Fiscal Consolidation in a Monetary Union with Heterogeneous Agents

by François Langot Jocelyn Maillard Fabien Tripier Jean-Olivier Hairault

Discussion by Rustam Jamilov
University of Oxford and CEPR

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- Three key ingredients of the model
  1. **Fiscal taxonomy and multipliers**: Farhi-Werning '16, Hagedorn-Manovski-Mitman '19, Ferriere-Navarro '25
  2. **Household heterogeneity**: Galí-López-Salido-Vallés '07, Bilbiie '08 '21 '25, McKay and Reis '16, Kaplan-Moll-Violante '18, Auclert '19, Luetticke '20, Ravn and Sterk '21, Auclert-Rognlie-Straub '24, Bayer-Born-Luetticke '24
  3. **International**: Galí-Monacelli '05, de Ferra-Mitman-Romei '20, Aggarwal-Auclert-Rognlie-Straub '23, Bayer-Kriwoluzky-Müller-Seyrich '24, Acharya-Challe '25, Bellifemine-Couturier-Jamilov '25

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- Novel insight: the **total** fiscal multiplier
  - Output response per actual budget surplus adjustment, not per fiscal policy change
  - Ten alternative revenue- and expenditure-based instruments
  - Three main outcomes: output, trade balance, inequality

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  - Output response per actual budget surplus adjustment, not per fiscal policy change
  - Ten alternative revenue- and expenditure-based instruments
  - Three main outcomes: output, trade balance, inequality
- Main finding (for now): substantial heterogeneity across the instruments

COMMENT 1: TAX SYSTEM PROGRESSIVITY

- Canonical tax function: $Tax(z) = (1 - \tau_p)z^{1-\Upsilon}$ (Heathcote-Storesletten-Violante '17)
- Currently, calibrated to target a cross-sectional moment

Micro parameters	Values		Targets
	France	Euro Area	
Low-skill persistence of productivity ρ_l	0.967	0.967	Average productivity persistance of 0.966
High-skill persistence of productivityl ρ_h	0.965	0.965	Average productivity persistance of 0.966
Low-skill productivity variance σ_l	0.32	0.32	Matching the gross income distribution
High-skill productivity variance σ_h	0.55	0.55	Matching the gross income distribution
Beveridgian transfer rule parameter a_b in $\bar{T}_b(e) = e^{a_b}$	-0.88	-0.88	Matching the distribution of Beveridgian transfers
Pensions transfer rule parameter a_r in $\bar{T}_r(e) = e^{a_r}$	0.72	0.72	Matching the replacement rate
Unemployment insurance transfer rule parameter a_y in $\bar{T}_y(e) = e^{a_y}$	0.2	0.2	
Progressivity of the income tax λ	0.24	0.24	Matching the consumption distribution

Source: Langot-Maillard-Tripier-Hairault '25

Comment 1: Tax System Progressivity

- Canonical tax function: $\text{Tax}(z) = (1 - \tau_p)z^{1-\gamma}$ (Heathcote-Storesletten-Violante '17)
- Currently, calibrated to target a cross-sectional moment
- But in practice, γ_t is time-varying and is a key fiscal instrument by itself

Figure 12: U.S. Federal Income Tax Progressivity

Source: Ferriere-Navarro '25

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- Canonical tax function: $\text{Tax}(z) = (1 - \tau_p)z^{1-\gamma}$ (Heathcote-Storesletten-Violante '17)
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- Time-varying progressivity drives the fiscal multiplier

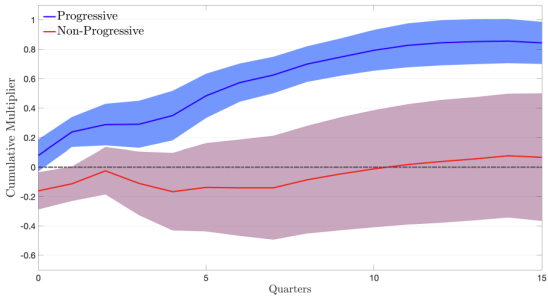

Figure 14: Progressivity-Dependent Cumulative Multipliers

Source: Ferriere-Navarro '25

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- Canonical tax function: $\text{Tax}(z) = (1 - \tau_p)z^{1-\gamma}$ (Heathcote-Storesletten-Violante '17)
- Currently, calibrated to target a cross-sectional moment
- If relevant for US, could be for France too

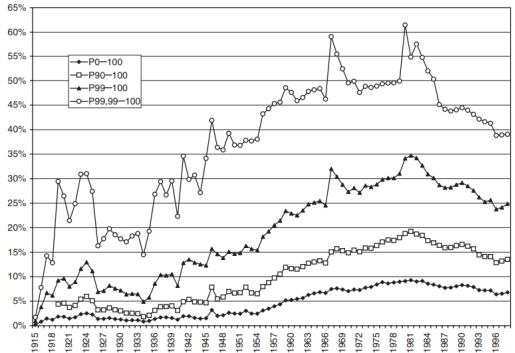

Figure 3.6 Effective average income tax rates in France, 1915–98

Source: Piketty '03

Comment 2: Labor Supply

- Currently, all within-skill-type agents work the same hours

COMMENT 2: LABOR SUPPLY

- In practice, labor participation elasticity varies across the distribution

Wealth quintile	1	2	3	4	5
mpc quarterly	0.57	0.11	0.06	0.03	0.01
mpc annual	0.65	0.29	0.21	0.11	0.04

Table 3: Marginal Propensities to Consume

Note: Households are sorted by wealth. See text and Appendix A.3 for more details.

Income quintile	1	2	3	4	5
lpe	0.75	0.25	0.23	0.18	0.04
lpe^{τ}	1.03	0.56	0.23	0.14	0.03

Table 4: Labor Participation Elasticities

Note: Households are sorted by income. See text and Appendix A.3 for more details.

