Another concern is robustness with respect to the number of factors included in the model. The fourth factor still explains a significant share (6%) of the variation in the data (see Table 2), so including or excluding it might affect the structural factor analysis. Hence, we re-estimate the factor model with four factors (and require now not only the third, but also the fourth factor not to satisfy the sign restrictions we impose to identify the supply and demand factors). The results barely differ from the baseline results except that model uncertainty is somewhat higher when the fourth factor is included (Figure 4, panel (c)). This is also reflect in an essentially perfect correlation of the factors with those from the baseline estimation (Table 4).

Table 4: **Correlations with baseline factors for different robustness checks**

Robustness checks	Demand factor	Supply factor
Breaks in mean adjusted data	0.91	0.92
Post-1987 estimation	0.90	0.76
Four factors	1.00	1.00

Notes: The table displays the correlation of the Median Target structural demand and supply factors obtained under the different robustness checks with those obtained in the baseline case.

4.3 Real-time analysis

Reliability in real time is a key criterion of indicators. In order to assess the reliability of the demand and supply indicators in real time, we vary the end of the sample period, estimating the model recursively for sample end points in 1998Q1, 2003Q1, 2008Q1, 2013Q1, 2018Q1. If the model produces reliable indicators in real time, we would see little revision in the estimated factors as we recursively estimate the model.

This is, of course, a pseudo real-time analysis as we do not consider revisions in the data, i.e. we do not recursively estimate the model using real-time data. This should not be a major caveat as factor model outcomes are less prone to data revisions. As long as revisions are not systematic they would be captured by the idiosyncratic components. More generally, the existing evidence suggests that end-of-sample reliability of the estimated model is of greater importance for real-time reliability of indicators than data revisions. For instance, for the output gap, the most prominent single business cycle indicator, Orphanides and van Norden (2002) show that it suffers in particular from "pervasive unreliability of the end-of-sample

estimate of the trend in output" while ex-post revision of published data plays only a secondary role.

Figure 5 shows the recursive factor estimates, together with the baseline factor estimates. The figures suggest that the demand and supply factors barely change as more data are added to the model, which is also confirmed by high correlations of the recursively estimated factors with the baseline factors (Table 5). Overall, this suggests that our factors are good indicators in real time, as no large revisions are necessary with incoming information. Together with the fact that our factor estimates match well with common narratives, are easy to construct and to update, this suggests that they can be used as indicators in regular policy analysis. One possibility is to include them in standard macro (or macro-finance) models and to assess the effects of structural shocks on them, something we will illustrate in the next section.

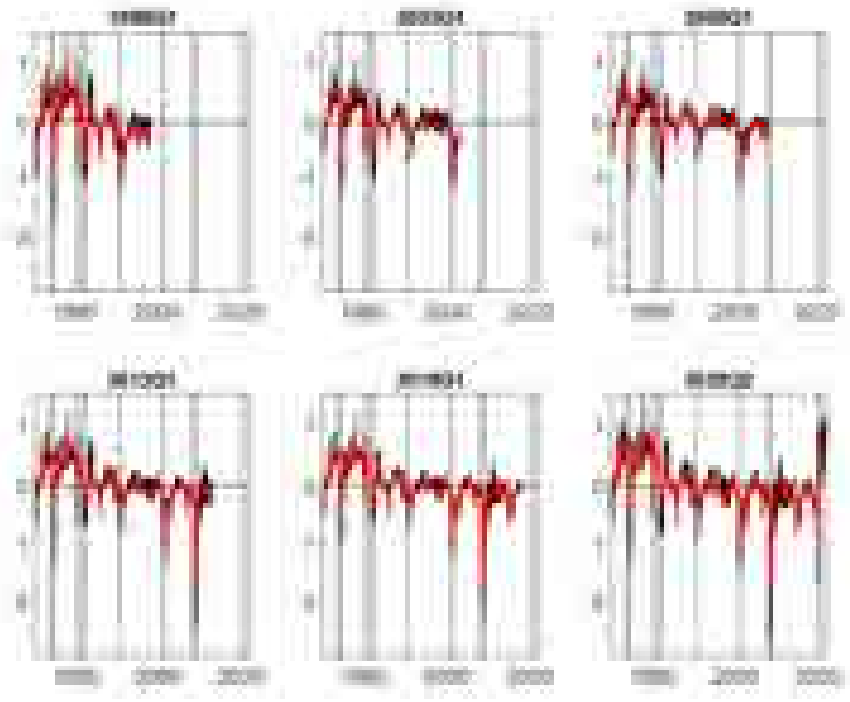
Table 5: **Correlations with baseline factors for recursive estimations**

Sample end points	Demand factor	Supply factor
1998Q1	0.97	0.94
2003Q1	0.94	0.83
2008Q1	0.92	0.75
2013Q1	0.99	0.97
2018Q1	0.99	0.98

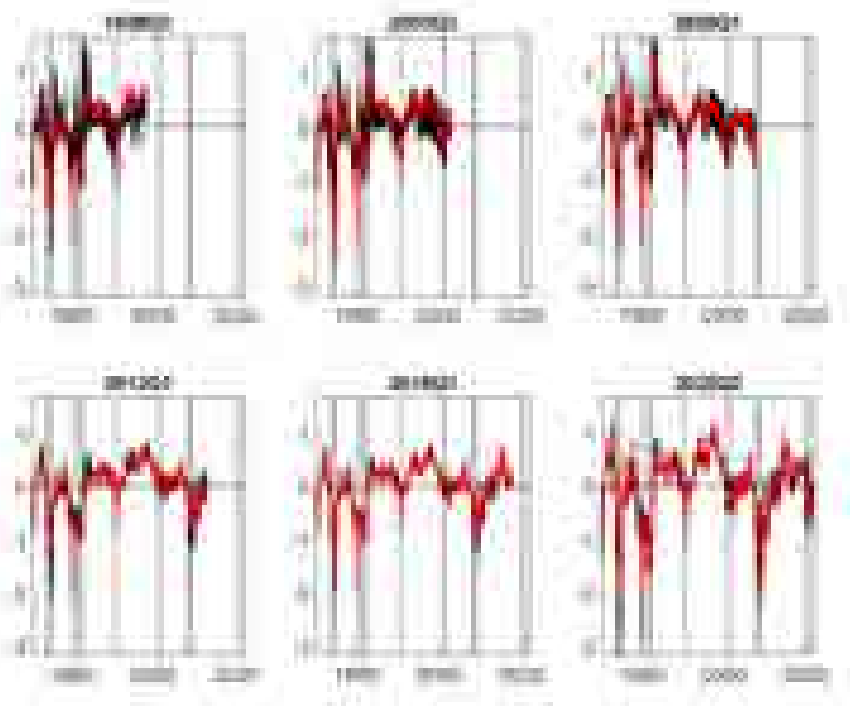
Notes: The table displays the correlation of the Median Target structural demand and supply factors obtained for different sample end points of the recursive estimations with those obtained in the baseline case.

