables are remarkable.

How can we make sense of this similarity across economies, even among those with so different fundamentals?

[2] Latin America corresponds to a GDP-weighted average of Brazil, Chile, Colombia, Mexico, Paraguay, and Peru.

Chart 2

Main economic variables: U.S., the euro area and Latin America



Sources: panel a: International Monetary Fund; panel b: CEIC and Federal Reserve Board, accessed via Haver Analytics; panel c: Eurostat, Bureau of Labor Statistics, Haver Analytics, and CEIC; panel d: Eurostat, Bureau of Labor Statistics, Haver Analytics, and CEIC.

4 Transmission of shocks across countries

The patterns exhibited so far seem to suggest that there could be some degree of transmission of shocks across economies. What if shocks or external economic conditions are helping drive these similarities and comovement in economic variables worldwide?

This is, of course, not a new question. Other papers in the literature have highlighted the roles of global shocks, such as Forbes et al. (2024), in this volume, and other

examples that include Auer et al. (2024), Forbes (2019), Jordà and Nechio (2018), Haroon and Surico (2012), among others.

Section 5 in the paper touches on these issues by considering the transmission of shocks through energy prices. Their findings are further indication that the transmission of shocks across the Atlantic can be relevant.

Chart 3 in this discussion takes an alternative approach to grasp this issue. The two panels report findings from the estimation of a Phillips curve for each economy that is somewhat standard, except that it is augmented to include external factors (Jordà and Nechio, 2024). These factors are principal components extracted from headline inflation and unemployment rates from a set of countries using quarterly data between 1999 and 2019.[3] These principal components are, then, included in a Phillips curve estimation, along with a control for oil inflation. Finally, the estimated relationships are then applied to the whole sample up to the first quarter of 2024 to obtain the contributions of each component to inflation dynamics.

The estimates for the U.S., reported on panel (a), suggest that external factors, particularly inflation ones, can help explain a non-trivial fraction of recent inflation dynamics. Panel (b) shows that this is also the case, albeit to a smaller degree for the euro area. In both panels, the role for "unexplained factors since the pandemic onset is substantial, reinforcing the exceptionality of this time period and the challenges associated with using historical relationships to explain extraordinary periods.

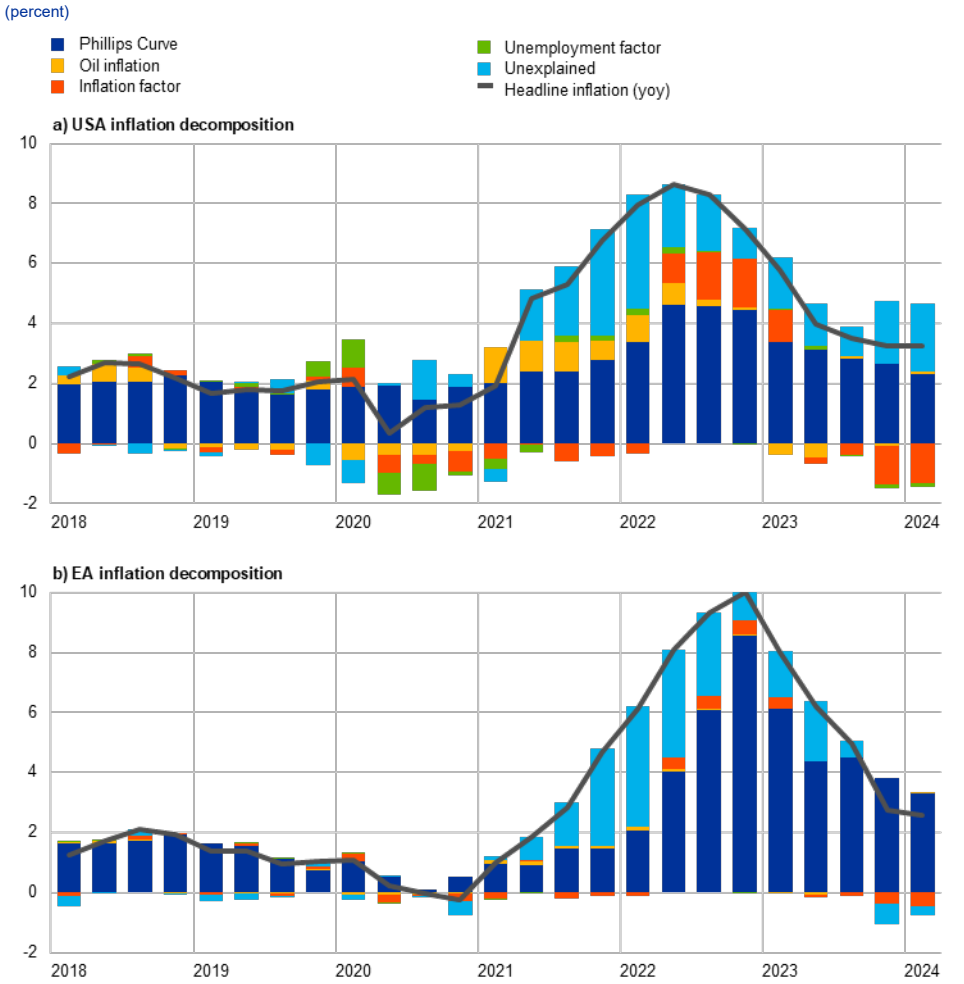
Notwithstanding, the contributions reported in Chart 3 seem to point to a non-trivial importance of external factors and some degree of heterogeneity on the drivers behind the dynamics of inflation in the U.S. and in the euro area.

