

PS 343: Franzese, *Macroeconomic Policies of Developed Democracies*

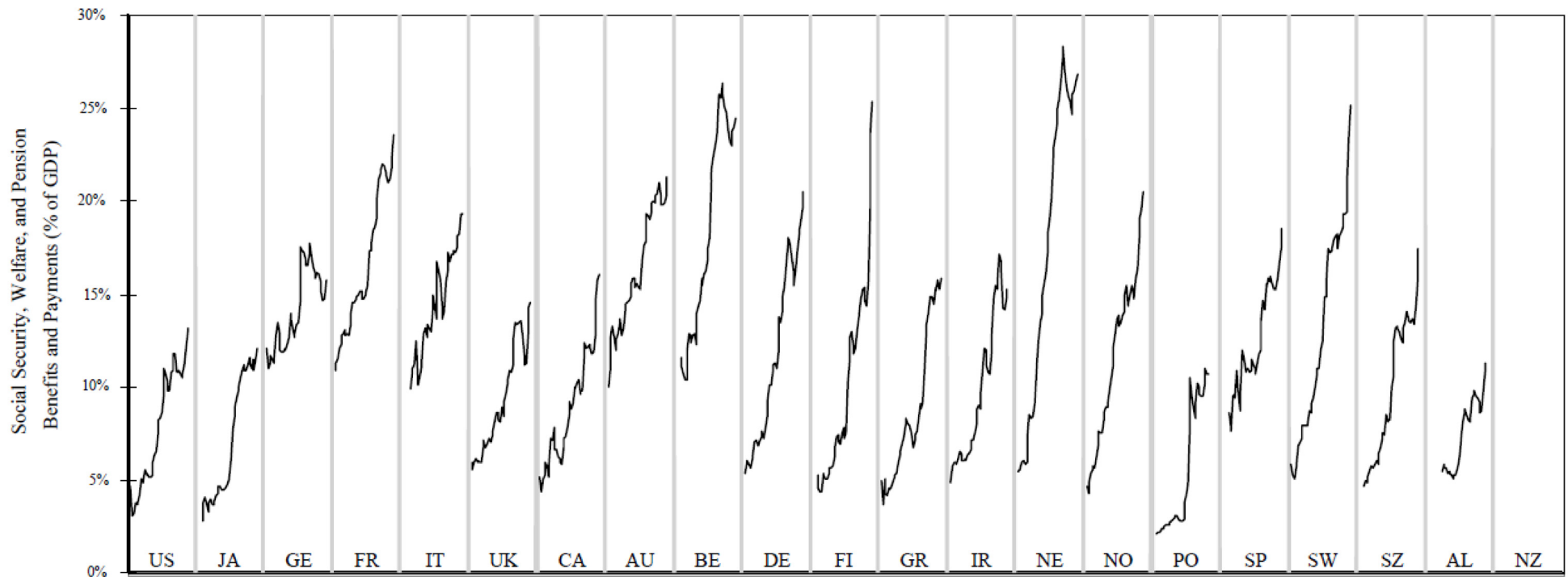
I. *Outline Overview of the Book:*

- A.** *Chapter I:* Postwar governments in all developed democracies committed themselves to some (varying) degree of political provision of social insurance, public goods, and macroeconomic-management.
 - 1.** Postwar commitments reflect broader, often conflicting, goals both to foster capitalist efficiency & growth & to ameliorate their distributional consequences.
 - 2.** Democracy & capitalism distribute political and economic resources differently, creating popular pressures on public policymakers that force tradeoffs between these competing goals that typically expanded the public role in the economy.
 - 3.** However, the universal tensions and shared exposure to common political-economic policymaking challenges induce differing policy & outcome responses:

- a. Differing deviations of policies from those that would maximize unweighted citizens' utilities & differing degrees of govt growth in diff areas in trying to fulfill commitments.
 - b. The differences arose because incentives for political-economic actors that emerge from these conflicting goals & distributions of interest & influence depend on multiple interactions among the domestic & international political-economic institutions, structures, & conditions within which they interact and to which they respond.
4. As these (varying) fiscal-policy difficulties evolved, democratic governments turned first toward monetary-policy and then toward institutional-structural *reform*, attempting to rebuild broad postwar coalitions behind democratic macroeconomic management (putatively) for aggregate efficiency.
- a. However, like their predecessors, these new policy paradigms have strong distributional consequences, whatever their efficiency effects.
 - b. The *new* political struggles over institutional-structural *reforms* look remarkably similar to old left-right, employment-inflation, efficiency-equity, growth-distribution tradeoffs long-familiar to political economy.
 - c. Only locus of political battle changed: from the policies themselves, to the institutions and structures within which democratic policymakers choose those policies.

B. Chapter II: Democratic Commitments Social Insurance, Welfare, Pensions

Figure I.4: Public Transfer Payments by Country-Year



Bars separate annual data for each country, 1948-97 (as available).

1. Differential distribution of votes (1-person, 1-vote) & income (few very wealthy, many poor & middle class) in capitalist democracy tends to produce median voters poorer than economy average, generating dem demand for pub transfers.
2. Economic conditions and these differential distributions of political and economic influence broadly explain the common experiences across countries of (rapidly)

rising transfers-shares of GDP (since the seventies).

- a. While economies grew rapidly in the first two postwar decades, expanding demand for redistribution could be met with only moderately growing transfers-shares of GDP.
 - b. But, when stagflation hit mid 70s & persisted into early 80s, costs of maintaining democratic commitment to social-insurance & so transfers-shares of GDP skyrocketed.
- 3.** Political institutions and structures broadly explain the cross-national differences in the paces of transfers-growth reflecting differing responses by policymakers to similar economic conditions and political pressures.
- a. Stronger labor organization & more-left governments created more-effective political pressure toward transfer expansion and more government responsiveness thereto.
 - b. Systems w/ more frequent elections & slower policy-adjustment, ratchet opportunistic manipulations of transfers around election years into greater long-run transfers levels.
 - c. **Most importantly, electoral institutions that induce greater political participation ↑ range of income distribution, from right (wealthy) to left (poor), represented in electorate, so ↑ effective political pressure on democratic govts from any given distribution of economic resources.**
 - d. [See Figures for b. & c. Next]

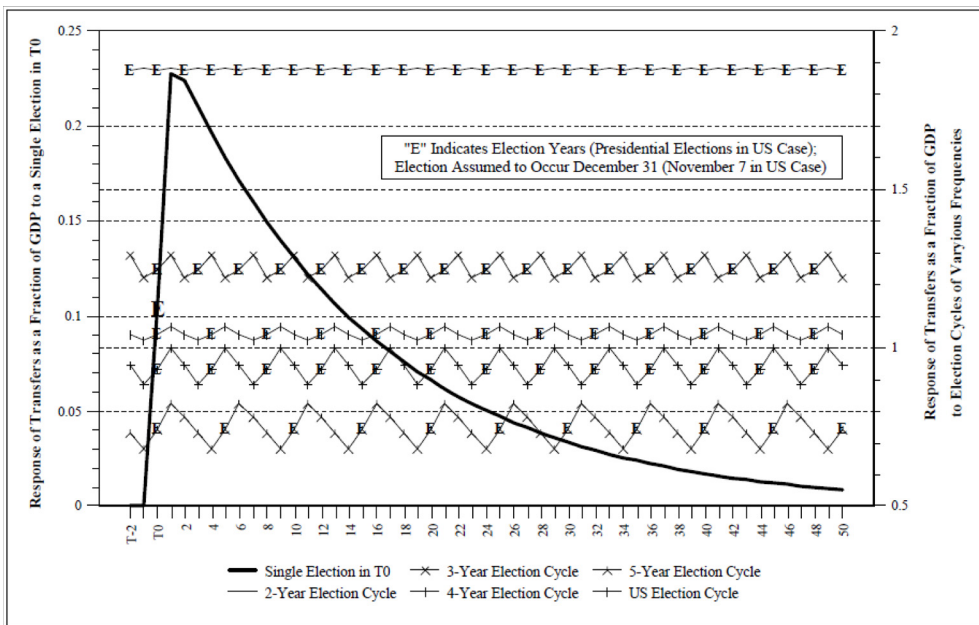
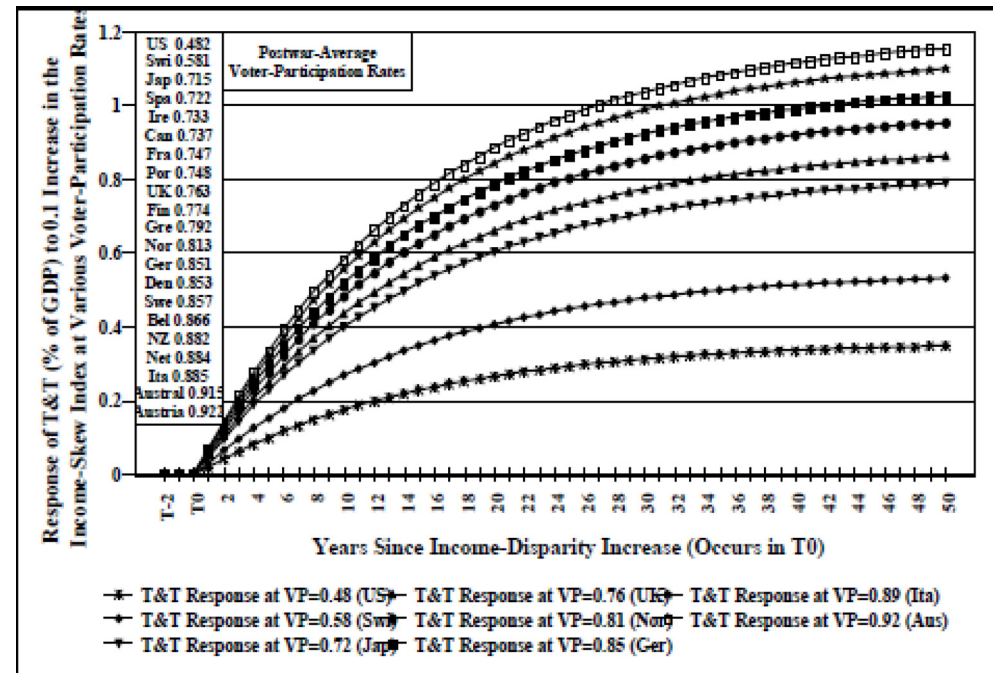


