

# Energy Crisis, Growth, Public Finance, Social Norms in Italy

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## Are EU Policies Effective to Tackle the Covid-19 Crisis? The Case of Italy

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### ABSTRACT

In response to the economic crisis unleashed by the Covid-19 pandemic, the EU authorities have launched extraordinary fiscal and monetary measures in support of member states. The impact of these measures is of great significance for Italy, the EU third-largest economy, which as a result of the pandemic has suffered a dramatic decline in GDP, and a further rise in the government debt to GDP ratio. Building on a stock-flow consistent, structural macroeconomic model, this paper shows that the currently planned EU measures are insufficient to boost the recovery of the Italian economy, and to ensure the sustainability of its government debt. The paper also assesses two potential alternative policies. A fiscal consolidation (i.e. austerity) policy would exacerbate the decline in GDP and further deteriorate the government debt to GDP ratio. By contrast, a money-financed fiscal stimulus policy could lead the Italian economy on a path of sustainable growth, with positive outcomes for employment and government finances.

### ARTICLE HISTORY

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### KEYWORDS

Covid-19; Next Generation EU; government debt sustainability; Italy; SFC model; money-financed fiscal policy

### JEL CLASSIFICATION

E17; S2; E62; E63; H68

## Is the Italian government debt sustainable? Scenarios after the Covid-19 shock

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The sustainability of the Italian government debt has been under close scrutiny since the launch of the Euro Area, and even more so after the Global Financial Crisis. The Covid-19 crisis in 2020 has depressed the Italian economy further and negatively affected the government budget. Despite the rebound in 2021, the state of the economy and government debt in Italy remain precarious. Building on Pasinetti's work, this paper examines the sustainability of the Italian government debt through a medium-scale, stock-flow consistent, structural macroeconomic model. The model has been coded and calibrated using the R package *Bimets* developed by the Bank of Italy. Our findings show that the Italian government debt is unlikely to enter a sustainable trajectory in the next few years. While the Next Generation EU and the other fiscal and monetary measures are helping the Italian economy to recover, in the coming years, a greater effort on the part of the European authorities—including an intervention of the ECB in controlling the yield curve—seems necessary to stabilize the debt to GDP ratio in Italy.

*Key words:* Government debt sustainability, Covid-19, Italy, ECB, EU

*JEL classifications:* E17, E52, E63, H68.

# Motivations and research questions

- ▶ Italy is the third-largest economy in the European Union after Germany and France. Italy has also the second-highest government debt-to-GDP ratio in the EU after Greece
- ▶ Italian economy has been under close scrutiny since the 2007-2008 Global Financial Crisis (GFC)
- ▶ Italy has struggled to comply with the budgetary discipline recommended by the European Commission
- ▶ The Covid-19 crisis has depressed the Italian economy further
- ▶ The surge of inflation in 2022 due to the rising costs of energy sources has had a significant negative impact on the Italian economy
- ▶ We assess the impact of the energy crisis on the Italian economy in terms of long-run sustainability of both its government debt/GDP ratio and economic growth
- ▶ We speculate the implications of the analysis in terms of social norms

# Methodology

Medium-scale Stock  
Flow Consistent  
(SFC) macro-  
econometric model

Approach: theory to  
data (TTD)

Structure: six  
sectors (households,  
firms, banks,  
government, ECB,  
foreign)

Size: 110 equations,  
52 identities, 36  
behavioural, 22  
auxiliary

Data: Eurostat, FA  
and NFA, annual,  
1998-2022

Software: R, Bimets  
package (Bank of  
Italy)

# Methodology

- ▶ Theoretical framework, behavioural equations
- ▶ Reclassification of *Eurostat* data
- ▶ Create Transactions-Flow Matrix (TFM) and Balance-Sheet Matrix (BSM)
- ▶ *Bimets* package to estimate coefficients and produce in-sample predictions, out-of-sample predictions (up to 2028)
- ▶ Baseline in line with prediction of national and international institutions
- ▶ Alternative scenarios, compared with baseline dynamics