Figure 5: **Real-time factors**

(a) Real-time demand factors



(b) Real-time supply factors



Notes: In percentage points. Normalised to have the same standard deviation as GDP growth and multiplied with its loadings. Red: Median Target estimates, black: estimates from all models. Grey bars: NBER recessions.

5 Impact of monetary policy and financial shocks on demand and supply

We next assess the impact of monetary and financial shocks on demand and supply conditions. This question is of particular relevance against the background of tightening monetary policy and tighter financial conditions in the wake of surging economic and geopolitical uncertainty. We address it by estimating the impact of monetary policy shocks and of shocks to the excess bond premium (EBP) of Gilchrist and Zakrajšek (2012) on the demand and supply factors.[6]

From a conceptual point of view, monetary policy and financial shocks can affect both demand and supply. In the standard New Keynesian model, monetary policy affects consumption demand through an intertemporal substitution effect (Clarida et al. 1999) while investment demand depends negatively on the real value of the capital stock, which is in turn negatively related to the real interest rated and risk premia (Smets and Wouters 2003). Through these channels, a tightening in monetary policy and in financial conditions through risk premia would dampen aggregate demand.

Supply-side effects of monetary policy and financial shocks may arise through several channels. If firms have to borrow working capital to finance their wage bill (Christiano et al. 2005), higher interest rates raise the cost of working capital and exert a negative effect on supply, mitigating the inflation response to an interest rate shock and amplifying the output response. Barth and Ramey (2001), Chowdhury et al. 2006 and Gilchrist et al. 2017 provide evidence of this "cost channel" of monetary policy and financial shocks. An alternative supply-side effect of changes in monetary and financial conditions highlighted by Baqaee et al. (2021) runs through the reallocation of resources to high-markup firms, alleviating misallocation. Through this channel, a loosening of monetary and financial conditions would boost supply, generate positive productivity effects and favourable cost effects, mitigating the impact on inflation. At the same time, there could be supply-side effects that reinforce the transmission of monetary policy through a cleansing channel similar to the recession cleansing effect suggested by Caballero and Hammour (1994). Tighter monetary policy could lead to a cleansing of unproductive firms and an increase in aggregate productivity. Such effects are implied by the analysis in

[6]The excess bond premium is a component of corporate bond credit spreads that is unrelated to expected default risk, providing a measure of investor risk appetite and hence of financial conditions more generally.

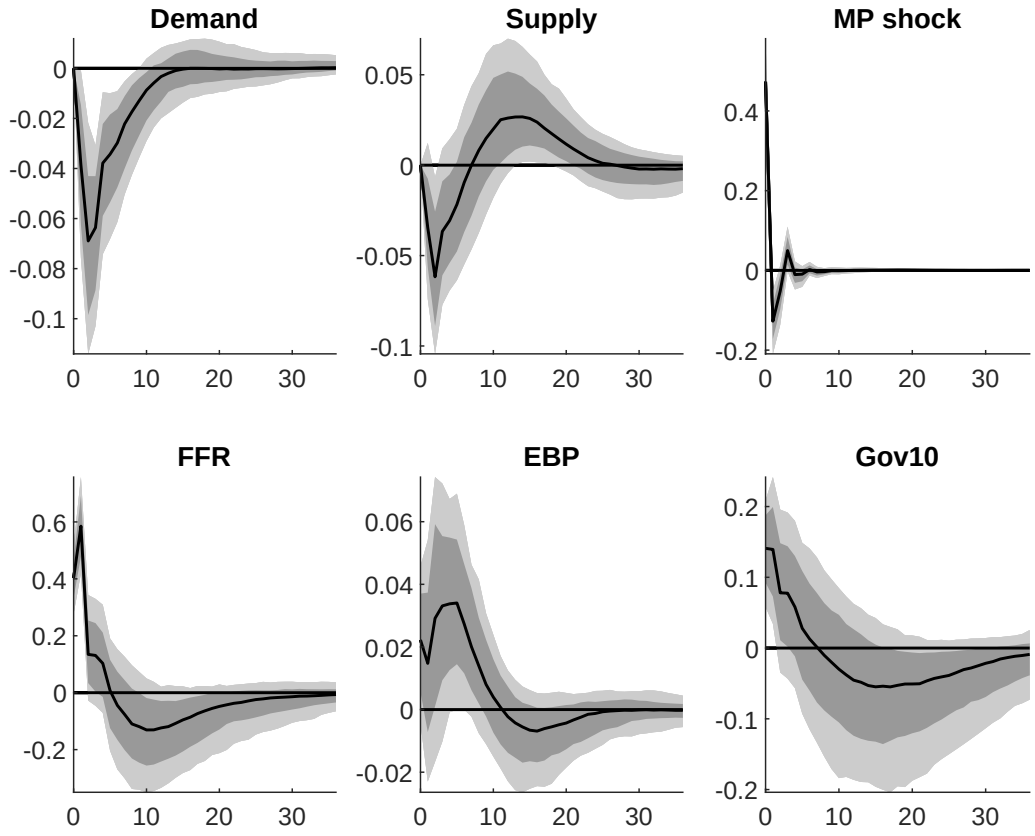
Banerjee and Hofmann (2022) who find that that low interest rates have fostered the rise in so called zombie firms which are a drag on economies' supply side.

We assess the dynamic impact of monetary policy and EBP shocks on the demand and supply factors based on two vector autoregressive models (VARs) estimated with two lags each. The first VAR includes the demand and supply factors from the baseline model (extracted from all models, i.e. taking into account model uncertainty), the Romer and Romer (2004) monetary policy shock series extended to 2007Q4 by Wieland and Yang (2020)[7], the Federal Funds rate, the EBP and the 10-year Treasury yield. The sample period is 1970Q1-2007Q4. We identify the monetary policy shock based on a recursive identification scheme, with the variables ordered as they were listed above. This ordering implies that the monetary policy shocks can affect financial variables and the policy rate immediately and the macroeconomic factors with a lag. This is in line with standard recursive identification schemes applied in the literature. The second VAR is identical to the first, but we omit the Romer-Romer shock measure. The financial shock is the residual associated to the EBP equation. We use a bootstrap based on 300 draws. We show median estimates as well as 68% and 90% confidence bands which account for both model and VAR parameter uncertainty.

Figure 6 shows the dynamic effects of a one standard deviation monetary policy shock. The results suggest that a monetary policy tightening (which leads to an instantaneous increase in the Federal Funds rate by 0.4 percentage points) is followed by a contraction of both demand and supply. Specifically, demand falls by up to 0.07 percentage points after the shock and the response is statistically highly significant. The negative impact on supply is somewhat smaller, with a peak decline of about -0.05 percentage points, but it is more short lived and it is generally not statistically significant. Overall, these results suggest that for monetary policy shocks the traditional demand effects dominate while there is uncertainty about the relevance of supply effects that might weaken the ultimate impact on inflation.

[7]The Romer and Romer shocks are derived by regressing the change in the intended Federal Funds rate around FOMC meeting days on internal Fed forecast of inflation and the real economy.

