Fiscal Sustainability and the Green Transition: Could Italy Meet the EU Climate Goals?

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- The EU has launched the European Green Deal, aiming to achieve climate neutrality by 2050, while boosting the economies of its member states through green technological innovation.
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- Our work analyses the effects of such measures on the Italian economy by using an IO-SFC model.

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- The model was coded using *Bimets* (*R*), and coefficients were estimated/calibrated using *Eurostat* data on an annual basis.
- The model has been employed to create and compare various policy scenarios and shocks.

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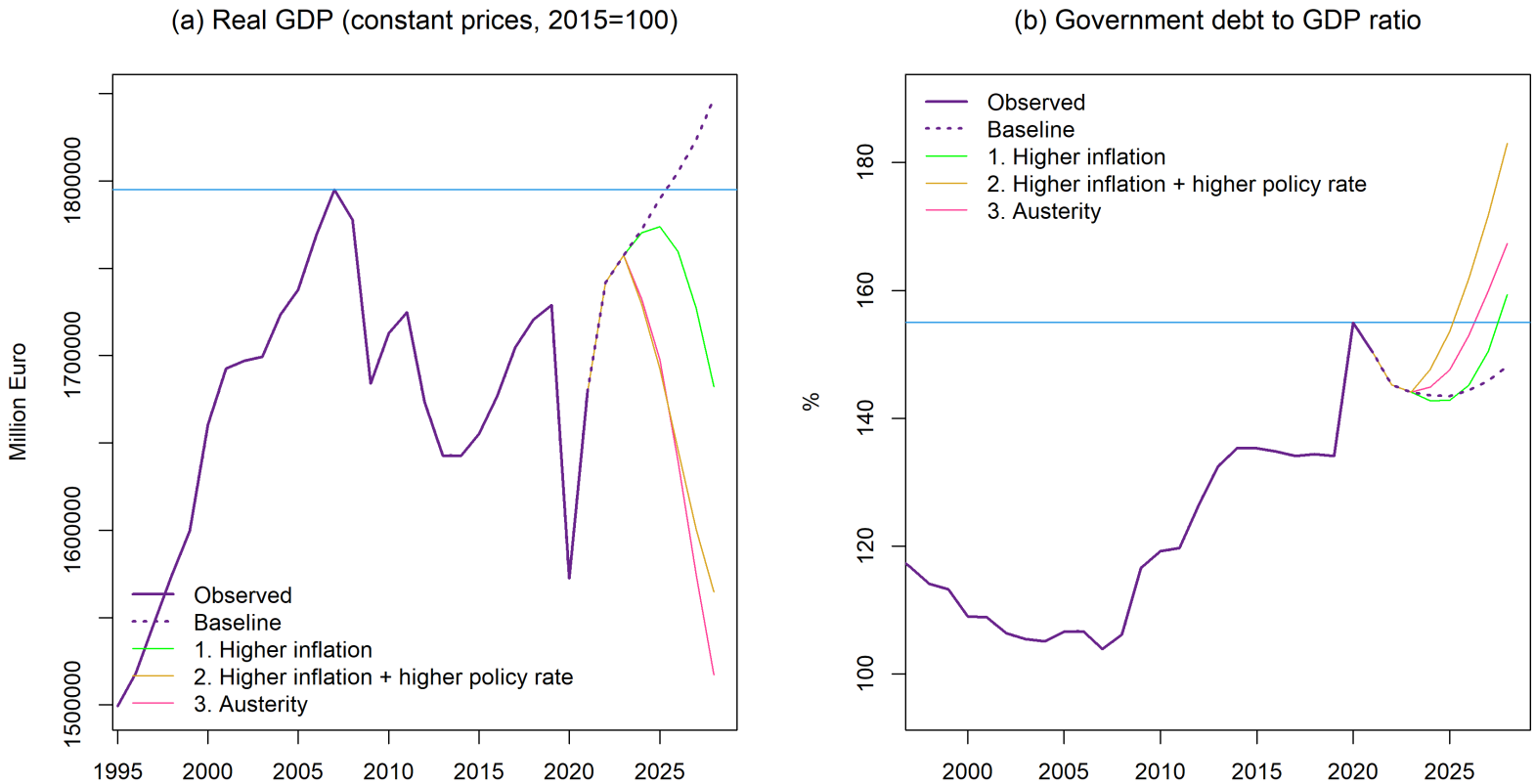
- A soft landing scenario predicts moderate inflation and growth but also forecasts dire public finances.
- A hard landing scenario predicts recession and escalating public debt, exacerbated by austerity measures.