Figure 12: Response of T&T Systems to a Single Election and to Regular Elections of Various Frequencies

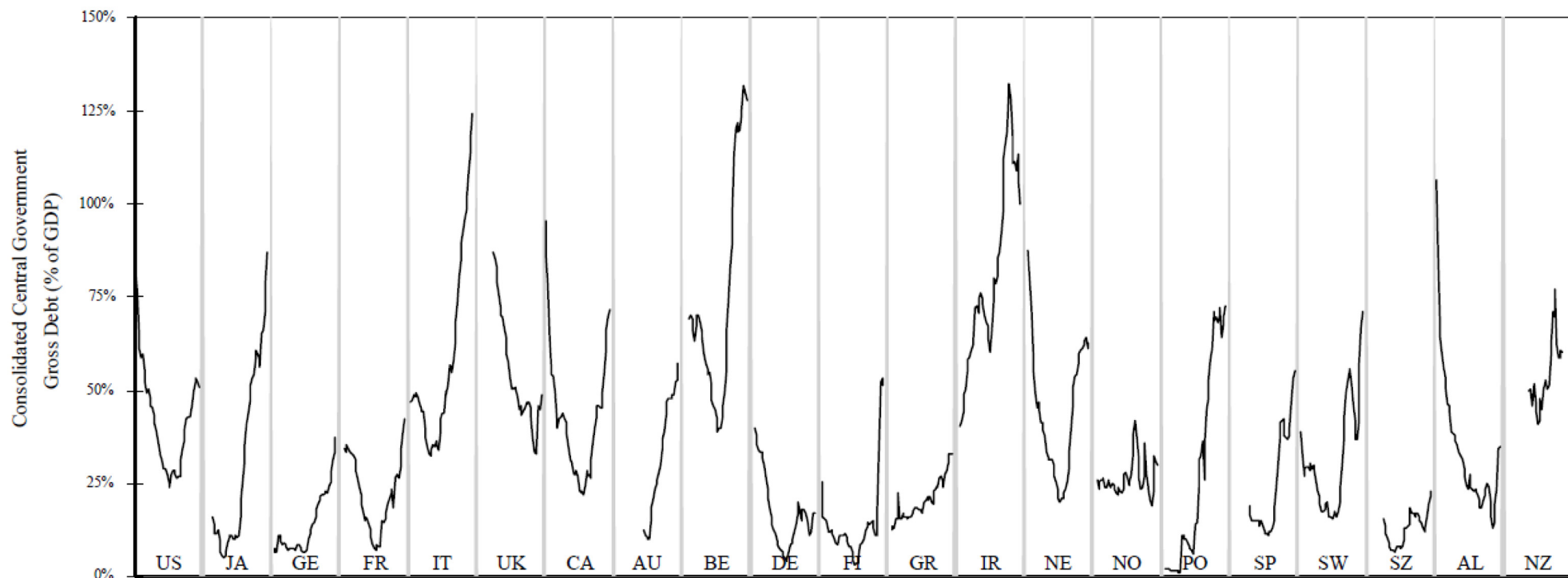


C. Economic Effects and Political Implications:

- a. Rising transfers drove growth in government more generally, which, being partially deficit-financed, drove growing public debt as well.
- b. Rising transfers increased labor-market rigidities, thereby increasing unemployment and reducing fiscal-policy efficacy in controlling it.
- c. However, the rising transfers also ameliorated the economic hardships of those who remained or became unemployed.
- d. Therefore, political conflicts over transfer-system *reform* (90s into 00s) replicate rather than replace familiar left-right conflicts.

D. Chapter III: Deficit Finance of the Commitments and Public Indebtedness

Figure I.7: Public Debt by Country-Year



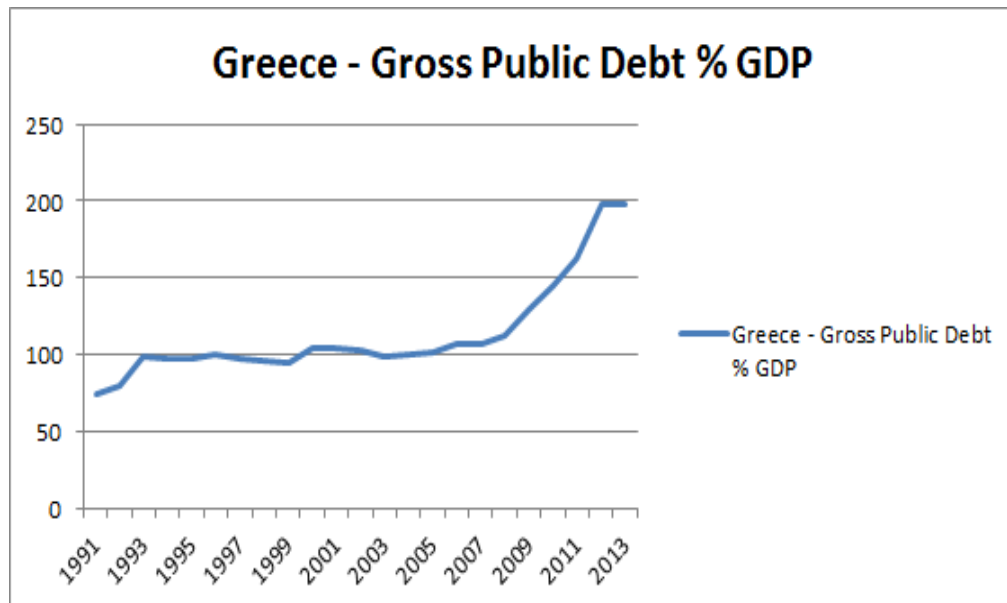
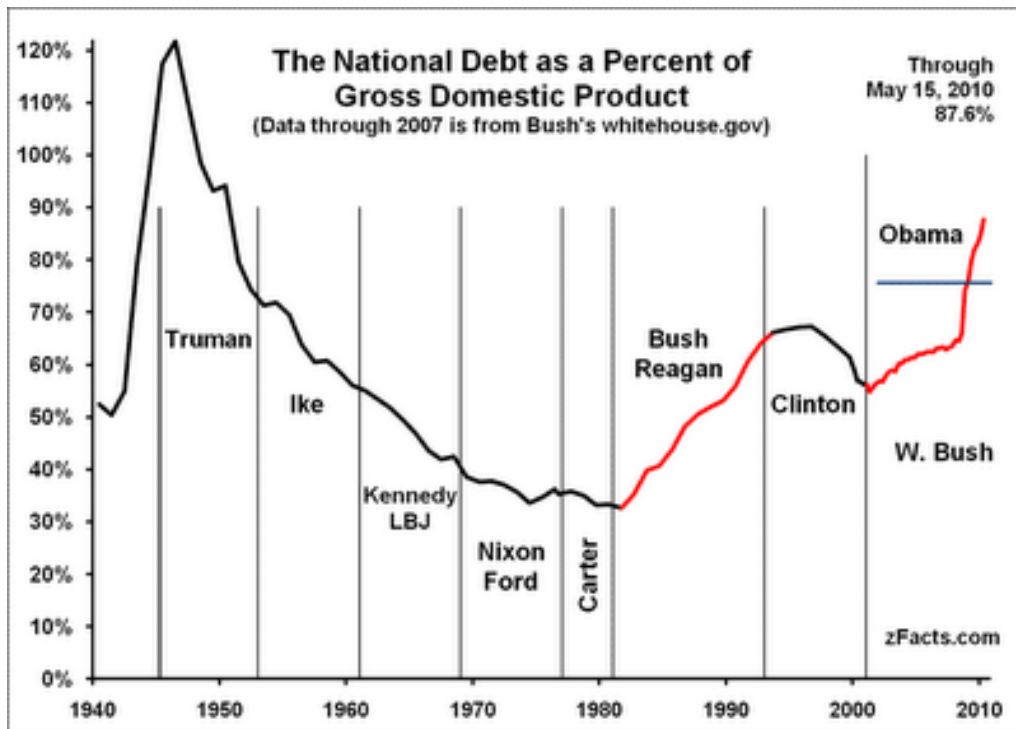
Bars separate annual data for each country, 1948-97 (as available).

1. Common pressures and economic exposures explain the broadly shared path of falling debt through the seventies and dramatic reversal thereafter.
 - a. Common pressures toward partial deficit-finance of transfers-driven growth in total spend more than offset 'til mid/late 70s by strong GDP growth, allowing simultaneous expansion of public involvement in macroeconomy & reduction debt-to-GDP ratios.
 - b. Common exposure to terms-of-trade shocks in the mid/late 70s, which triggered

stagnant growth and high unemployment through early 80s, increased debt costs of continuing expansion of democratic commitments to macroeconomic involvement.

- c. As gov't turned toward anti-inflationary monetary policy to redress the inflation aspect of stagflation, real-interest rates on the newly accumulating debt rose sharply, dramatically exacerbating debt effects of slowed growth and higher unemployment.