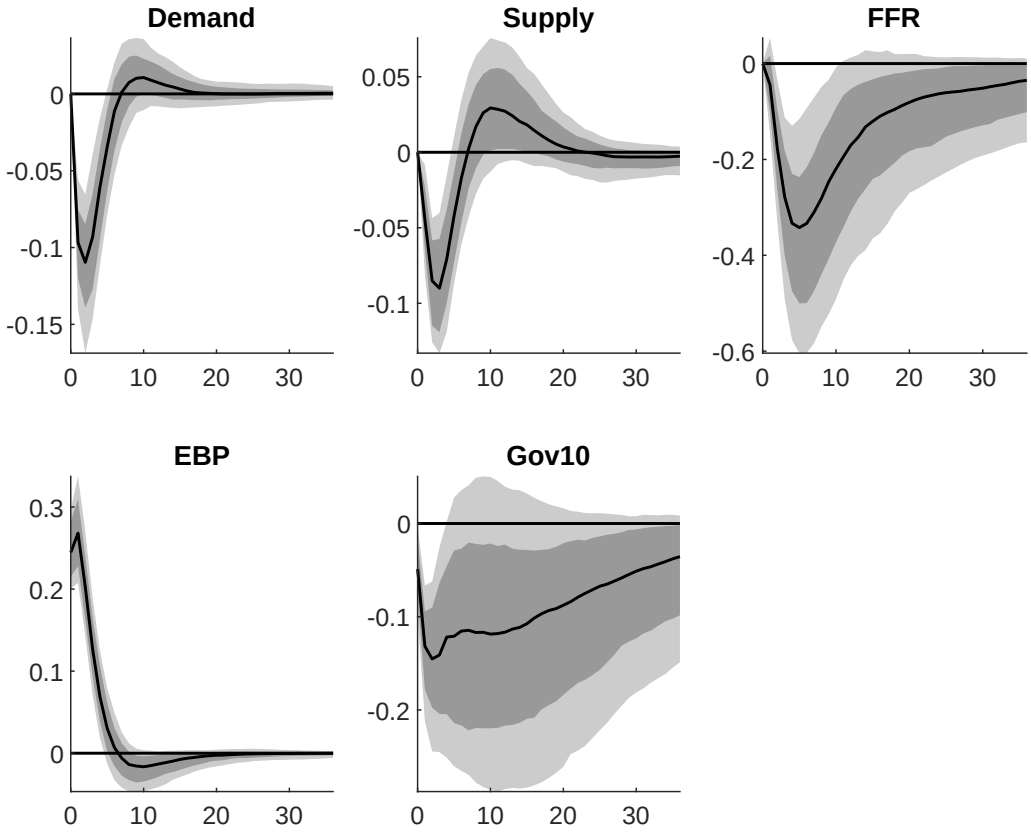
Figure 6: **Dynamic effects of a contractionary monetary policy shock**



Notes: Impulse responses to a one standard deviation monetary policy shock of demand and supply factors, the Romer-Romer shock measures, the FFR, the EBP and the government bond yield in percentage points. Black: median estimate, areas: 68% and 90% confidence bands.

What do these estimates imply for the current monetary policy tightening? Given the high uncertainty around the impulse response functions and the fact that the estimates of demand and supply conditions themselves are surrounded by model uncertainty, we obviously need to be very cautious in deriving policy implications. Yet, back-of-the-envelope calculations suggest that, given our estimates, a 6 percentage points increase in the Federal Funds rate would be needed to bring current demand conditions back to normal levels, i.e. from 1 percentage points to 0. In order to further compensate for inflationary pressure coming from tight supply conditions a further depression of demand by 1 percentage point would be needed, which would imply a further 6 percentage points rate rise. While these numbers seem excessive and unrealistic, the observation that the Federal Funds rate increased by 14 percentage points between 1977 and 1981 (from 5% in 1977 to 19% in 1981) puts it somewhat into perspective.

Figure 7: **Dynamic effects of a contractionary financial shock**



Notes: Impulse responses to a one standard deviation EBP shock of demand and supply factors, the EBP, the FFR and the government bond yield in percentage points. Black: median estimate, areas: 68% and 90% confidence bands.

Figure 7 shows impulse responses for the second VAR model for a one standard deviation EBP shock. The charts suggest that a shock that raises the EBP by 0.25 percentage points lowers both supply and demand by about the same amount (about 0.1 percentage points). Both the demand and supply effects of the shock are statistically highly significant. This result suggests that adverse supply side effects may mitigate the disinflationary impact of a tightening of financial conditions consistent with the cost and re-allocation channels described above. The more significant supply-side effects of the EBP shock compared to the monetary policy shock may reflect the fact that the EBP captures financial conditions for firms and that these supply-side channels primarily operate through the corporate sector.

Our finding of significant adverse supply effects of financial shocks is in line with previous literature which finds no large role of financial shocks for inflation dynamics in terms of variance decomposition (Abbate et al. 2022, Furlanetto et al. 2022). The

finding also at least in part explains the "missing disinflation" during and after the GFC: the large negative financial shock associated with the crisis not only had strong negative demand effects, but also led to tighter supply with the effects on inflation via those channels broadly cancelling each other out. For the current juncture, it implies that adverse financial shocks on top of monetary tightening, e.g. through rising risk aversion, may dampen economic activity but provide little help in curbing inflationary pressures.

6 Demand and supply in the euro area

We estimate euro-area demand and supply factors using a quarterly database over the period 1999Q1 – 2022Q2. The euro-area database comprises data on various measures of inflation and economic activity for the four major euro-area countries (France, Germany, Italy, Spain) as well as euro-area aggregates. Table A.2 in the Appendix provides details on the data series, their sources, variable transformations and on the sign restrictions imposed on each individual series.

The data are transformed in the same way as the U.S. data before, i.e. they are standardised and outlier-adjusted and data gaps are closed through the EM algorithm. We then estimate the factor model and apply the same procedure described before to identify demand and supply factors. Also for the euro area, we estimate the model with three factors, which again explain more the 50% of the variance of the data (Table 4).[8]

Figure 8 reports the estimated demand and supply factors for the euro area. The results suggest a similar picture of the evolution of demand and supply conditions as in the United States in the overlapping period. In particular, we see a combination of strong demand and supply in the pre-GFC period. The GFC was associated with a strong tightening of both demand and supply. After a short recovery in particular in demand, both demand and supply tightened again markedly in the recession associated with the euro-area sovereign debt crisis in 2012. In the subsequent period until the outbreak of the Covid-19 pandemic in 2020, which was also in the euro area characterised by persistently low inflation, our factors indicate a combination of overall weak demand and strong supply.

[8]The share of loadings for which the sign restrictions need to hold is lower (85%) than for the United States. This is because no valid rotation is found for a higher share, and the reason may be larger heterogeneity in the euro area.

