Investment Slumps during Financial Crises: Role of Financial Constraints

by

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Discussion

A. Summary

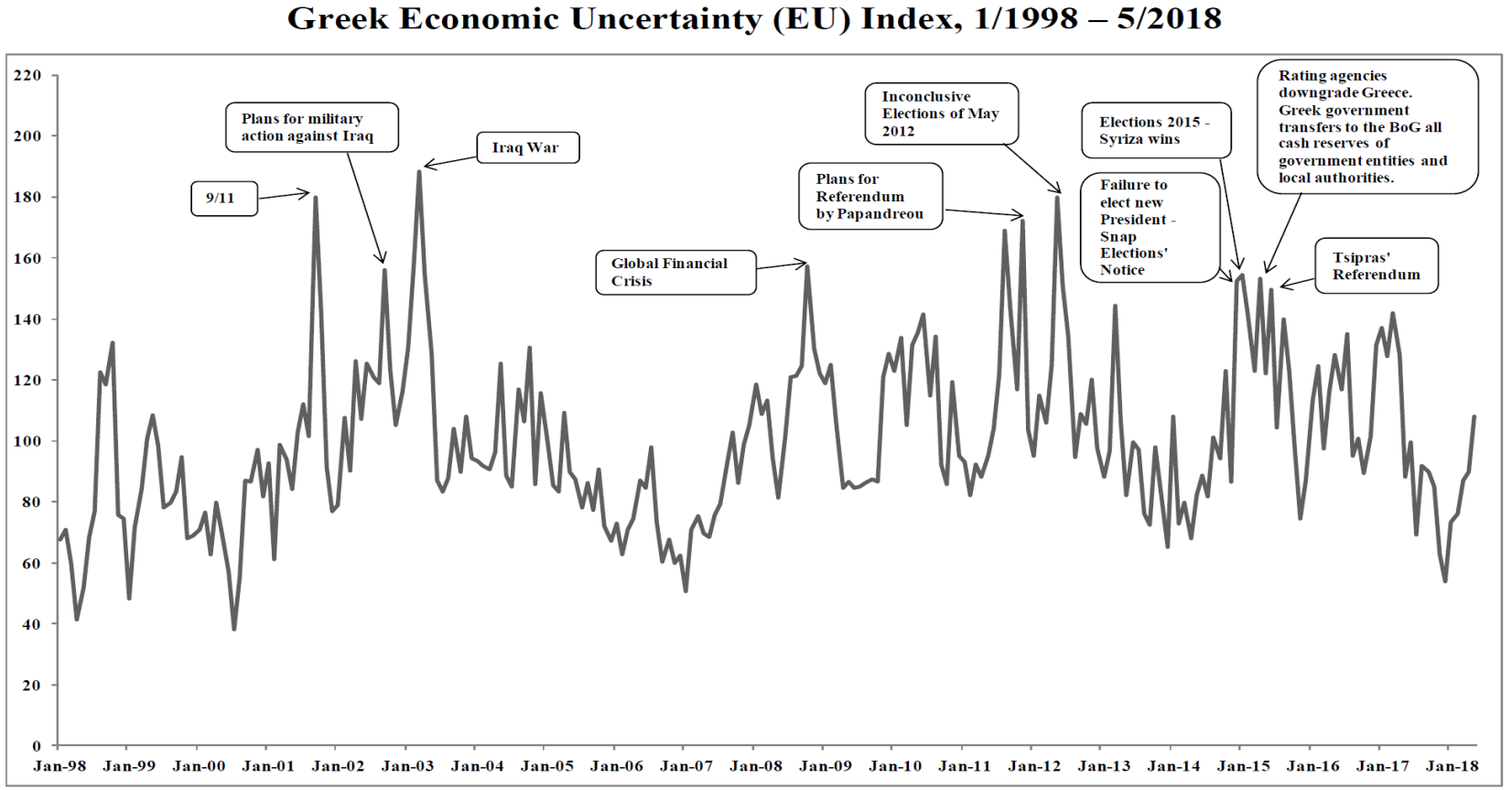
- Compelling study of firm-level financial frictions driving disinvestment and recession in Greece
  - Establishes empirically that:

    Fundamentals cannot explain large portion of post-crisis investment decline;

    Firms with higher external fin. dependence invest significantly less during crisis;

    …. as do firms with higher long-term leverage during 2012-14.
- Paper calibrates:
  - Khan-Thomas type RBC model with financial frictions, modified to incorporate
  - asymmetric variant of Cooper-Haltiwanger capital adjustment costs
- Adding credit shocks allows the model to closely approximate investment slump during the crisis; benchmark model estimates are too low.

B. Impact of economic uncertainty



Notes: The index reflects scaled monthly counts of articles in four Greek newspapers. The series is normalized to a mean of 100 from 1/1998 to 12/2017. For details, see Hardouvelis, Karalas, Karanastasis, Samartzis, 2018, SSRN: https://ssrn.com/abstract=3155172, "Political, Economic and Economic Policy Uncertainty in Greece". Data available at www.PolicyUncertainty.com and at www.hardouvelis.gr.

Source: Hardouvelis et. al. (2018); available at: www.policyuncertainty.com

B. Impact of economic uncertainty

- Evidence of rising uncertainty → sales growth (fig. 4) and profits (tab. 5)
- Investment response to positive demand and profitability shocks can dampen significantly when uncertainty is high (Bloom et al, 07)
  - ➢ increased incidence of investment inactivity
  - ➢ reduced prevalence of investment spikes
  - ➢ rationalizes estimated reduction in probability of investment
- Appears natural to assume k-adj. costs same *relative to potentially changing* projections of future profits? Equivalently, test robustness against $\boldsymbol{E_t^{(c)}(\pi_{t+h}/\pi_t) \neq E_t^{(nc)}(\pi_{t+h}/\pi_t)}$.
  - ➢ Such an alternative assumption, when reflecting greater uncertainty, may increase stickiness of investment irrespective of change in financial constraints

C. Leverage, roll-over risk and weak banks

- Firm-level frictions + banking problems → investment slumps
- What happened to firm leverage during the crisis?
  - Does decrease in LT leverage represent a composition effect?
  - How significant is the drop in LT leverage? In most sectors, it appears to be a reversal of spikes occurring in 2008-09, reverting back to levels in preceding years.
- Paper aggregates over key characteristics of firms and their leverage
  - relationship between roll-over risk and: (i) debt overhang, (ii) firm size and age
- Kalemli-Ozcan et. al. (KLM, 18) study euro-area firms:
  - Firms with more ST debt invest more pre-crisis & reduce investment more ex-post
  - Rollover impact exaggerated by weakness of main bank(s)—esp. in periphery
- KLM and Dinlersoz et. al. (18) – smaller, younger, privately held firms in more exposed to roll-over risk (euro area + US) and weak banks (euro area)

D. Underlying theoretical model and policy

- Financial sector exists “outside the model” in Khan-Thomas (i.e., financial shocks are exogenous)
  - ➢ endogenous TFP shocks presented as major factor, albeit, arguable given persistence decline in employment, even in the US
  - ➢ Data makes KT perhaps persuasive for US (Gertler-Gilchrist, QJE94; JEP18)
- But, not for small open economies → endogenous default and exit
  - ➢ Paper endogenizes exit, but not fully clear what role endogeneity plays, and what the underlying mechanism is (e.g., overborrowing due to limited enforcement?)
  - ➢ Recent models feature overborrowing by all banks and firms (Bianchi & Mendoza, 2018)
- Explicitly modeling leverage and debt maturity decisions opens the door to richer policy analysis, both monetary and macro-prudential