# Balance-sheet matrix of Italian economy

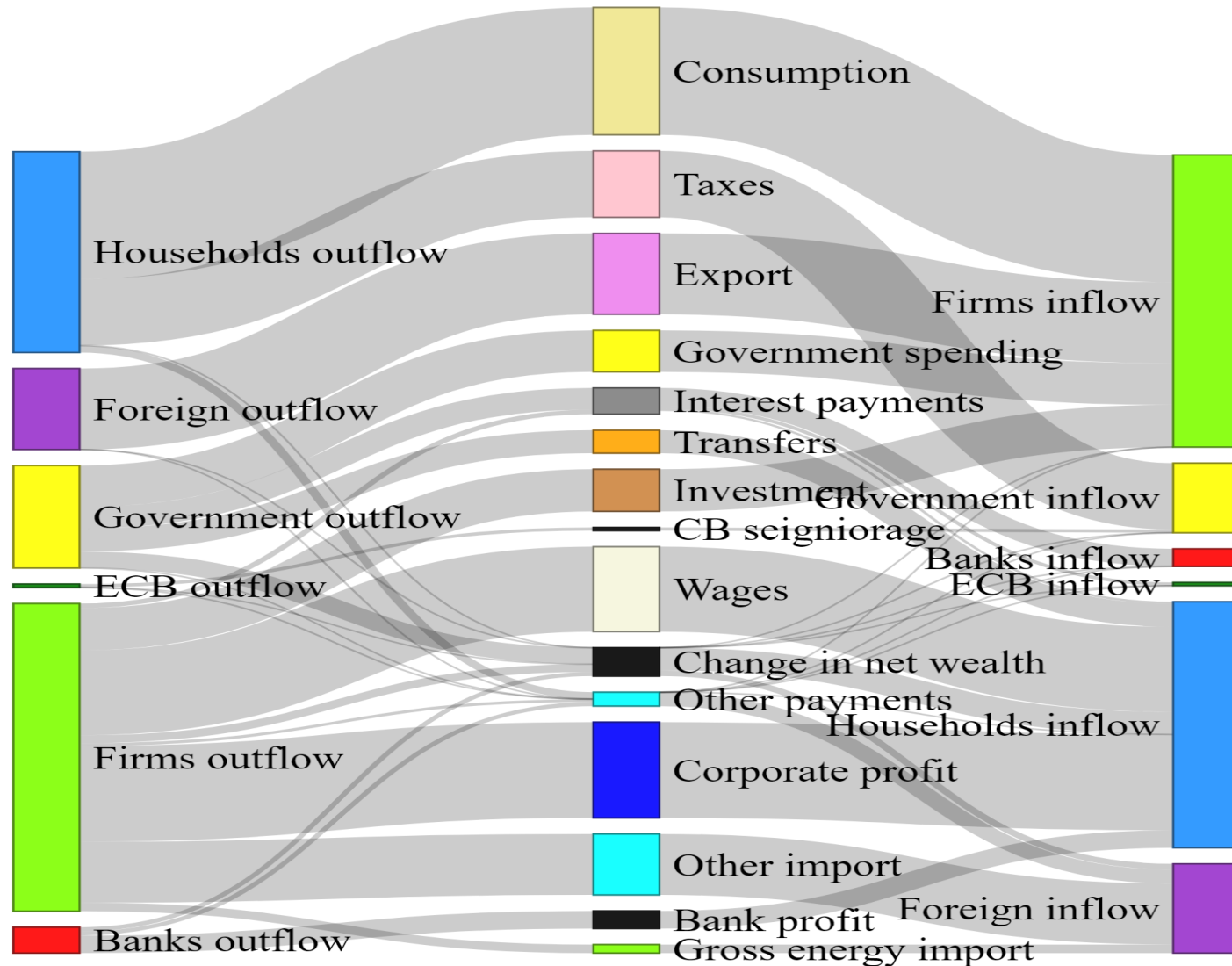
(million euro, current prices)

	Households	Firms	Government	Banks	ECB	Foreign	Row total
Cash and reserves	200683			10817	-211500		0
Deposits	1428434			-1428434			0
Securities	233263		-2678397	1366294	868289	210551	0
Loans	-763488	-871902		1635390			0
Shares	1372850	-1372850					0
Other net FA	1583746	284629	323282	-1563895	-783662	155900	0
Net financial wealth	4055488	-1960123	-2355115	20172	-126873	366451	0
Column total	0	0	0	0	0	0	0