Table 6: **Cumulative variance shares for the euro area**

Number of Factors	Cumulative variance share
1	27
2	43
3	53
4	60
5	65
6	68
7	71
8	73
9	75
10	77

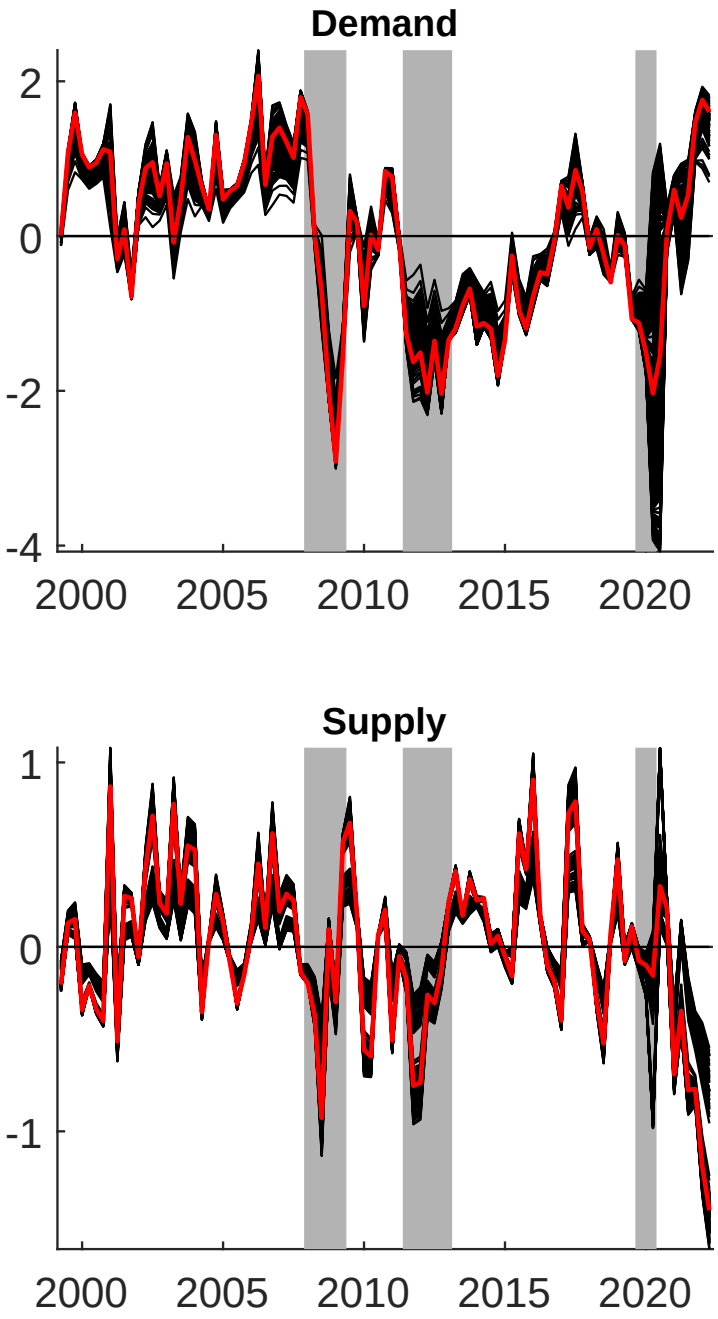
Notes: Cumulative variance shares explained by the first 10 principal components (in %) for the euro area dataset.

The Covid-19 recession in 2020 was associated with a sharp tightening in demand, while supply conditions remained broadly unaffected. For the subsequent inflation surge since 2021, our estimates suggest also for the euro-area countries strong demand in combination with tight supply. However, in comparison to the estimates for the United States, the relative strength of the two factors is somewhat different. In the euro area, the latest estimate of demand conditions for 2022Q2 is at similar levels as in the mid 2000s. Supply conditions in 2022, by contrast, have been at the their tightest level over the sample period.

Historical decompositions of HICP inflation rates in the euro area countries shown in Figure 9 further substantiate the narrative of the demand (dotted red lines) and supply (dashed blue lines) drivers of inflation in the euro-area countries. The charts show in particular the combined role of weak demand and tight supply in holding down euro area inflation in the years 2012 – 2017. In 2021/2022, the supply factor overall mostly contributed to the inflation surge in all four countries, albeit the contribution of demand is significant and in some countries almost matches that of supply. This differs from the United States where the demand factor has been the dominant driver of inflation over this period. These findings support the notion that supply factors play a relatively more important role in the euro-area inflation surge due to greater constraints in energy supply related to the Russia-Ukraine war. They are also consistent with Gonçalves and Koester (2022) who apply the methodology of Shapiro (2022*a*) to decompose the demand and supply drivers of euro area core

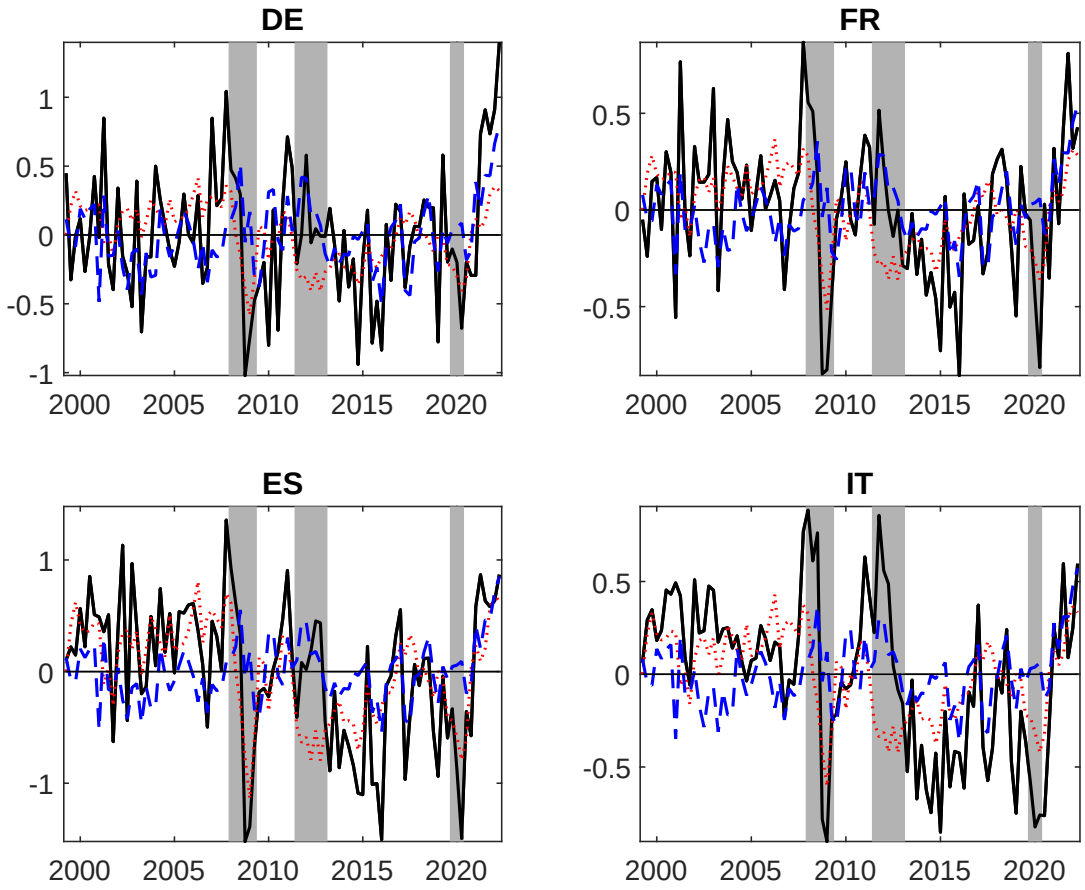
HICP inflation.