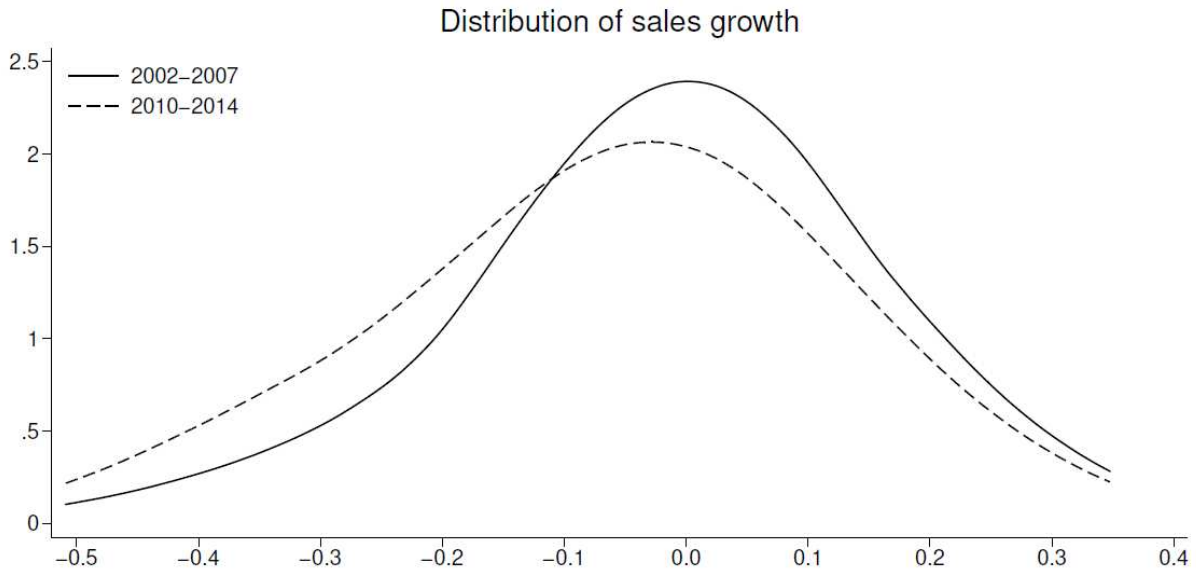
E. Aggregation and capital adjustment costs

- Plant vs. Firm Level Investment Stickiness and Adjustment Costs
  - Cooper-Haltiwanger & Bloom et. al. both emphasize that (S,s) investment behavior and associated moment properties of investment appear less significant at firm level
  - While their analyses are conducted at the plant-level, this paper's is at the firm level
  - How persuasive is the non-convex adjustment component and the (S,s) rule?

References

- Fakos, Sakellaris, Tavares (2018): Investment Slumps during Financial Crises
- Gertler, Gilchrist (1994): QJE
- Cooper, Haltiwanger (2006): RES
- Bloom, Bond, van Reenan (2007): RES
- Khan, Thomas (2013): JPE
- Bianchi, Mendoza (2018): JPE
- Dinlersoz et. al. (2018): NBER WP 25226
- Gertler, Gilchrist (2018): JEP
- Kalemli-Ozcan et. al. (2018): CEPR 13336

Annex. Increasing dispersion of sales growth and profitability of Greek firms



Sector	Period	$SD(\omega)$	$SD(\nu)$
Food and beverages	*Pre-crisis*	0.979	0.633
	During crisis	1.058	0.647
Apparel and lather	*Pre-crisis*	1.173	0.599
	During crisis	1.145	0.638
Paper	*Pre-crisis*	0.847	0.471
	During crisis	0.882	0.497
Chemicals	*Pre-crisis*	0.968	0.526
	During crisis	0.955	0.564
Plastic and rubber	*Pre-crisis*	0.847	0.557
	During crisis	0.967	0.594
Non-metal minerals	*Pre-crisis*	0.967	0.739
	During crisis	1.116	0.857
Metal products	*Pre-crisis*	0.847	0.651
	During crisis	1.066	0.802
MachEq vehicles	*Pre-crisis*	0.951	0.615
	During crisis	1.072	0.744
Whole manufacturing	*Pre-crisis*	1.032	0.626
	During crisis	1.113	0.698

Source: Fakos et. al. (2018)