# Transactions-flow matrix of Italian economy, (million euro, current prices)

	Households	Firms		Government	Banks	ECB	Foreign	Row total
		Current	Capital					
Consumption	-1030124	1030124						0
Total investment		357215	-357215					0
Government spending		352718		-352718				0
Export		582192					-582192	0
Energy import		-64859					64859	0
Other import		-475339					475339	0
[GDP]		1782051						
Taxes	-483366			483366				0
Transfers	188601			-188601				0
Wages	692915	-692915						0
Interest payments	10905	-2326		-60678	29134	13200	9765	0
Corporate profit	738858	-1141970	403112					0
Bank profit	29134				-29134			0
ECB seigniorage				13199.6451		-13200		0
Other payments	-60675	55160		275576.588	-151307	-5171	-113584	0
Change in cash and reserves	15250				-657	-14593		0
Change in deposits	57376				-57376			0
Change in securities	-30072			-105432	-77658	103317	109845	0
Change in loans	-27196		169601		-142405			0
Change in shares	138716		-138716					0
Change in other net FA	-67825		15012	275577	126789	-93895	-255658	0
Change in net wealth	86249		45897	170145	-151307	-5171	-145813	0
Column total	0		0	0	0	0	0	0

# Sankey diagram of transactions



# Economic Forecasts of GDP components, inflation, and government balances in Italy, (2023-2028)

	Italian Government September 2023 <sup>1</sup>				IMF October 2023 <sup>2</sup>		European Commission November 2023 <sup>3</sup>			Bank of Italy October 2023 <sup>4</sup>			OECD November 2023 <sup>5</sup>			ISTAT December 2023 <sup>6</sup>		Our Model (Baseline scenario)					
Variable/ period	2023	2024	2025	2026	2023	2024	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2023	2024	2025	2026	2027	2028
Annual growth rates (%)																							
GDP	0.8	1.2	1.4	1.0	0.7	0.7	0.7	0.9	1.2	0.7	0.8	1.0	0.7	0.7	1.2	0.7	0.7	0.8	0.8	0.9	0.8	1.0	1.2
Consumption	1.3	1.3	1.1	1.0	1.4	1.1	1.3	0.9	1.0	1.3	0.9	1.0	1.2	0.7	1.0	1.4	1.0	1.0	0.7	1.3	0.9	1.0	1.5
Investment	1.0	3.0	2.4	1.9	1.1	2.8	0.5	0.3	1.3	0.5	0.3	1.3	0.8	0.5	1.6	0.6	0.6	0.5	0.8	1.0	1.0	1.0	1.0
Import	0.1	3.3	4.1	3.6	2.2	2.8	1.1	2.3	3.1	1.1	2.3	3.1	1.0	0.9	1.2	0.3	2.0	0.9	2.2	2.6	2.4	2.1	2.0
Export	0.7	2.4	4.3	3.5	2.2	2.8	0.4	2.4	3.1	0.4	2.4	3.1	0.4	1.3	2.0	0.0	2.1	0.7	2.3	2.0	1.9	1.9	1.9
GDP deflator	4.5	2.9	2.1	2.1	6.2	3.6	4.5	2.8	3.7	4.5	2.8	3.7	4.2	2.9	2.6	4.9	2.8	4.3	3.0	2.6	2.2	2.0	1.4
HICP/Consumer price	5.6	2.3	2.0	2.1	6.0	2.6	6.1	2.7	2.3	6.1	2.4	1.9	6.1	2.6	2.3	5.4	2.5	8.8	2.3	2.3	1.2	1.2	1.2
Government balance ratios (%)																							
Deficit to GDP	5.3	4.3	3.6	2.9	5.0	4.0	5.3	4.4	4.3	-	-	-	5.4	4.2	3.6	-	-	6.2	4.9	4.8	5.3	5.7	6.2
Debt to GDP	140.2	140.1	139.9	139.6	143.7	143.2	139.8	140.6	140.9	-	-	-	141.4	131.4	140.5	-	-	144.0	143.6	143.4	144.4	145.8	148.1