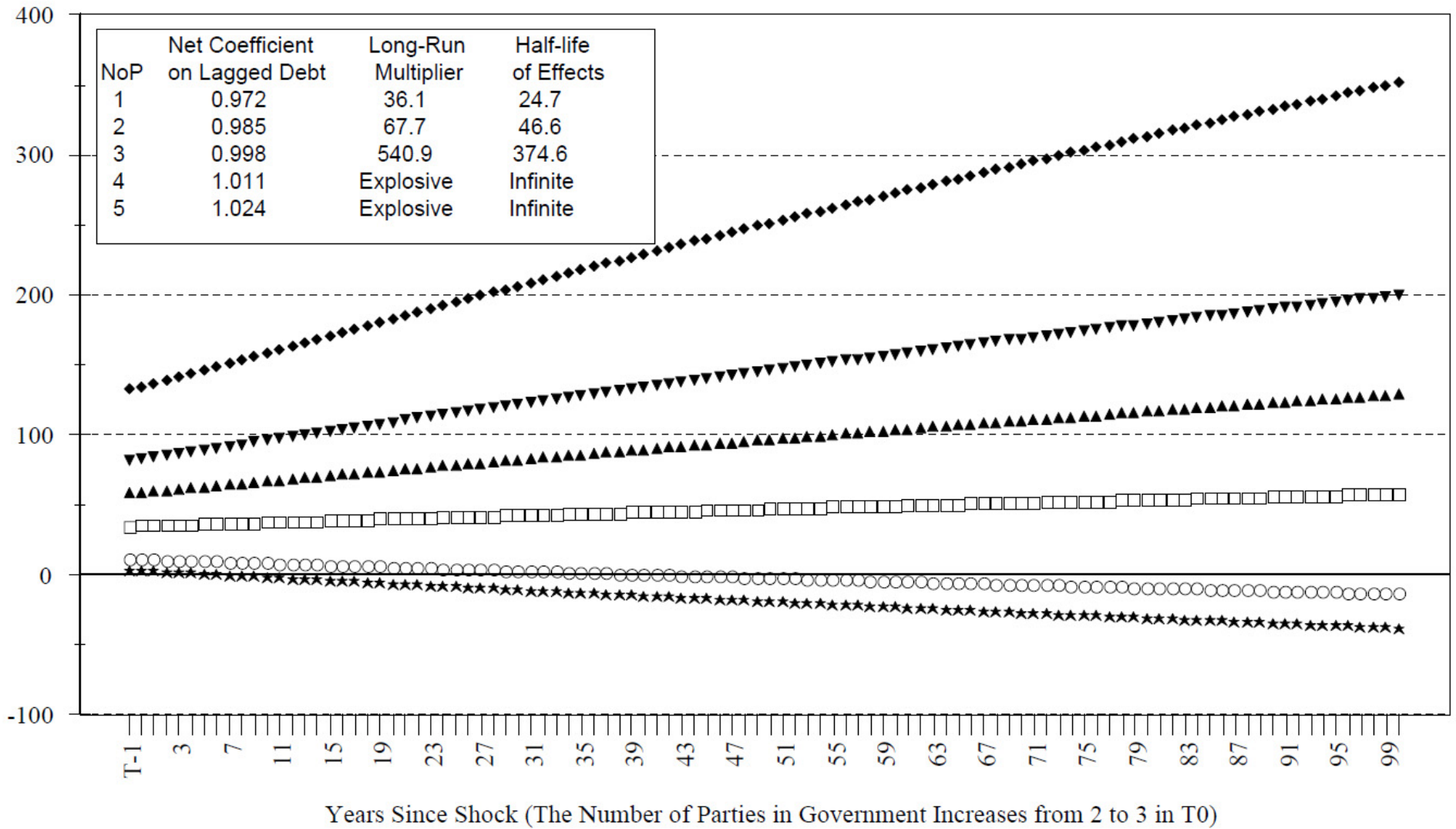
Incidentally:



(Would seem some adjustment upward of Greece from my data, but broadly inline that steady increase since WWII, then plateau around 100%, apparently, until economic collapse puts on structurally unsustainable path in late '00s.)

2. Interactions among differing political-economic institutions, structures, and conditions magnified these effects in some democracies and dampened them in others, yielding the observed cross-national and cross-country-time differences:
- a. Systems w/ autonomous, conservative central banks diminish govts' access to politically expedient inflationary (partial) debt-default, dissuading debt accumulation.
 - b. More complicated fiscal systems aggravate voters' difficulties in evaluating the full and true costs of deficit-financing, increasing incentives for policymakers to issue debt.
 - c. Systems w/ more frequent elections & slower policy-adjustment, ratchet opportunistic manipulations of transfers around election years into greater long-run transfers levels.
 - d. Presidentialism \Rightarrow powerful policymaker w/ 1 national constituency, reducing motives for debt-financed distribution projects.
 - e. **Most importantly, fractionalized-polarized govts retard policy adjustments, thereby geometrically multiplying long-run debt-effects of the high real-interest following the terms-of-trade shocks &, indeed, the effects of all other political-economic conditions.** [See next slide...]

Debt Response to a Hypothetical Permanent Increase in the Number of Parties in Government from 2 to 3



- ★ Debt Initially Stable at 3% of GDP □ Debt Initially Stable at 35.0.7% of GDP ▼ Debt Initially Stable at 82.4% of GDP
- Debt Initially Stable at 11.2% of GDP ▲ Debt Initially Stable at 58.7% of GDP ◆ Debt Initially Stable at 133% of GDP

3. Economic Effects and Political Implications

- a. Public debt had little effect on real growth, but strong, opposite effects on inflation (positive) and unemployment (negative).
 - (1) The economic effect of debt, therefore, reflects less any large efficiency difference between public and private investment and more their differing distributional effects.
 - (2) Accordingly, political battles over *reforms* to reduce debt, however couched in the language of efficiency and responsibility, mirror familiar macroeconomic-policy struggles.
- b. ↑ public debts, + transfers-induced ↑ labor-market rigidities, + ↑ international trade & financial exposure, increasingly limited fiscal-policy efficacy & maneuverability.
- c. Accordingly, governments turned to monetary policy, freed from fixed-exchange restrictions, to fulfill their democratic commitments to macroeconomic management...
 - (1) ...to redress the inflation inherited from the oil shocks, and...
 - (2) ...to attempt to rebuild broad postwar coalitions behind political regulation of the economy (putatively) for aggregate efficiency;
 - (3) [...note: emphasis in claim for address of full employment and growth shifts heavily to “sound macroeconomic management (monetary & fiscal discipline),” “low & efficient” taxes & tax-systems, and, especially, microeconomic measures.]

E. *Chapter IV: Monetary Regulation of the Macroeconomy*

- 1.** Anti-inflationary effects of monetary conservatism depended on how inflationary political economy would be absent such monetary conservatism.
 - a. Where inst's & struct macroecon produce small (great) inflationary pressures on govts, monetary-authority conservatism adds little (much) further anti-inflationary bite.
- 2.** Real (e.g., UE) effects monetary conservatism depend on credibility with which monetary authority could threaten to quash infl. pressures, but also on incentives & capacity of wage-price bargainers to respond efficiently to those threats.
 - a. More-coordinated bargaining-units encompass greater shares of the economic aggregates to which monetary authorities' threaten responses and so have greater incentives and capacity to respond efficiently.
 - b. Monetary-threat enactment \uparrow interest rates, \Rightarrow \downarrow private investment & appreciating exchange rates, so private-sector &, especially, traded-sector bargainers have greater incentives respond more efficiently to monetary threats than public-sector bargainers.
- 3.** Thus, both nominal benefits & real costs of govts' conservative monetary-policy shifts larger where pol-econs had less-coordinated & more public-relative-to-traded-sector dominated bargaining (& where they were otherwise inflationary).

4. Coordinated bargaining tended to equalize wage-growth across low-productivity-growth service and high-productivity-growth industrial sectors, tending to price private sectors out of service provision.
 - a. Govts in such economies \therefore tended to respond \uparrow pub-sector service provide & employ
 - b. However, this \uparrow public-sector employ undermined the efficiency of coordinated bargaining in delivering wage-price restraint & responding to monetary conservatism
5. Therefore, as govts turned toward monetary conservatism to restrain inflation...
 - a. ...real costs of doing so were growing even where they used to be low and everywhere tended to be larger wherever the nominal benefits of doing so were larger, and...
 - b. ...the inflation effects of public-sector employment-growth were converted into real effects, undermining political support for coordinated bargaining.
6. Again, modern political struggles over institutional *reform*, increasing labor-market flexibility & credible monetary conservatism, merely paraphrase long-familiar macroeconomic-policy debates.

F. *Chapter V* concludes summarily.

II. Chapter I: Introduction

A. Explanatory Task: striking commonalities in growth of transfers, debt, and shift toward anti-inflationary monetary policy & *structural reform*, yet at least as striking differences in degree and locus of these trends & shifts

1. Broad explanations for the commonality:

- a. Shared exposure global econ conditions & common demographic & structural trends
- b. Similarly democratic govts shared conflicting commitments to foster capitalist econ development and to alleviate its distributional inequities/personal economic hardship
- c. Universally conflicting distributions of political and economic influence \Rightarrow responses to these challenges in seeking to fulfill these commitments that induced growth