All of these results indicate that when estimating statistical models separately for each economy, we may be missing an important channel of transmission of shocks across countries.

[3] The inflation and unemployment factors are calculated from a balanced panel of countries by extracting the principal components of the deviations of inflation and unemployment rates from their five-quarter (two leads, two lags and current) moving averages. For the euro area estimation, the countries included are Australia, Canada, Chile, Czech Republic, Denmark, Hungary, Japan, Mexico, New Zealand, Norway, Poland, Romania, Sweden, South Korea, Switzerland, the United Kingdom, and the United States. For the U.S., the countries included are the same as those in the euro area, excluding the U.S., in addition to Austria, Belgium, Estonia, Finland, Greece, Germany, Ireland, Italy, Lithuania, Latvia, Netherlands, Portugal, Spain, Slovenia, and Slovakia.

Chart 3

Contributions to inflation: U.S. and the euro area



Sources: Eurostat, Bureau of Labor Statistics, Haver Analytics, CEIC, International Monetary Fund, Federal Reserve Bank of Philadelphia, and European Central Bank.

5 Policy implications

Finally, I turn to the policy implications of the paper. Here the paper finds an important distinction between the U.S. and the euro area.

The authors disentangle the contributions of monetary and non-monetary demand pressures in real activity and inflation. Their focus is to try and measure the impact of ECB's accommodation policies on inflation and real activity. The paper shows that had the ECB leaned against inflation, the recovery would have been even slower in the euro area. In fact, the economic activity would be five percent lower than it is today.

Interestingly, when you look at the analogous estimates for the U.S., their estimates suggest that the contribution of the Fed's accommodative monetary policy to the recovery is much smaller throughout the sample. These differences, of course, have

important implications for policy going forward in the two economies, and will likely be the subject of interest to future research.

6 Conclusion

The paper convincingly argues that demand disturbances were an important driver of inflation in the U.S. and the euro area following the COVID-19 pandemic. The authors are thorough and careful, showing how their findings are robust to alternative measures of inflation, and different specifications and controls.

Their findings provide an important contribution to the literature with much scope for lessons and policy implications going forward. Very importantly, their results provide an array of interesting questions for future research.

I conclude by strongly recommending the paper to anyone interested in this field and in learning about the relationships between shocks and economic variables during such extraordinary times.

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