Figure 8: **Demand and supply conditions in the euro area**



Notes: In percentage points. Normalized to have the same standard deviation as GDP growth and multiplied with its loadings. Red: Median Target estimates, black: estimates from all models. Grey bars: CEPR recessions.

Figure 9: **Historical decompositions of euro-area CPI inflation**



Notes: Quarter-on-quarter, in %. Black: de-meaned time series estimates. Red: contribution of the median target demand factor. Blue: contribution of the median target supply factor. Grey bars: CEPR recessions.

7 Conclusions

Our analysis provides indicators of aggregate demand and supply conditions in the United States over the past 50 years, including the inflation surge since 2021. For key historical episodes, the indicators offer a narrative of the respective role of demand and supply factors. Specifically, the results suggest that a combination of persistently strong demand and episodically tight supply were at work during the Great Inflation of the 1970s and that the Volcker disinflation of the early-1980s was driven by the elimination of strong demand. The GFC was characterised by a collapse of demand as well as a marked tightening in supply, which explains the missing disinflation during the crisis. The period of persistently low inflation that followed reflected a combination of weak demand and strong supply.

The most recent observations indicate that the inflation surge since mid-2021 has been driven by a combination of extraordinarily expansionary demand conditions and tight supply. Similar indications obtain for the euro area. An important difference is the relatively greater role of tight supply conditions in the recent inflation surge, reflecting the adverse energy supply developments in the euro area in the wake of the Russia-Ukraine war. That said, also in the euro area demand conditions have been highly expansionary over this period and made a significant contribution to rising inflation.

Finally, our analysis further suggests that tighter monetary policy primarily dampens demand. By contrast, financial shocks, e.g. through higher risk aversion reflected in higher bond spreads, adversely impact demand and supply in a similar fashion, reflecting financial supply-side channels highlighted by the previous literature. This implies that central banks would be able to bring inflation back down through an appropriate tightening of the monetary policy stance. Adverse financial shocks that come on top of monetary tightening may dampen economic activity but provide little help in curbing inflationary pressures.

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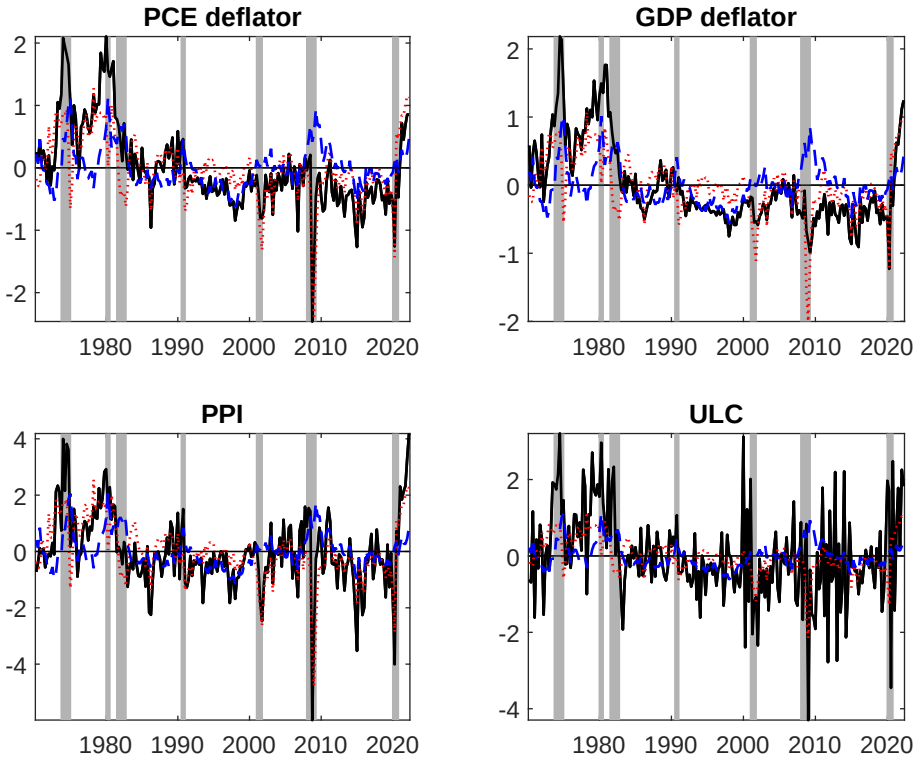
Appendix

A Appendix figures and tables

Figure A.1: Historical decompositions, more variables



Notes: Quarter-on-quarter, in %. Black: demeaned time series estimates. Red: contributions of the Median Target demand factor. Blue: contributions of the Median Target supply factor. Grey bars: NBER recessions.

Table A.1: Supplementary information on the U.S. data

# Variable	Group	Transf	Sign	Source
Gross Domestic Product: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Personal Consumption Expenditures: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Personal Consumption Expenditures: Goods: Price Index (SA, 2012=100)	1	2	1	BEA
PCE: Durable Goods: Chain Price Index (SA, 2012=100)	1	2	1	BEA
PCE: Nondurable Goods: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Personal Consumption Expenditures: Services: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Gross Private Domestic Investment: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Private Fixed Investment: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Private Nonresidential Fixed Investment: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Pvt Nonresidential Fixed Investment: Structures: Chain Price Index(SA, 2012=100)	1	2	1	BEA
Pvt Nonresidential Fixed Investment: Equipment: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Private Residential Fixed Investment: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Exports of Goods & Services: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Imports of Goods & Services: Chain Price Index (SA, 2012=100)	1	2	1	BEA
Govt Consumption Expenditures & Gross Investment: Chain Price Index(SA,2012=100)	1	2	0	BEA
Federal Consumption Expenditures & Gross Invest: Chain Price Index(SA, 2012=100)	1	2	0	BEA
State & Loc Consumption Expenditures & Gross Invest: Price Index (SA, 2012=100)	1	2	0	BEA
Real Gross Domestic Product (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Personal Consumption Expenditures (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Personal Consumption Expenditures: Goods (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Personal Consumption Expenditures: Durable Goods (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Personal Consumption Expenditures: Nondurable Goods (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Personal Consumption Expenditures: Services (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Gross Private Domestic Investment (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Private Fixed Investment (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Private Nonresidential Fixed Investment (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Private Nonresidential Fixed Investment: Structures (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Private Nonresidential Fixed Investment: Equipment (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Private Residential Fixed Investment (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Exports of Goods & Services (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Imports of Goods & Services (SAAR, Bil.Chn.2012$)	2	2	1	BEA
Real Government Consumption Expenditures & Gross Investment(SAAR, Bil.Chn.2012$)	2	2	0	BEA
Real Federal Consumption Expenditures & Gross Investment (SAAR, Bil.Chn.2012$)	2	2	0	BEA
Real State & Local Consumption Expenditures & Gross Invest (SAAR, Bil.Chn.2012$)	2	2	0	BEA
Industrial Production Index (SA, 2017=100)	2	2	1	FRB
Industrial Production: Manufacturing [SIC] (SA, 2017=100)	2	2	1	FRB
Industrial Production: Manufacturing [NAICS] (SA, 2017=100)	2	2	1	FRB
Industrial Production: Durable Goods [NAICS] (SA, 2017=100)	2	2	1	FRB
Industrial Production: Wood Products (SA, 2017=100)	2	2	1	FRB
Industrial Production: Nonmetallic Mineral Products (SA, 2017=100)	2	2	1	FRB
Industrial Production: Primary Metals (SA, 2017=100)	2	2	1	FRB
Industrial Production: Fabricated Metal Products (SA, 2017=100)	2	2	1	FRB