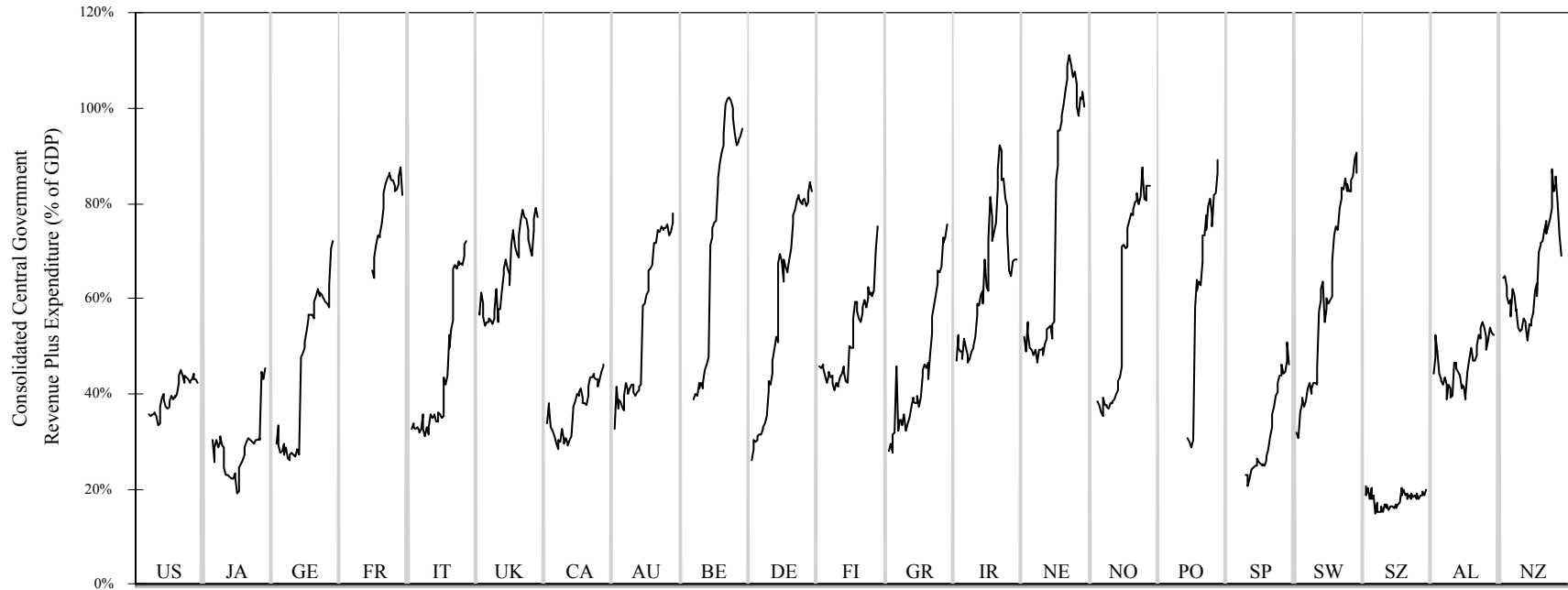
2. Broad explanations for the divergences:

- a. Although broadly similar (democratic), public and private actors responded to these universal pressures differently because they operate in different structures of international and domestic political-economic institutions, interests, and conditions.
- b. Moreover, incentives & capacities that ultimately emanate from these common pressures filtered through these different settings depend on multiple interactions among these structures of interests, institutions, & conditions.
 - (1) Thus, the policy & outcome divergences are determined by multiple complex political-economic interactions; however,
 - (2) theory & theoretically informed empirical exploration can render complexity comprehensible

3. Policy commonalities and differences:

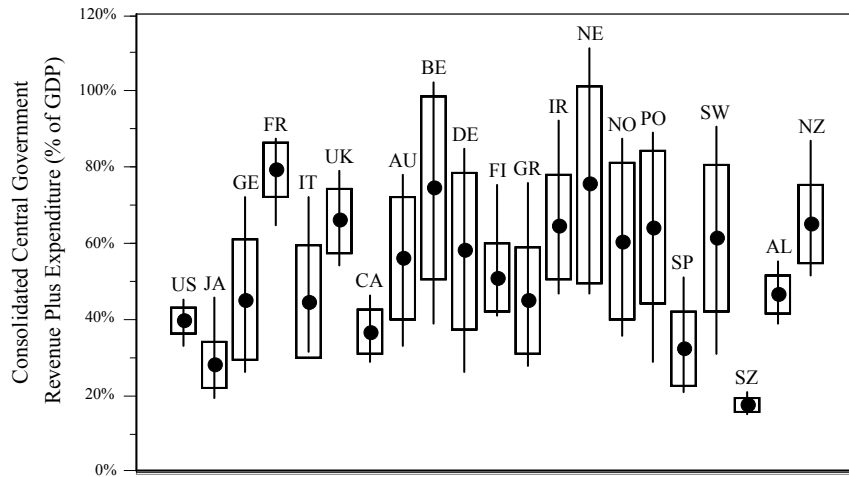
- a. Total size of government
- b. Transfers (dependent variable of chapter 2)
- c. Debt (dependent variable of chapter 3)
- d. Public employment (an aspect of chapter 4)

Figure I.1: Total Public Fiscal Activity by Country-Year



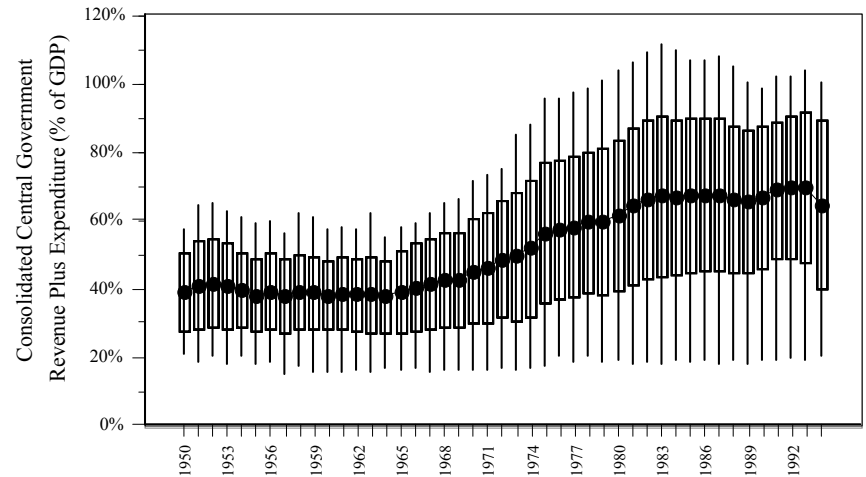
Bars separate annual data for each country, 1948-97 (as available).

Figure I.2: Total Public Fiscal Activity by Country



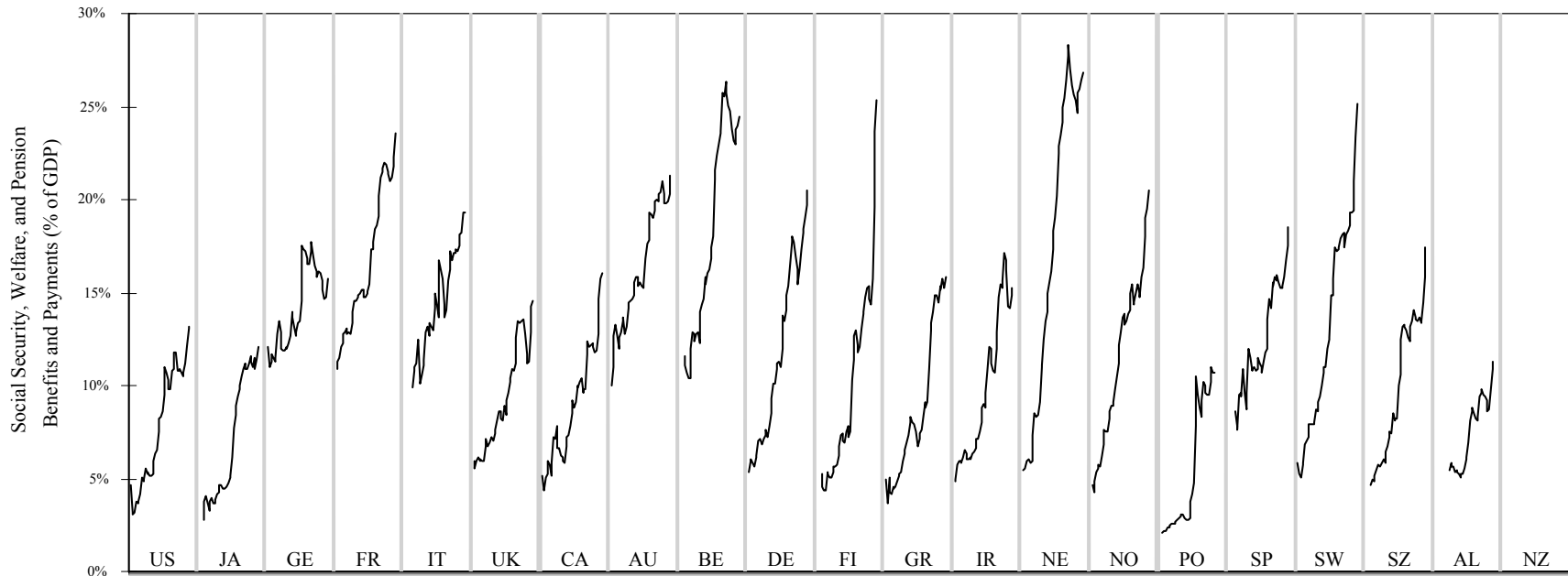
Dot marks postwar mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.3: Total Public Fiscal Activity by Year



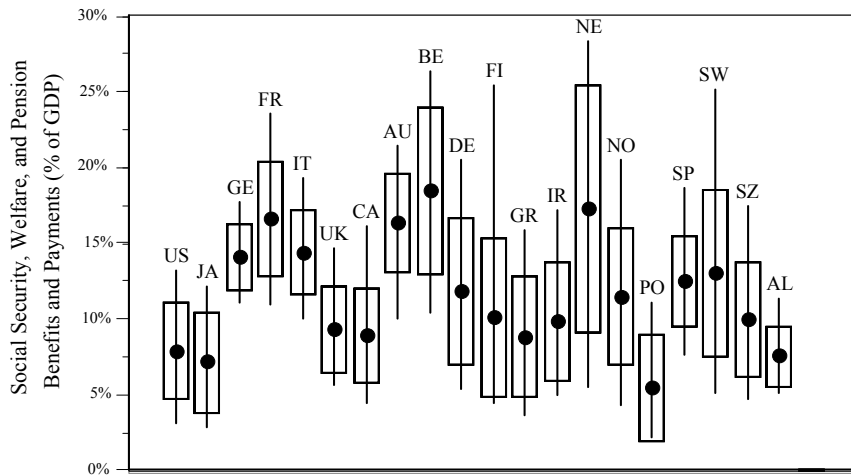
Dot marks 21-country mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.4: Public Transfer Payments by Country-Year



Bars separate annual data for each country, 1948-97 (as available).