# Baseline and Alternative Scenarios

	2023	2024	2025	2026	2027	2028
GDP	0.8	0.8	0.9	0.8	1.0	1.2
Import	0.9	2.2	2.6	2.4	2.1	2.0
Export	0.7	2.3	2.0	1.9	1.9	1.9
GDP deflator	4.3	3.0	2.6	2.2	2.0	1.4
CPI	8.8	2.3	2.3	1.2	1.2	1.2
Deficit to GDP	6.1	4.9	4.8	5.2	5.7	6.2
Debt to GDP	144.0	143.6	143.4	144.3	145.8	148.1
Policy rate	3.8	3.0	2.5	2.5	2.5	2.5
Av. yield on gov. debt	2.7	2.8	3.0	3.2	3.3	3.4

	2023	2024	2025	2026	2027	2028
GDP	0.8	0.7	0.1	-0.8	-1.8	-2.5
Import	0.9	2.2	3.2	2.5	1.8	0.9
Export	0.7	2.3	2.1	2.0	2.0	2.0
GDP deflator	4.3	3.9	3.4	3.3	3.0	2.3
CPI	8.8	5.0	5.0	4.9	4.8	4.7
Deficit to GDP	6.1	5	5	5.8	6.9	8.4
Debt to GDP	144.0	142.7	142.7	145.1	150.4	159.3
Policy rate	3.8	3	2.5	2.5	2.5	2.5
Av. yield on gov. debt	2.7	2.8	2.9	3.2	3.3	3.5

## #Baseline:

Energy price level  
ECB main refinancing rate

## #Scenario 1: PERSISTENT INFLATION

This is the baseline with the assumption that the energy-led price shock has a more persistent effect on inflation

# Alternative scenarios

	2023	2024	2025	2026	2027	2028
GDP	0.8	-0.45	-1.0	-1.8	-2.4	-2.4
Import	0.9	2.2	2.4	1.7	1.0	0.4
Export	0.7	2.3	2.1	2.0	2.0	2.0
GDP deflator	4.3	3.9	3.3	3.2	2.9	2.3
CPI	8.8	5.0	4.9	4.8	4.7	4.7
Deficit to GDP	6.1	6.4	6.8	7.7	8.8	10.1
Debt to GDP	144.0	145.7	149.3	155.1	163.3	173.8
Policy rate	3.8	4.5	4.5	4.5	4.5	4.5
Av. yield on gov. debt	2.7	3.7	4.1	4.4	4.6	4.7

## #Scenario 2: PERSISTENT INFLATION + HIGHER POLICY RATE

The baseline is hit by two shocks, namely a persistent inflation rate and a robust policy response by the ECB, which keeps the policy rate at 4.5% over the 2024-2028 period

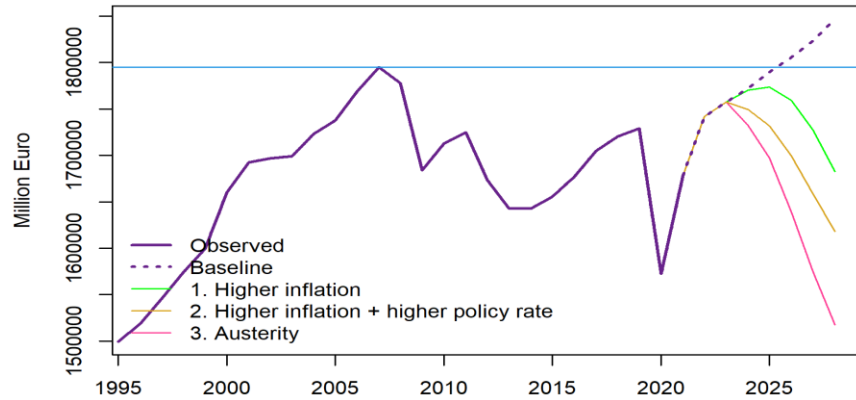
	2023	2024	2025	2026	2027	2028
GDP	0.8	-1.4	-2.0	-3.4	-3.9	-3.6
Import	0.9	2.2	1.2	0.3	-0.8	-1.4
Export	0.7	2.3	2.0	1.9	1.9	1.9
GDP deflator	4.3	3.0	2.3	1.9	1.5	0.9
CPI	8.8	2.3	2.1	0.9	0.8	0.7
Deficit to GDP	6.1	3.0	3.0	3.0	3.0	3.0
Debt to GDP	144.0	144.9	147.5	152.9	159.8	167.3
Policy rate	3.8	3	2.5	2.5	2.5	2.5
Av. yield on gov. debt	2.7	2.9	3.2	3.5	3.8	4.1