Industrial Production: Machinery (SA, 2017=100)	2	2	1	FRB
Industrial Production: Computer and Electronic Components (SA, 2017=100)	2	2	1	FRB
Industrial Production: Electrical Eqpt, Appliances & Components (SA, 2017=100)	2	2	1	FRB
Industrial Production: Motor Vehicles and Parts (SA, 2017=100)	2	2	1	FRB
Industrial Production: Aerospace & Miscellaneous Transport Equip (SA, 2017=100)	2	2	1	FRB
Industrial Production: Furniture and Related Products (SA, 2017=100)	2	2	1	FRB
Industrial Production: Miscellaneous Durable Goods (SA, 2017=100)	2	2	1	FRB
Industrial Production: Nondurable Manufacturing (SA, 2017=100)	2	2	1	FRB
Industrial Production: Food, Beverages, and Tobacco (SA, 2017=100)	2	2	1	FRB
Industrial Production: Textile and Product Mills (SA, 2017=100)	2	2	1	FRB
Industrial Production: Apparel and Leather Goods (SA, 2017=100)	2	2	1	FRB
Industrial Production: Paper (SA, 2017=100)	2	2	1	FRB
Industrial Production: Printing and Related Support Activities (SA, 2017=100)	2	2	1	FRB
Industrial Production: Petroleum and Coal Products (SA, 2017=100)	2	2	1	FRB
Industrial Production: Chemicals (SA, 2017=100)	2	2	1	FRB
Industrial Production: Plastics and Rubber Products (SA, 2017=100)	2	2	1	FRB
Industrial Production: Other Manufacturing [Non-NAICS] (SA, 2017=100)	2	2	1	FRB
Industrial Production: Mining (SA, 2017=100)	2	2	1	FRB
Industrial Production: Electric and Gas Utilities (SA, 2017=100)	2	2	1	FRB
Capacity Utilization: Industry (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Manufacturing [SIC] (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Manufacturing [NAICS] (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Durable Goods Mfg [NAICS] (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Wood Products (SA, % of Capacity)	2	1	2	FRB
Capacity Utilization: Nonmetallic Mineral Products (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Primary Metal (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Fabricated Metal Product (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Machinery (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Computer and Electronic Products (SA, % of Capacity)	2	1	2	FRB
Capacity Utilization: Elec Eqpt, Appliances & Components (SA, % of Capacity)	2	1	2	FRB
Capacity Utilization: Motor Vehicles and Parts (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Aerospace & Misc Transportation (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Furniture and Related Products (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Miscellaneous Durable Goods (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Nondurable Goods Manufacturing (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Food, Beverage, & Tobacco Products (SA, % of Capacity)	2	1	2	FRB
Capacity Utilization: Textile and Product Mills (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Apparel and Leather (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Paper (SA, Percent of Capacity)	2	1	2	FRB
Capacity Util: Printing & Related Support Activities (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Petroleum and Coal Products (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Chemicals (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Plastics and Rubber Products (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Other Manufacturing [Non-NAICS] (SA, Percent of Capacity)	2	1	2	FRB
Capacity Utilization: Mining (SA, Percent of Capacity)	2	1	2	FRB

Capacity Utilization: Electric and Gas Utilities (SA, Percent of Capacity)	2	1	2	FRB
Civilian Unemployment Rate: 16 yr + (SA, %)	2	0	2	BLS
Civilian Unemployment Rate: Men, 16 Years and Over (SA, %)	2	0	2	BLS
Civilian Unemployment Rate: Women, 16 Years and Over (SA, %)	2	0	2	BLS
Civilian Unemployment Rate: 16-19 Years (SA, %)	2	0	2	BLS
Civilians Unemployed: Job Losers (SA, Thous.)	2	2	2	BLS
Civilians Unemployed: Job Leavers (SA, Thous.)	2	2	2	BLS
Civilians Unemployed: Reentrants (SA, Thous.)	2	2	2	BLS
Civilians Unemployed: New Entrants (SA, Thous.)	2	2	2	BLS
Civilians Unemployed for Less Than 5 Weeks (SA, Thous.)	2	2	2	BLS
Civilians Unemployed for 5-14 Weeks (SA, Thous.)	2	2	2	BLS
Civilians Unemployed for 15 Weeks and Over (SA, Thous.)	2	2	2	BLS
Civilians Unemployed for 15-26 Weeks (SA, Thous.)	2	2	2	BLS
Civilians Unemployed for 27 Weeks and Over (SA, Thous.)	2	2	2	BLS
Unemployed for Less Than 5 Weeks: % of Civilians Unemployed (SA, %)	2	1	2	BLS
Unemployed for 5-14 Weeks: % of Civilians Unemployed (SA, %)	2	1	2	BLS
Unemployed for 15 Weeks and Over: % of Civilians Unemployed (SA, %)	2	1	2	BLS
Unemployed for 15-26 Weeks: % of Civilians Unemployed (SA, %)	2	1	2	BLS
Unemployed for 27 Weeks and Over: % of Civilians Unemployed (SA, %)	2	1	2	BLS
All Employees: Total Nonfarm (SA, Thous)	2	2	1	BLS
All Employees: Total Private Industries (SA, Thous)	2	2	1	BLS
All Employees: Goods-producing Industries (SA, Thous)	2	2	1	BLS
All Employees: Mining and Logging (SA, Thous)	2	2	1	BLS
All Employees: Construction (SA, Thous)	2	2	1	BLS
All Employees: Manufacturing (SA, Thous)	2	2	1	BLS
All Employees: Durable Goods Manufacturing (SA, Thous)	2	2	1	BLS
All Employees: Nondurable Goods Manufacturing (SA, Thous)	2	2	1	BLS
All Employees: Private Service-providing Industries (SA, Thous)	2	2	1	BLS
All Employees: Wholesale Trade (SA, Thous)	2	2	1	BLS
All Employees: Retail Trade (SA, Thous)	2	2	1	BLS
All Employees: Transportation & Warehousing (SA, Thous)	2	2	1	BLS
All Employees: Utilities (SA, Thous)	2	2	1	BLS
All Employees: Information Services (SA, Thous)	2	2	1	BLS
All Employees: Financial Activities (SA, Thous)	2	2	1	BLS
All Employees: Professional & Business Services (SA, Thous)	2	2	1	BLS
All Employees: Education & Health Services (SA, Thous)	2	2	1	BLS
All Employees: Leisure & Hospitality (SA, Thous)	2	2	1	BLS
All Employees: Other Services (SA, Thous)	2	2	1	BLS
All Employees: Government (SA, Thous)	2	2	1	BLS
PPI: Finished Goods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Consumer Goods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Consumer Foods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Consumer Crude Foods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Consumer Processed Foods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Consumer Goods ex Foods (SA, 1982=100)	1	2	1	BLS