Figure I.5: Public Transfer Payments by Country



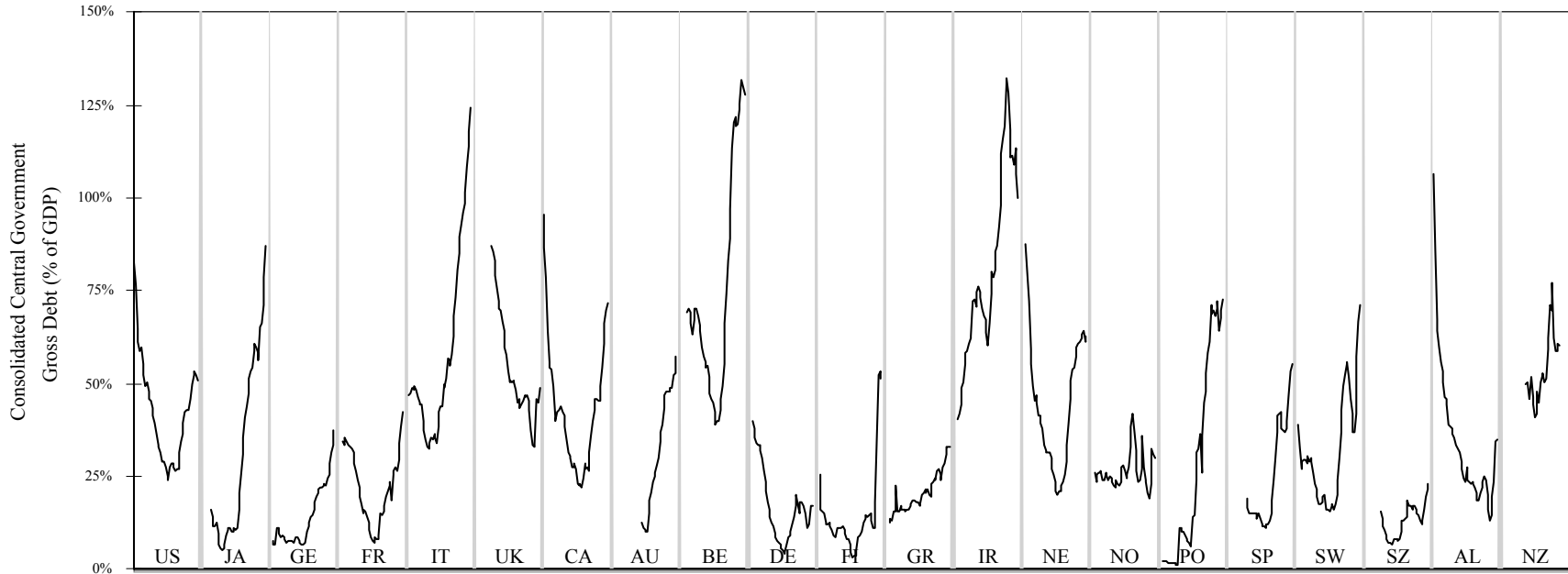
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Figure I.6: Public Transfer Payments by Year



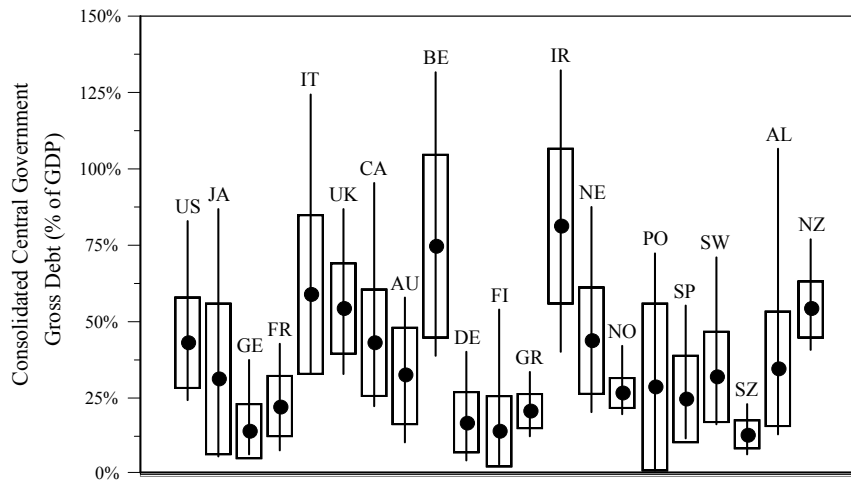
Dot marks 21-country mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.7: Public Debt by Country-Year



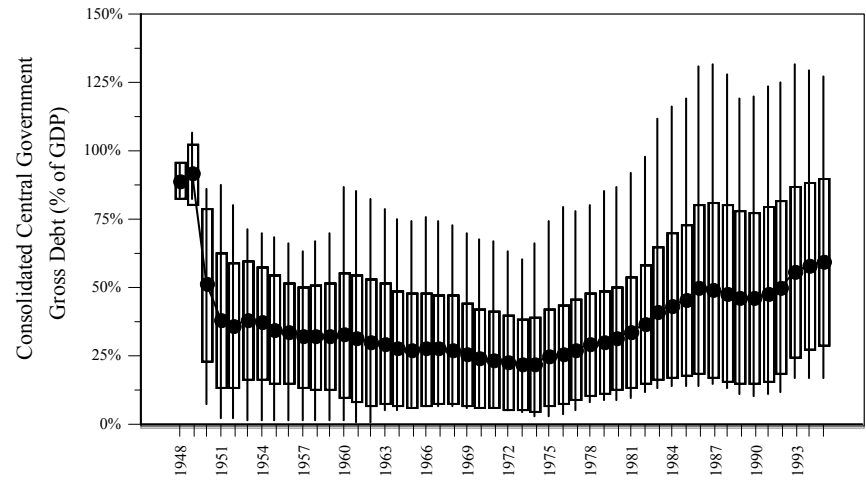
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Figure I.8: Public Debt by Country



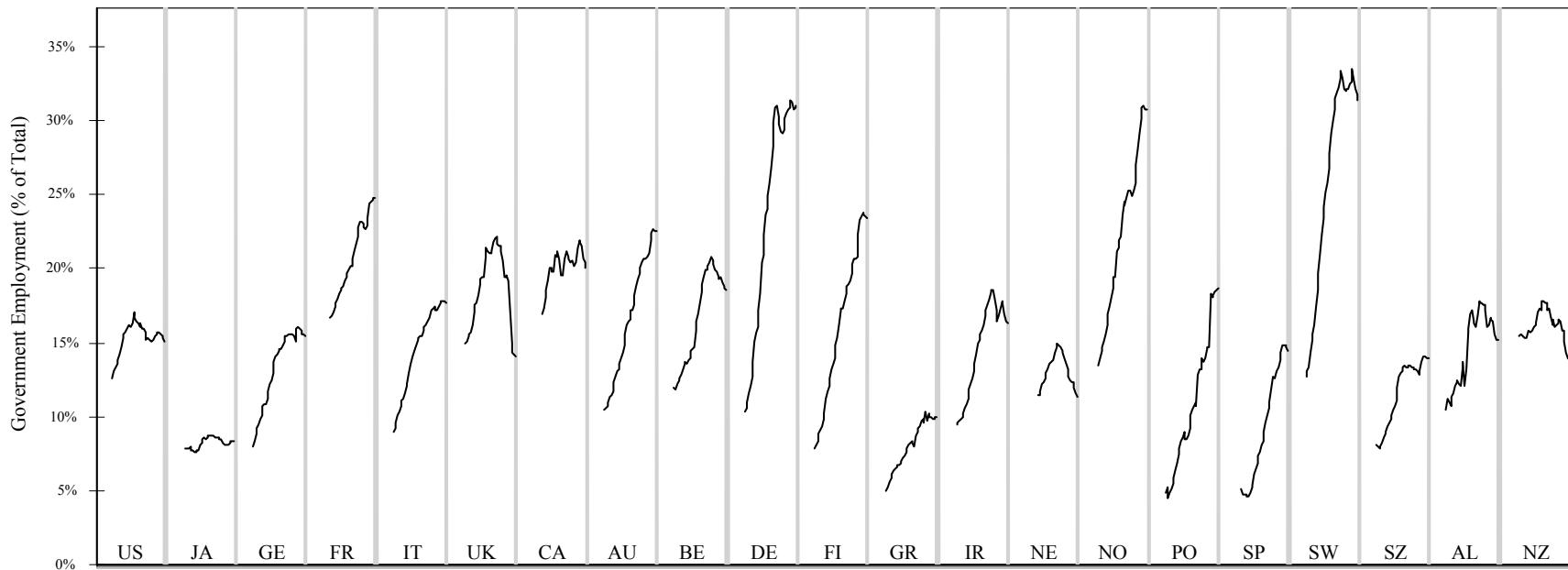
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Figure I.9: Public Debt by Year



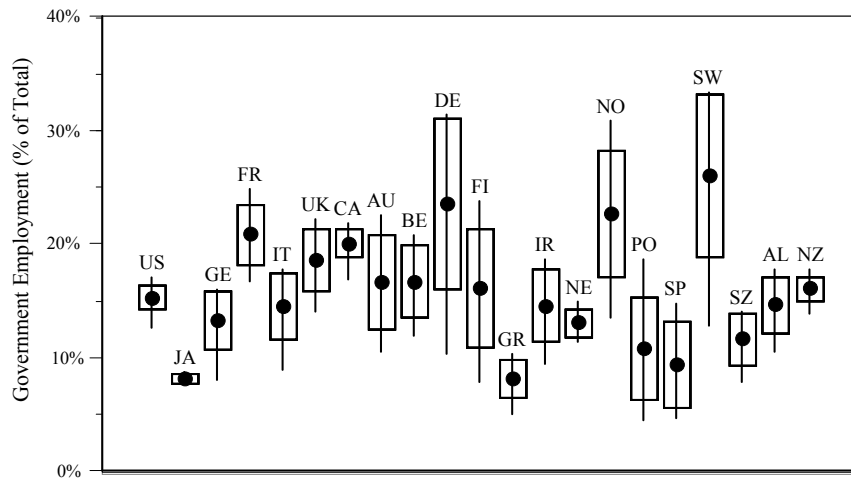
Dot marks 21-country mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.10: Public Employment by Country-Year



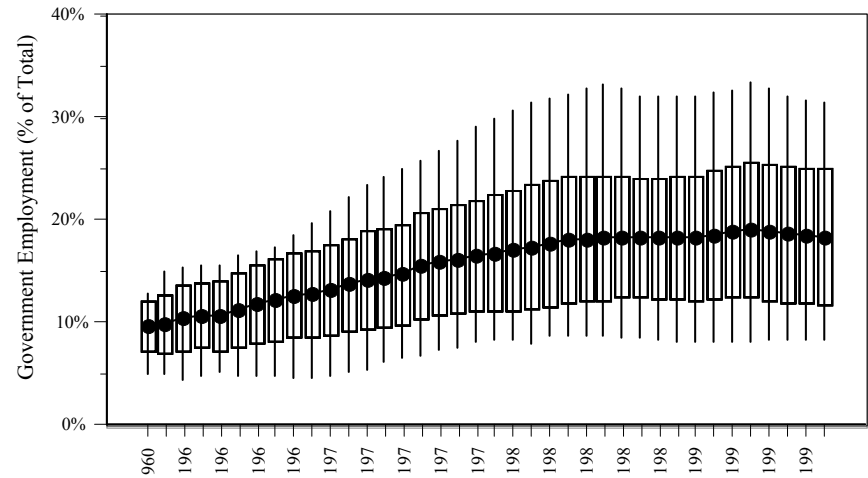
Bars separate annual data for each country, 1948-97 (as available).