## #Scenario 3: AUSTERITY (FROM BASELINE)

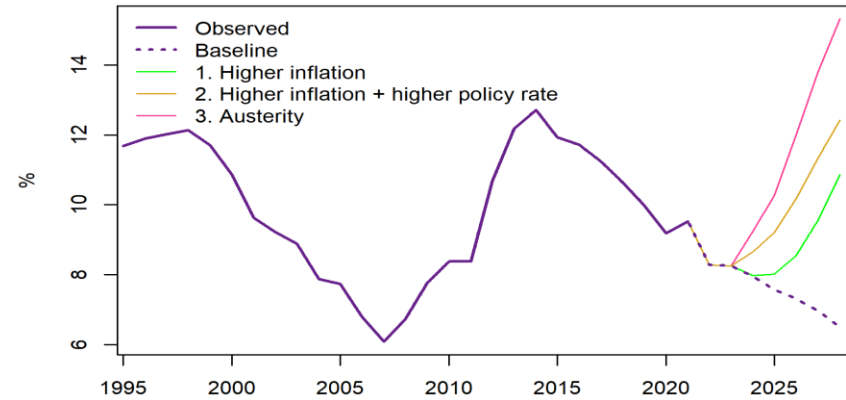
This simulates policy austerity measures implemented by the fiscal authorities in Italy.  
Deficit at 3%

# Results: Overall Economy (1995-2028)

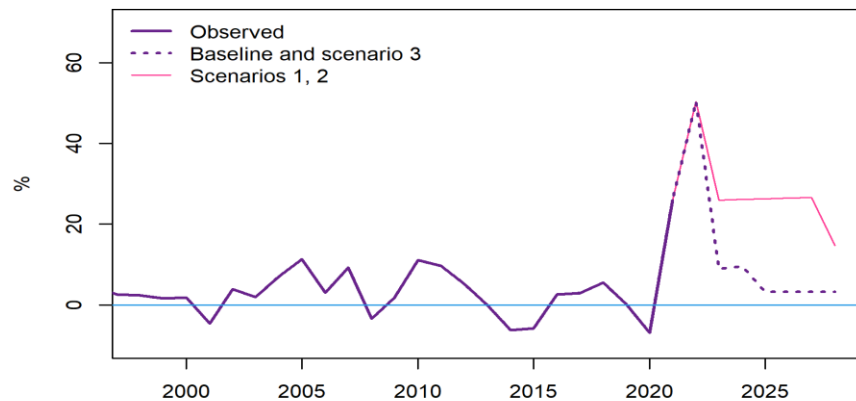
(a) Real GDP (constant prices, 2015=100)