PPI: Finished Consumer Nondurable Goods less Foods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Consumer Durable Goods (SA, 1982=100)	1	2	1	BLS
PPI: Finished Goods: Capital Equipment (SA, 1982=100)	1	2	1	BLS
PPI: Capital Equipment: Manufacturing Industries (SA, 1982=100)	1	2	1	BLS
PPI: Capital Equipment: Nonmanufacturing Industries (SA, 1982=100)	1	2	1	BLS
PPI: Intermediate Materials, Supplies and Components (SA, 1982=100)	1	2	1	BLS
PPI: Intermediate Materials for Manufacturing (SA, 1982=100)	1	2	1	BLS
PPI: Intermediate Materials/Components for Construction (SA, 1982=100)	1	2	1	BLS
PPI: Intermediate Materials: Processed Fuels & Lubricants (SA,1982=100)	1	2	1	BLS
PPI:Intermediate Materials: Containers (SA, 1982=100)	1	2	1	BLS
PPI: Intermediate Supplies (SA, 1982=100)	1	2	1	BLS
PPI: Crude Materials for Further Processing (SA, 1982=100)	1	2	1	BLS
PPI: Crude Foodstuffs and Feedstuffs (SA, 1982=100)	1	2	1	BLS
PPI: Crude Nonfood Materials for Further Processing (SA, 1982=100)	1	2	1	BLS
CPI-U: All Items (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Food (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Food at Home (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Cereals and Bakery Products (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Meats, Poultry, Fish and Eggs (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Dairy and Related Products (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Fruits and Vegetables (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Nonalcoholic Beverages (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Other Foods at Home [ex Beverages] (NSA, 1982-84=100)	1	2	1	BLS
CPI-U: Energy (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Energy Commodities (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Fuel Oil (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Motor Fuel (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Gasoline (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Energy Services (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Household Electricity (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Utility [Piped] Gas Service (SA, 1982-84=100)	1	2	1	BLS
CPI-U: All Items Less Food and Energy (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Commodities Less Food & Energy Commodities (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Apparel (SA, 1982-84=100)	1	2	1	BLS
CPI-U: New Vehicles (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Used Cars and Trucks (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Medical Care Commodities (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Alcoholic Beverages (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Tobacco & Smoking Products (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Services Less Energy Services (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Shelter (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Rent of Primary Residence (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Owners' Equivalent Rent of Residences (SA, Dec-82=100)	1	2	1	BLS
CPI-U: Medical Care Services (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Physicians' Services (SA, 1982-84=100)	1	2	1	BLS

CPI-U: Hospital Services (SA, Dec-96=100)	1	2	1	BLS
CPI-U: Transportation Services (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Motor Vehicle Insurance (SA, 1982-84=100)	1	2	1	BLS
CPI-U: Airline Fare (SA, 1982-84=100)	1	2	1	BLS
Business Sector: Unit Labor Cost (SA, 2012=100)	1	2	0	BLS
Nonfarm Business Sector: Unit Labor Cost (SA, 2012=100)	1	2	0	BLS
Manufacturing Sector: Unit Labor Cost (SA, 2012=100)	1	2	0	BLS
Durable Manufacturing: Unit Labor Cost (SA, 2012=100)	1	2	0	BLS
Nondurable Manufacturing: Unit Labor Cost (SA, 2012=100)	1	2	0	BLS
Nonfinancial Corporations: Unit Labor Cost (SA, 2012=100)	1	2	0	BLS
Business Sector: Real Compensation Per Hour (SA, 2012=100)	1	2	0	BLS
Manufacturing Sector: Real Compensation Per Hour (SA, 2012=100)	1	2	0	BLS
Durable Manufacturing: Real Compensation Per Hour (SA, 2012=100)	1	2	0	BLS
Nondurable Manufacturing: Real Compensation Per Hour (SA, 2012=100)	1	2	0	BLS
Nonfinancial Corporations: Real Hourly Compensation (SA, 2012=100)	1	2	0	BLS
Business Sector: Hours of All Persons (SA, 2012=100)	2	2	0	BLS
Nonfarm Business Sector: Hours of All Persons (SA, 2012=100)	2	2	2	BLS
Manufacturing Sector: Hours of All Persons (SA, 2012=100)	2	2	2	BLS
Durable Manufacturing: Hours of All Persons (SA, 2012=100)	2	2	2	BLS
Nondurable Manufacturing: Hours of All Persons (SA, 2012=100)	2	2	2	BLS
Nonfinancial Corporations: Employee Hours (SA, 2012=100)	2	2	2	BLS
Median Usual Wkly Earnings: Full Time Wage & Salary Wkrs(SA, 1982-84 CPI-U Adj$)	1	2	1	BLS
Median Usual Wkly Earn: Full Time Wage & Salary Wkrs: Men(SA, 82-84 CPI-U Adj$)	1	2	1	BLS
Median Usual Wkly Earn: Full Time Wage & Salary Wkr: Women(SA, 82-84 CPI-U Adj$)	1	2	1	BLS
Nonfarm Business Sector: Compensation Per Hour, Index 2012=100, Seasonally Adjusted	1	2	1	BLS
Crude Oil Prices: West Texas Intermediate (WTI) - Cushing, Oklahoma, Dollars per Barrel, Not Seasonally Adjusted	1	0	0	BBG

Notes: Column Transf reports transformation types: 0=level, 1=log level, 2=log diff, 3: diff; Column Sign reports Sign restrictions: 0=no restriction, 1=supply and demand factor loading restrictions, 2=demand factor loading restriction.