Figure I.11: Public Employment by Country



Dot marks postwar mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.12: Public Employment by Year



Dot marks 21-country mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

4 .Outcome commonalities and differences: unemployment, inflation, growth.

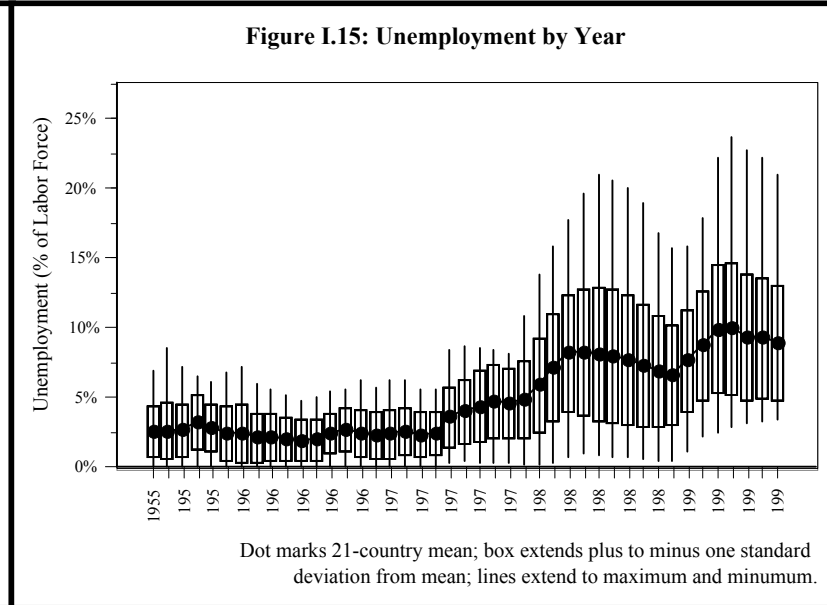
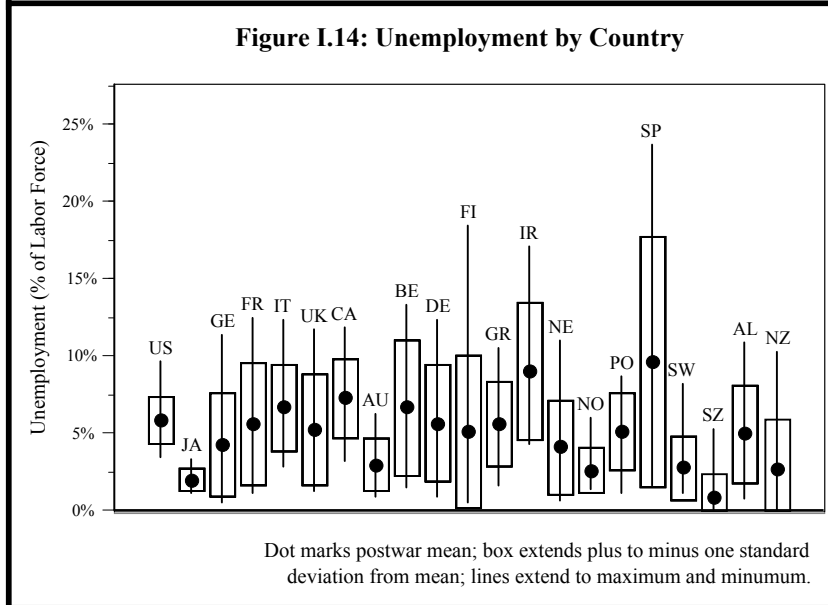
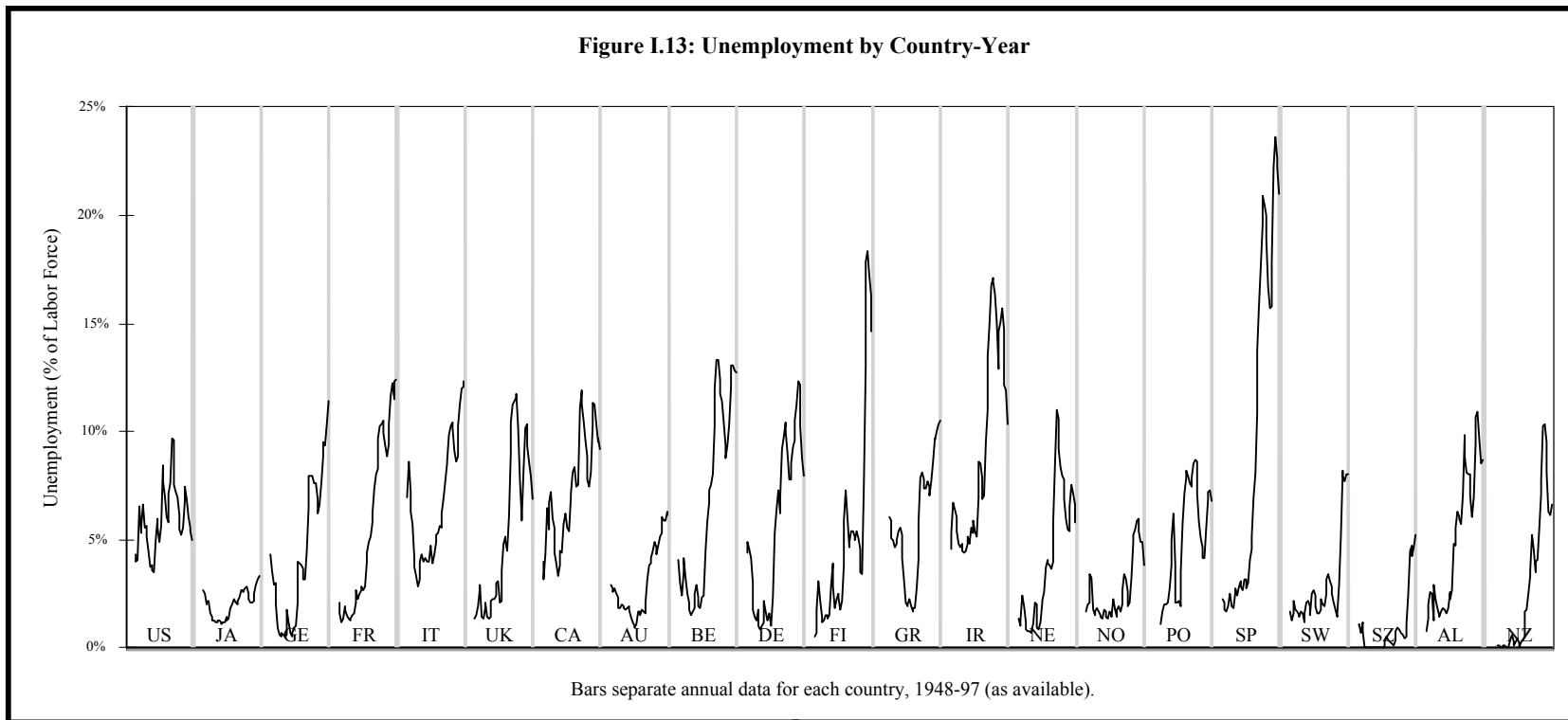
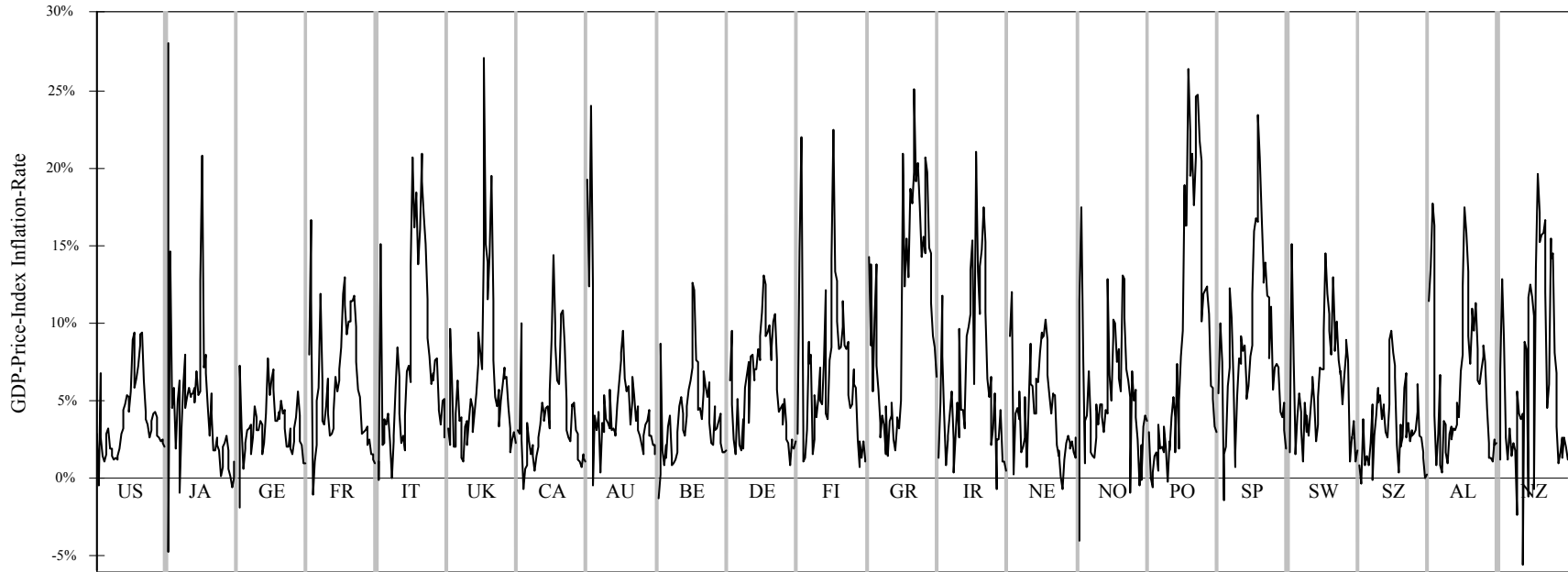
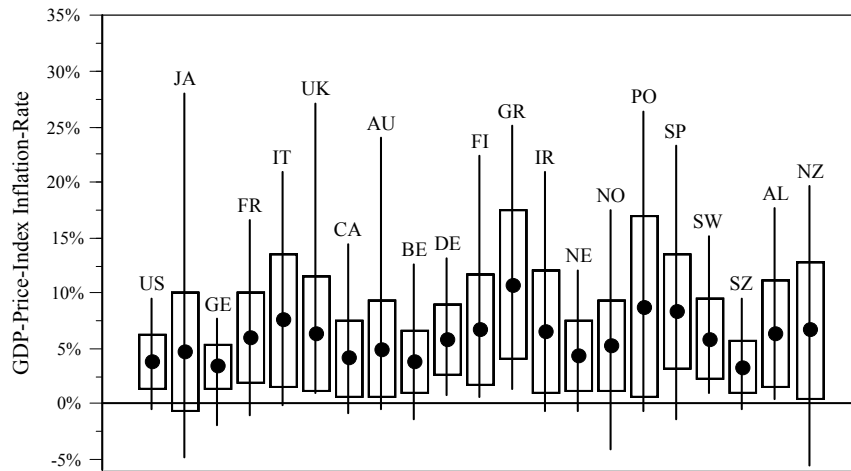