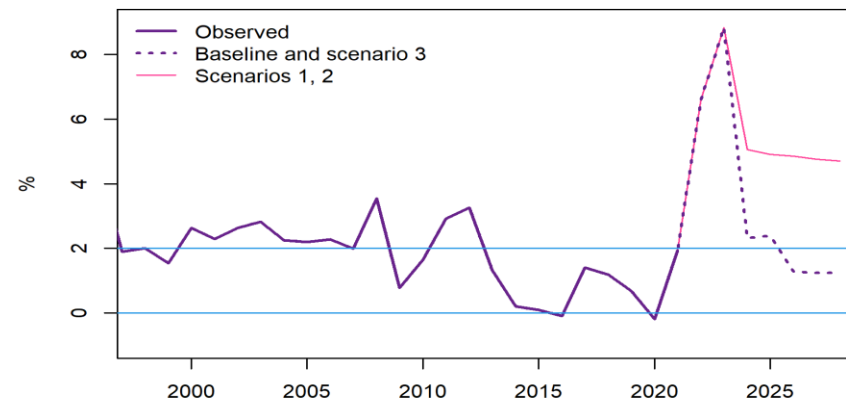
(b) Unemployment rate



(c) Energy inflation rate

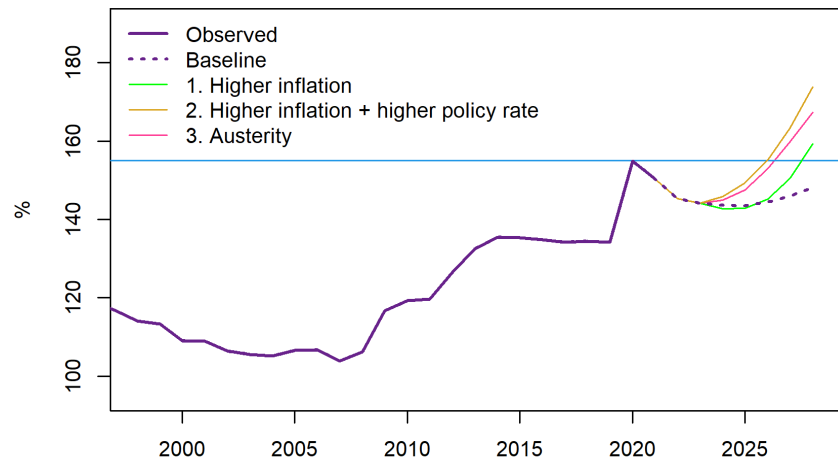


(d) Inflation rate (% change in CPI)

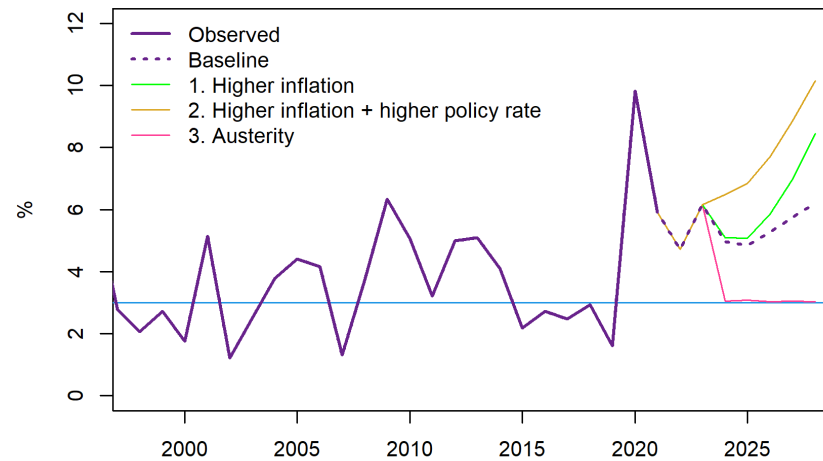


# Results: Public Finance (1995-2028)

(a) Government debt to GDP ratio



(b) Government deficit to GDP ratio



# Final remarks

- ▶ Italy is the third-largest economy in the EU after Germany and France. Italy has also the second-highest government debt-to-GDP ratio in the EU after Greece. The Italian economy was hit hard by the 2007-2008 GFC and by the Covid-19 pandemic
- ▶ This paper has assessed the impact of the current energy crisis on the Italian economy
- ▶ It has used an original methodology, i.e. a medium-scale, stock-flow consistent (SFC), structural macro-econometric model. Estimations and in-sample simulations cover 1995 to 2022 period, whereas (out-of-sample) predictions up to 2028
- ▶ Given its structural features and the current energy crisis, the Italian economy is on the edge of a precipice
- ▶ Soft landing (baseline): low inflation environment ( $\cong 2\%$ ), but at the cost of anaemic growth ( $\cong 1\%$ ) and dire public finance ( $\text{GovDebt/GDP} \cong 145\%$ ,  $\text{GovDef/GDP} \cong 6\%$ )
  - ▶ This may trigger punitive measures by the EU authorities
- ▶ Hard landing: moderate inflation environment ( $\cong 5\%$ ) or tolerable  $\text{GovDef/GDP}$  ( $\cong 3\%$ ), but at the cost of severe and prolonged recession and ballooning  $\text{GovDebt/GDP}$ 
  - ▶ This may trigger domestic politic unrest and anti-EU policies