Table A.2: Supplementary information on the euro area data

	Country	Group	Transf	Sign
Consumer Price Index (SA, 2015=100)	DE	1	2	1
Total Industry excluding Construction (SA, 2015=100)	DE	1	2	1
GDP Deflator (2010=100)	DE	1	2	1
Gross Domestic Product (SWDA, Mil.Chn.2015.Euros)	DE	2	2	1
Unemployment Rate (%, NSA) - Seasonal Adjustment, All	DE	2	0	2
Federal Government Expenditures (SA, Mil.Euros)	DE	2	2	0
Gross Fixed Capital Formation (SWDA, Mil.Chained.2015.Euros)	DE	2	2	1
Private Consumption Expenditure (SWDA, Mil.Chn.2015.Euros)	DE	2	2	1
Export Price Index (NSA, 2015=100)	DE	1	2	1
Import Price Index (NSA, 2015=100)	DE	1	2	1
Germany: GDP: Exports of Goods & Services (SWDA, Mil.Chn.2015.US$)	DE	2	2	1
Imports of Goods & Services (SWDA, Mil.Chn.2015.US$)	DE	2	2	1
Employed Population Aged 15 and Over (NSA, Mil.Persons)	DE	2	2	1
Total Wages and Salaries (NSA, Mil.EUR) - Seasonal Adjustment, All	DE	1	2	1
Early Estimates of Unit Labor Cost: Total Economy (SA, 2015=100)	DE	1	2	0
Industrial Production: Total Industry ex Construction(SWDA, 2015=100)	DE	2	2	1
Capacity Utilization: Manufacturing (SA, %)	DE	2	1	2
Consumer Prices (2010=100, NSA)	FR	1	2	1
Producer Prices [All Industries] (2010=100)	FR	1	2	1
GDP Deflator (2010=100)	FR	1	2	1
Gross Domestic Product (SWDA, Mil.Chn.2014.Euros)	FR	2	2	1
Unemployment Rate (SA, %)	FR	2	0	2
General Budget Expenditures (SA, Mil.Euros)	FR	2	2	0
Gross Fixed Capital Formation (SWDA, Mil.Chn.2014.Euros)	FR	2	2	1
Household Consumption (SWDA, Mil.Chn.2014.Euros)	FR	2	2	1
Exports [Unit Value]: Total (NSA, 2005=100)	FR	1	2	1
Imports [Unit Value]: Total (NSA, 2005=100)	FR	1	2	1
Exports of Goods & Services (SWDA, Mil.Chn.2014.US$)	FR	2	2	1
Imports of Goods & Services (SWDA, Mil.Chn.2014.US$)	FR	2	2	1
Employed Population Aged 15 and Over (NSA, Mil.Persons)	FR	2	2	1
Labor Force: Over 15 Years (NSA, Mil)	FR	2	2	0
Total Wages and Salaries (NSA, Mil.EUR) - Seasonal Adjustment, All	FR	1	2	1
Early Estimates of Unit Labor Cost: Total Economy (SA, 2015=100)	FR	1	2	0
Industrial Production excluding Construction (SWDA, 2015=100)	FR	2	2	1
Capacity Utilization: Total Industry (SA, %)	FR	2	1	2
Consumer Prices (2010=100, NSA)	IT	1	2	1
Producer Prices (2010=100, NSA)	IT	1	2	1
GDP Deflator (2010=100)	IT	1	2	1
Gross Domestic Product (SWDA, Mil.Chn.2015.EUR)	IT	2	2	1
Unemployment Rate (%, NSA) - Seasonal Adjustment, All	IT	2	0	2

Central Government Expenditures (SA, Mil.Euros)	IT	2	2	0
Gross Fixed Investment (SWDA, Mil.Chn.2015.EUR)	IT	2	2	1
Private Consumption Expenditure (SWDA, Mil.Chn.2015.EUR)	IT	2	2	1
Exports [Unit Value Index] (NSA, 2015=100)	IT	1	2	1
Imports [Unit Value Index] (NSA, 2015=100	IT	1	2	1
Exports of Goods and Services(SWDA, Mil.Chn.2015.US$)	IT	2	2	1
Imports of Goods and Services(SWDA, Mil.Chn.2015.US$)	IT	2	2	1
Employed Population Aged 15 and Over (NSA, Mil.Persons)	IT	2	2	1
Labor Force SUSPENDED (NSA, Mil)	IT	2	2	0
Total Wages and Salaries (NSA, Mil.EUR) - Seasonal Adjustment, All	IT	1	2	1
Early Estimates of Unit Labor Cost: Total Economy (SA, 2015=100)	IT	1	2	0
Total Industry excl Construction (SWDA, 2015=100)	IT	2	2	1
Consumer Prices (2010=100, NSA)	ES	1	2	1
Industrial Prices (2010=100, NSA)	ES	1	2	1
GDP Deflator (2010=100)	ES	1	2	1
Gross Domestic Product (NSA, Mil.Ch.15.EUR) - Seasonal Adjustment, All	ES	2	2	1
Unemployment Rate (%, NSA) - Seasonal Adjustment, All	ES	2	0	2
Central Government Expenditures (SA, Mil.Euros)	ES	2	2	0
Gross Fixed Capital Formation (SWDA, Mil.Chn.2015.Euros)	ES	2	2	1
Private Consumption Expenditure (SWDA, Mil.Chn.2015.Euros)	ES	2	2	1
Export Price Index (NSA, 2005=100)	ES	1	2	1
Import Price Index (NSA, 2005=100)	ES	1	2	1
Exports of Goods & Services (SWDA, Mil.Chn.2015.US$)	ES	2	2	1
Imports of Goods & Services (SWDA, Mil.Chn.2015.US$)	ES	2	2	1
Employed Population Aged 15 and Over (NSA, Mil.Persons)	ES	2	2	1
Total Labor Force (NSA, Mil)	ES	2	2	0
Total Wages and Salaries (NSA, Mil.EUR) - Seasonal Adjustment, All	ES	1	2	1
Early Estimates of Unit Labor Cost: Total Economy (SA, 2015=100)	ES	1	2	0
Industrial Production excluding Construction (SWDA, 2015=100)	ES	2	2	1
Consumer Prices Index (2010=100)	XM	1	2	1
Domestic PPI: Industry excluding Construction (SA, 2015=100)	XM	1	2	1
GDP Deflator (2010=100)	XM	1	2	1
Gross Domestic Product (SWDA, Mil.Chn.2015.EUR)	XM	2	2	1
Unemployment Rate (%) - Seasonal Adjustment, All	XM	2	0	2
Gross Fixed Capital Formation (SWDA, Mil.Ch.2015.Euros)	XM	2	2	1
Priv Consumption Expenditure(SWDA,Mil.Chn.2015.EUR)	XM	2	2	1
Export Prices: Total (NSA, 2015=100)	XM	1	2	1
Import Prices: Total (NSA, 2015=100)	XM	1	2	1
Exports of Goods and Services(SWDA, Mil.Chn.2015.US$)	XM	2	2	1
Imports of Goods and Services(SWDA, Mil.Chn.2015.US$)	XM	2	2	1
Employed Population Aged 15 and Over (NSA, Mil.Persons)	XM	2	2	1
Labor Force: 15 Years and Over (NSA, Mil)	XM	2	2	0
Total Wages and Salaries (NSA, Mil.EUR) - Seasonal Adjustment, All	XM	1	2	1

Early Estimates of Unit Labor Cost: Total Economy (SA, 2015=100)	XM	1	2	0
Industry excluding Construction (SWDA, 2015=100)	XM	2	2	1

Notes: Column Transf reports transformation types: 0=level, 1=log level, 2=log diff, 3: diff; Column Sign reports Sign restrictions: 0=no restriction, 1=supply and demand factor loading restrictions, 2=demand factor loading restriction.