Source: Ferriere-Navarro '25

COMMENT 2: LABOR SUPPLY

- And steepness of the distribution of *lpe* over income impacts the fiscal multiplier

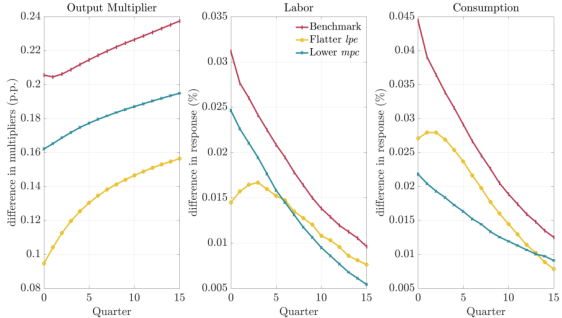

Figure 5: Difference in Multipliers across Progressivity Paths: The Role of *lpe* and *mpc*

Source: Ferriere-Navarro '25

Comment 2: Labor Supply

The problem of the young:

$$V_t(a_-, \zeta, e, s) = \max_{\{c, a \geq 0\}} \Big\{ \log(c) - v(n) + \beta_s \Big[(1 - \pi_{s,\zeta}) \sum_{e'} P_s(e, e')\, V_{t+1}(a, \zeta, e', s) + \pi_{s,\zeta}\, V_{t+1}(a, o, e, s) \Big] \Big\}$$

$$\text{s.t.} \qquad (1 + \tau_c)c + a = \frac{1 + r_p}{1 + g} a_- + (1 - \tau_p)\, z(\varphi, e, s)^{1-\lambda} + T_b\, \bar{T}_b(e)\,.$$

Comment 2: Labor Supply

Instead, can allow for discrete labor participation choice:

$$V_t(a_-, \zeta, e, s) = \max_{\{c, a \geq 0, n\}} \Big\{ \log(c) - v(n) + \beta_s \Big[(1 - \pi_{s,\zeta}) \sum_{e'} P_s(e, e')\, V_{t+1}(a, \zeta, e', s) + \pi_{s,\zeta}\, V_{t+1}(a, o, e, s) \Big] \Big\}$$

$$\text{s.t.} \qquad (1 + \tau_c)c + a = \frac{1 + r_p}{1 + g} a_- + (1 - \tau_p)\, z(\varphi, e, s)^{1-\lambda} + T_b\, \bar{T}_b(e)$$

$$n \in \{0, \bar{n}\}$$

Must change the assumption that the union chooses unique hours for all households (within a type).

Comment 3: What is the Main Contribution?

Many moving parts. What is the unifying message?

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First avenue: **total fiscal multiplier** (methodological)

Standard approach:

$$m_{Y,G}(h) = \frac{\sum_{t=0}^{t=h}(1+r)^{-t}\,dY_t}{\sum_{t=0}^{t=h}(1+r)^{-t}\,dG_t}$$

Total multiplier:

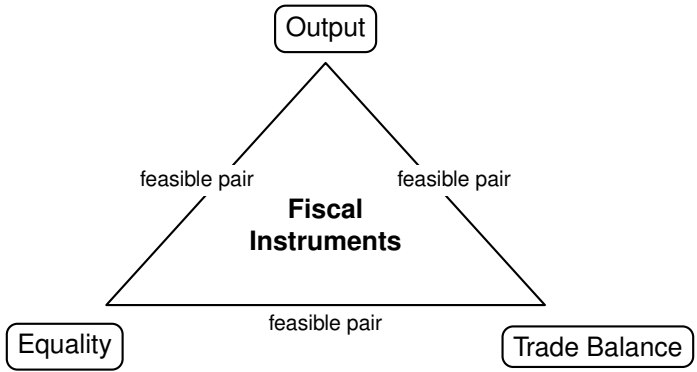
$$M_{Y,G}(h) = \frac{\sum_{t=0}^{t=h}(1+r)^{-t}\,dY_t}{\sum_{t=0}^{t=h}(1+r)^{-t}\,dS_t}$$

Re-investigate conventional wisdoms with the new approach

Comment 3: What is the Main Contribution?

Second avenue: **fiscal policy trilemma** (theorem/conjecture)

No fiscal instrument can simultaneously improve output, trade balance, and equality



Minor Comments

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- Close proximity to Langot-Maillard-Malmberg-Tripier-Hairault '25
- Too many regional **asymmetries**. International dimension hard to follow
- In particular, TFP/productivity differences are very big

Country parameters	Values		
	France	Euro Area	ROW
Discount factor β	0.996055	0.995952	0.997031
Discount factor spread δ_β	0.0008	0.0008	
Share parameter (capital, labor) α_k	0.234	0.268	0.240
Capital depreciation δ_k	1.09%	1.38%	1.38%
Productivity parameters A_s	1.00	0.725	0.46
Energy price p_E	3.68	3.23	3.75

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Labor-market and fiscal parameters	**Values**	
	France	**Euro Area**
Low-skill labor desutility ϕ_l	0.387	0.356
High-skill labor desutility ϕ_h	0.149	0.136
Probability to leave working state π_y	1/42/4	1/43/4
Probability to leave retirement state π_r	1/20/4	1/19/4
Social contribution tax rate τ_l	26.0%	21.5%
VAT rate τ_c	26.2%	22.8%
Dividend tax rate τ_f	66.4%	66.4%
Capital tax rate τ_k	30.5%	24.9%
Household income tax level τ_p	9.24%	10.5%

Conclusion

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- Three main comments
  1. Missing fiscal progressivity as a tool and extensive labor supply decision
  2. What is the main contribution?
  3. Maybe less is more? Fewer instruments, sharper takeaways