Figure 1. Selected findings



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- The model underestimates the role of income and wealth distribution.
- The balance-sheet entry 'Other net financial assets' is excessively large.
- The model does not consider cross-industry interdependencies, i.e., the input-output structure of the economy.

A new model: preliminary insights

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- All main assets and liabilities are included, except for housing capital, derivatives, and private equity (replaced by private securities).
- The model is coded with *R*, and a new modeling technique is being employed using 3- and 4-dimensional matrices (periods, scenarios, industries $\times$ 2).

Table 1. The balance-sheet matrix

	Workers	Rentiers	Firms	Government	Banks	CB	Foreign sector	Total
Cash and reserves	0.18	0.21	0	0	0.11	-0.5	0	0
Deposits	2.91	16.16	0	0	-19.07	0.0	0	0
Loans	-0.85	-3.66	-3.92	0	8.44	0	0	0
Advances	0	0	0	0	0	0	0	0
T-bills	0.14	2.95	0	-16.95	10.52	0.5	2.84	0
Domestic securities	0	4.84	-4.84	0	0	0	0	0
Foreign securities	0.02	0.21	0	0	0	0	-0.23	0
Capital stock	0	0	8.77	0	0	0	0	8.77
Net financial wealth	-2.41	-20.70	0	16.95	0	0	-2.61	-8.77
Total	0	0	0	0	0	0	0	0

Table 2. The transactions-flow matrix

	Households		Firms		Government	Banks	CB	Foreign	Total
	Workers	Rentiers	Current	Capital					
Consumption	-15.41	-18.78	34.19	0	0	0	0	0	0
Investment	0	0	14.07	-14.07	0	0	0	0	0
Government spending	0	0	6.81	0	-6.81	0	0	0	0
Export	0	0	2.85	0	0	0	0	-2.85	0
Import	0	0	-3.09	0	0	0	0	3.09	0
[Value added]	0	0	[54.83]	0	0	0	0	0	0
Wages	19.69	8.44	-28.13	0	0	0	0	0	0
Deprec. / Amort.	0	0	-8.75	8.75	0	0	0	0	0
Firms profit	0	13.82	-13.82	0	0	0	0	0	0
Banks profit	0	2.69	0	0	0	-2.69	0	0	0
Tax revenue	-3.03	-2.87	0	0	5.90	0	0	0	0
Interests on reserves	0	0	0	0	0	0.01	-0.01	0	0
Interests on deposits	0.89	2.34	0	0	0	-3.23	0	0	0
Interests on loans	-0.75	-1.38	-3.05	0	0	5.17	0	0	0
Interests on advances	0	0	0	0	0	0	0	0	0
Interests on T-bills	0.05	0.49	0	0	-1.82	0.74	0.09	0.44	0
Interests on domestic sec.s	0	1.09	-1.09	0	0	0	0	0	0
Interests on foreign sec.s	0.01	0.03	0	0	0	0	0	-0.04	0
Seigniorage income	0	0	0	0	0.08	0	-0.08	0	0
Change in cash and reserves	-0.05	-0.03	0	0	0	-0.09	0.17	0	0
Change in deposits	-2.82	-5.66	0	0	0	8.48	0	0	0
Change in loans	1.54	2.19	0	3.87	0	-7.60	0	0	0
Change in advances	0	0	0	0	0	0	0	0	0
Change in T-bills	-0.11	-0.88	0	0	2.66	-0.79	-0.17	-0.71	0
Change in domestic sec.s	0	-1.45	0	1.45	0	0	0	0	0
Change in foreign sec.s	-0.01	-0.06	0	0	0	0	0	0.07	0
Total	0	0	0	0	0	0	0	0	0