Figure I.16: Inflation by Country-Year



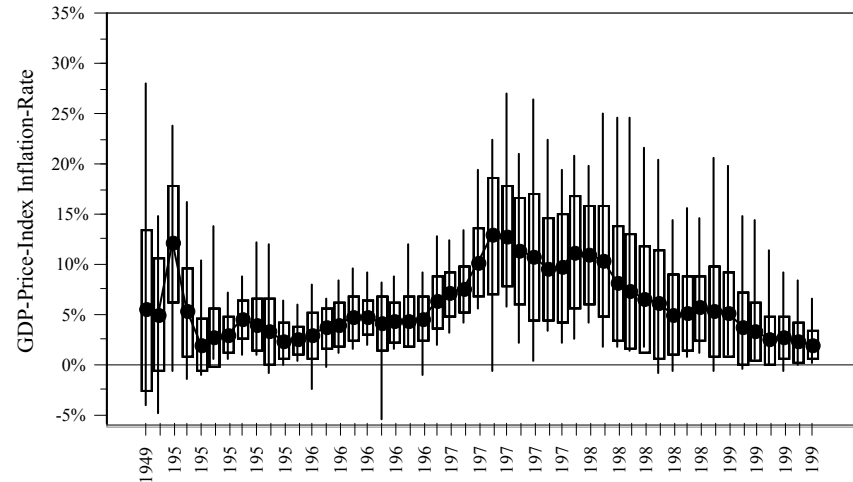
Bars separate annual data for each country, 1948-97 (as available).

Figure I.17: Inflation by Country



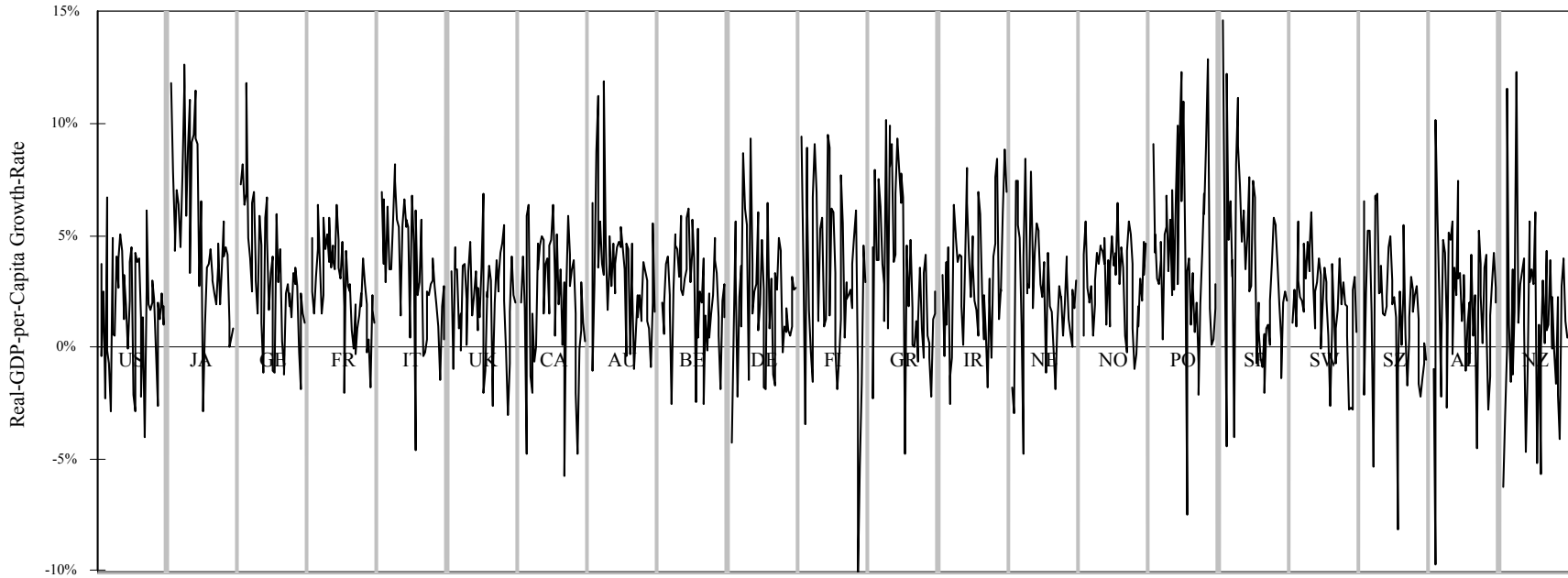
Dot marks postwar mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.18: Inflation by Year



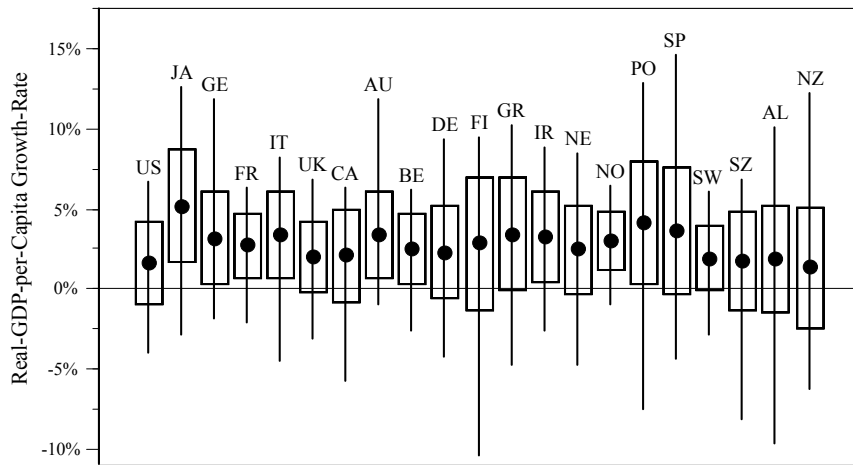
Dot marks 21-country mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.19: Real Per-Capita Growth by Country-Year



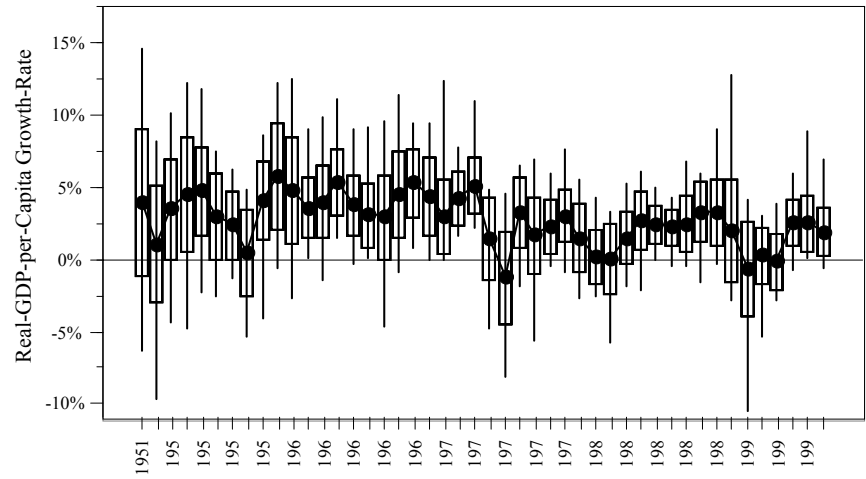
Bars separate annual data for each country, 1948-97 (as available).