Table 3. The input-output matrix

	Agriculture	Manufacturing	Services	Final demand	Output
Agriculture (production)	4.96	4.40	3.37	6.64	19.37
Manufacturing (production)	3.14	13.92	13.33	19.61	50
Services (provision)	1.98	8.77	26.87	28.59	66.21
Value added	9.77	24.46	23.61	54.83	
– Labour incomes	4.28	7.02	7.27		
– Capital incomes	5.48	17.44	16.34		
Output	19.85	51.54	67.18		138.58

Figure 2. Transactions-flow across sectors

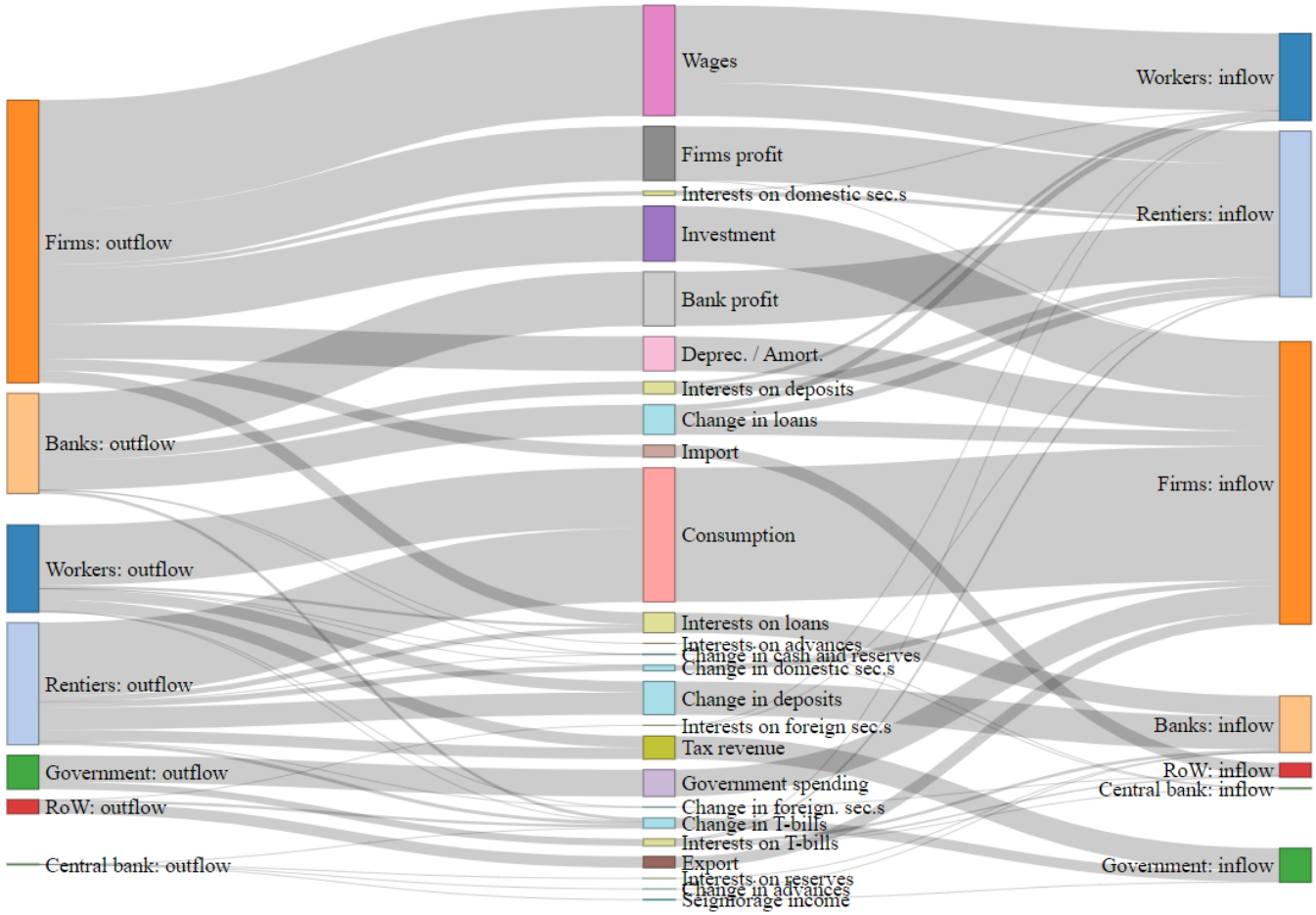


Figure 3. Cross-industry interdependencies

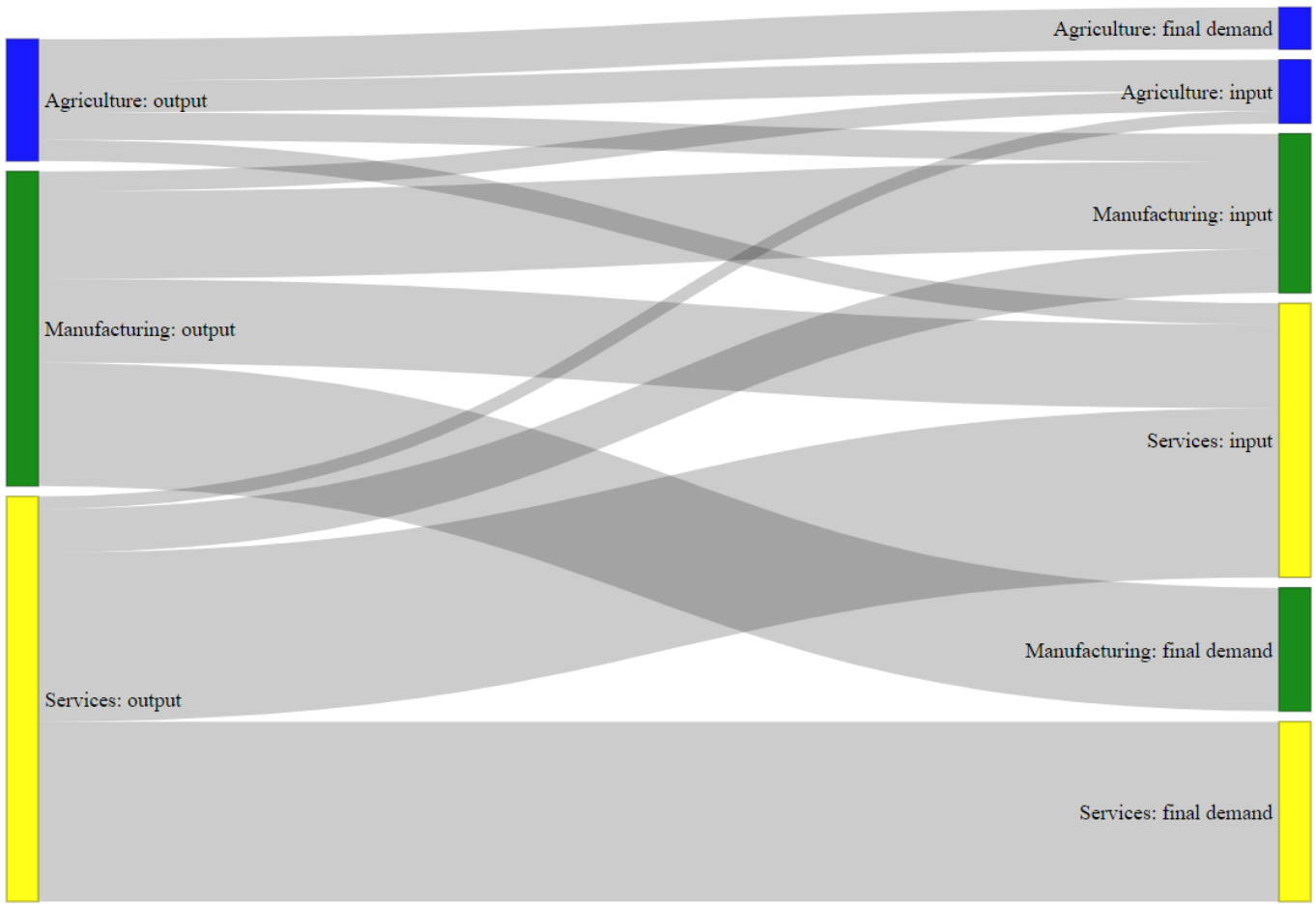
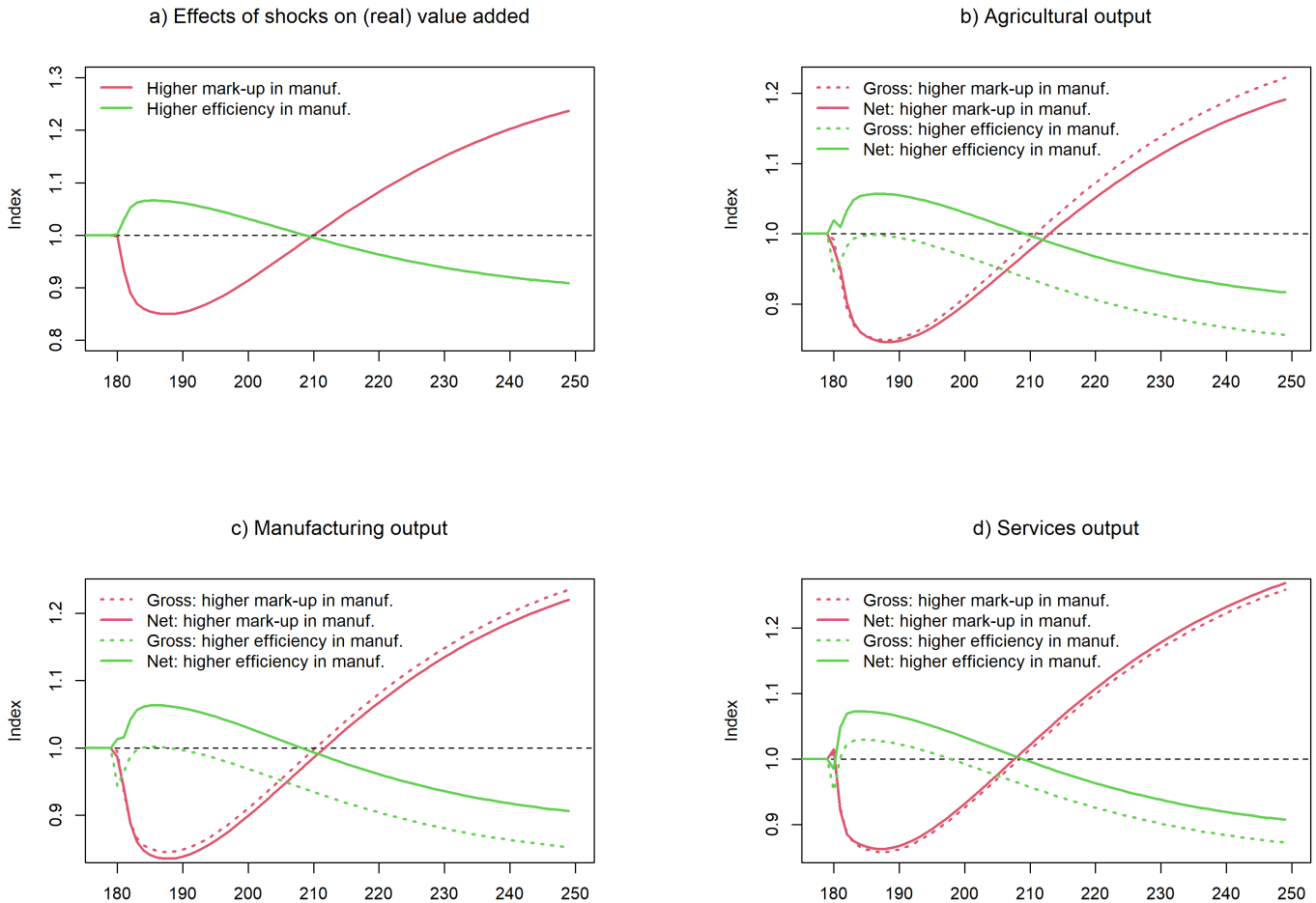


Figure 4. Model dynamics



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Next steps:

1) Increase the granularity of the analysis by adding more industries...
2) Calibrate the model based on Italian time series and IO data.
3) Use the model to identify the theoretical conditions that would enable Italy to meet the climate goals (to be compared with the baseline scenario).

Thank you

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