Figure I.20: Real Per-Capita Growth by Country



Dot marks postwar mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

Figure I.21: Real Per-Capita Growth by Year

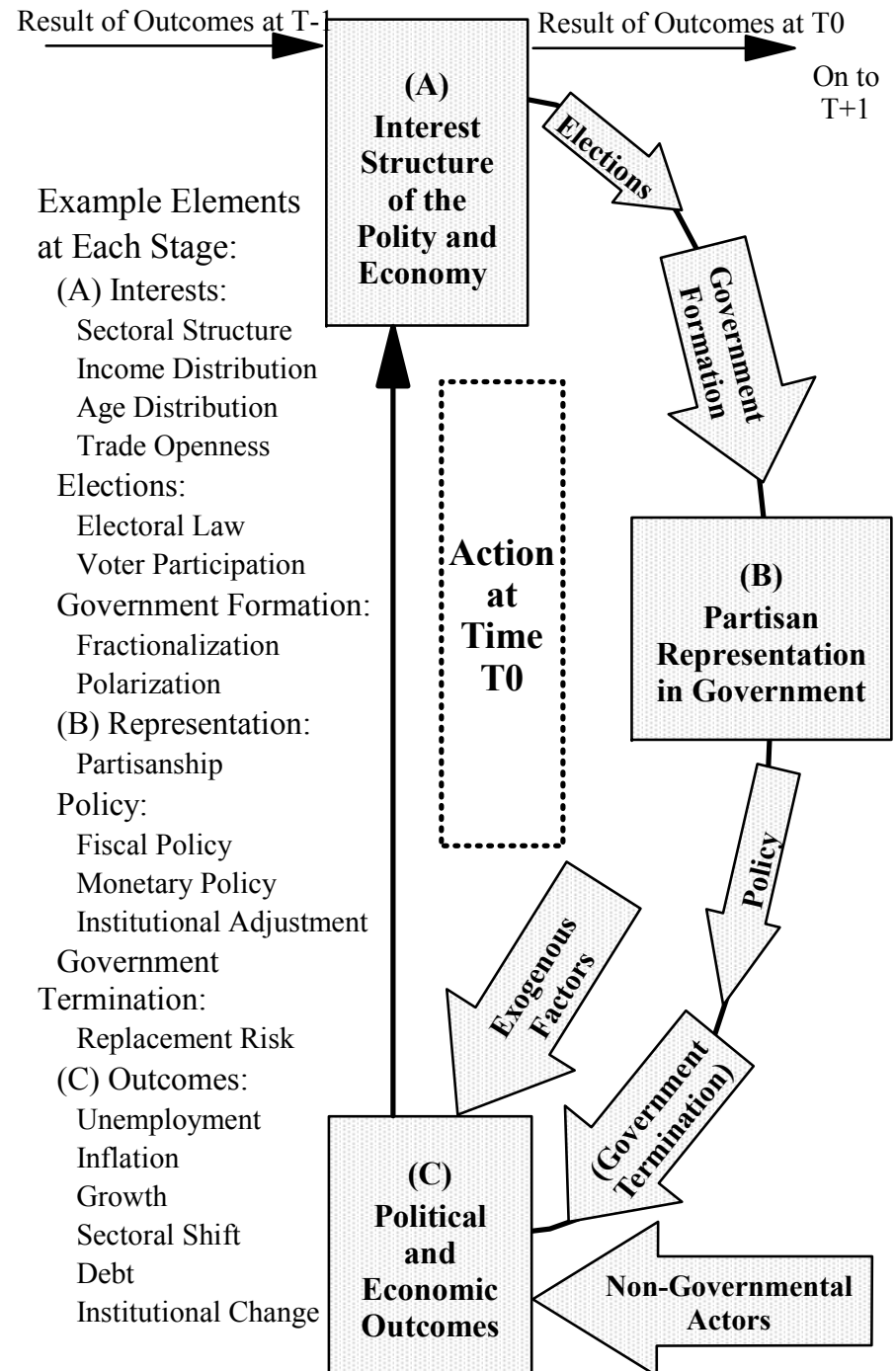


Dot marks 21-country mean; box extends plus to minus one standard deviation from mean; lines extend to maximum and minimum.

5. A schematic diagram of the flow of the political-economic argument. Notice:

- a. *Multicausality*: many factors at many levels
- b. *Complex Context-Conditionality*: Generally speaking, these many factors interact to shape outcomes; for starters, when effects manifest or processed through factors further ahead in cycle.
- c. *Ubiquitous Endogeneity*: for starters, causes emanate from (expected) products ahead in the cycle as well as from progenitors behind.

Figure I.22: The Cycle of Political Economy



B. Five Contributions:

1. Separate studies of transfers, debt, & monetary *cum* wage/price management
 - a. **Transfers: how pro-/anti-participatory institutions shape dem response to inequality**
 - b. **Debt: how veto actors retard policy adjustment-rates, implying multiple political-economic interactions in long-run debt determination**
 - c. *Monetary/Wage-Price Management*: how shared policy control implies multiple interactions in policy determination, and how effects of policy depend on multiple interactions among the characteristics of policymakers and key private actors.
2. Offer a view of comparative and international political economy (*C&IPE*)
 - a. Universal tensions b/w liberal democracy & free-market capitalism, arising from different distribution of political (votes) and economic (wealth) influence induce differentiated responses from policymakers and private actors depending on institutional, interest-structural, and political-economic conditional settings.
 - b. Multiple interactions among these institutions, interests, and conditions.

3. *Methodology*: how model theoretical interactive complexity empirically compact, intuitive, & powerful manner, & how present such substantively effectively
4. Theoretically guided aggregate empirical history of postwar evolution of macroeconomic policy, policymaking, and outcomes in developed democracies.
5. Substantive Story:
 - a. This evolution entailed ↑ **difficulty in democratic management macroecon., & exacerbated distributional conflicts inherent in the tradeoffs while undermining efficiency (&/or belief therein) of such management.**
 - b. In **response, democratic policymakers shifted from emphases on fiscal, to monetary, and then to institutional-structural *reform* to rebuild broad postwar coalitions behind economic management.**
 - c. ***Reforms*, however, retained strong distributional implications whatever their (partisan) protagonists may claim, so...**
 - d. **...modern political struggles over *reform* reflect rather than replace traditional left-right conflicts.**

C. Democratic Commitments to Government Involvement in Macroeconomy

1. All made commitments, to varying degree, to
 - a. Social “insurance” for disability, illness, unemployment, old-age;
 - b. Provision of “public” goods;
 - c. Public management of macroeconomy and the macroeconomic cycle.
 - (1) E.g., UK 1942 Beveridge Report (universal health), and 1944 White Paper (govt responsibility for macroeconomic management): “The Government accepts as one of their primary aims and responsibilities the maintenance of a high and stable level of employment after the war.”
2. “*Postwar-Settlement*”, “*Neoclassical*”, & “*Class-Compromise*” Views of Commitments
 - a. *Postwar-settlement*: bargained settlement arose from immediate postwar interest-group struggles over appropriate role of govt in economy (Katzenstein, Hall, Gourevitch).
 - b. *Neoclassical* view: common interest in *efficiency*-enhancing macro management & public policy, but hindered by “*purely political*” distributional conflicts ⇒ concern democracy endangers capitalism (heritage: Aristotle, Mill, Marx, Tocqueville, Hamilton; modern: Olson, Buchanan & Wagner, Meltzer & Richard, public-choice school).
 - c. *Class-Compromise*: serve to co-opt working class sufficiently to enable capital accum. Core conflict to reconcile necessary efficiency of capitalism w/ its equally necessary consequence of working-class impoverishment. (modern: Esping-Andersen, Offe).

3. Emerging Challenges:

- a. Burgeoning social-insurance systems, health care, debt;
- b. Economic Stagnation
- c. \Rightarrow *Crisis of the KWS*
 - (1) KWS aims to buttress and to facilitate capitalist economic development while alleviating its harshest individual and distributional consequences
 - (2) Victim of its own success:
 - (a) in succeeding at the latter, it undermines the harsh incentives that largely the source of the former,
 - (b) yet to continue to succeed at (i.e., to fund) the latter, needs continued success on the former.
- d. What results from *potential* conflict between distribution political & economic influence, which results in relatively unmoderated growth KWS, however, is empirical question.
 - (1) Cannot simply count votes: rational ignorance, money influence, organizational capacity, etc.
 - (2) *Argument*: some general democratic tendency toward over-provision, but specific manifestations highly institutionally contingent, & under-provision also possible.
 - (a) I.e., differing deviations from economic textbook *optimal*
- e. \Rightarrow Alternative Title for Book: *Comparative Democratic Mismanagement of the KWS*

D. Evolution of Policy Commitments and of Macroeconomic Performance

1. *Figures 1.1-3*: Size of govt, common trends & over-time variation, persistent cross-country variation, and remainder, cross-ctry-time unique divergence.
2. *Figures 1.4-6*: Transfers, common trends and divergence...
 - a. Economic conditions largely explain commonality
 - b. **One key source of divergence: interaction of participation and inequality**
3. *Figures 1.7-9*: Public Debt, common trends and divergence...
 - a. Econ conditions & responding growth govt from above largely explain commonality,
 - b. **One key to diverge: interact veto players w/ pro-debt pol-econ conditions**
 - c. Combination of above, plus increasing international exposure, increasingly limits fiscal-policy maneuverability & efficacy \Rightarrow shift to (anti-inflationary) monetary policy
4. *Figures 1.10-12*: Public Employment, common trends and divergence...
 - a. However, structural changes in domestic interests & esp. in labor markets \Rightarrow increasingly difficult to manage nominal macroeconomy monetarily at low real cost
 - b. Nominal & real effects of anti-inflationary shift, therefore, highly conditional; so *reform* reflects familiar nominal-real tradeoffs, but tradeoffs that vary with pol-econ structure.
5. *Figures 1.14-21*: Macroeconomic Performance

E. The Cycle of Political Economy Framework (Figure 1.22)

F. The Political-Economic Implications of these Policies & Outcomes

1. Economic effects

a. Transfers:

- (1) Alleviate inequality (more or less as intended), but also
- (2) Hinder labor-market flexibility, contribute to UE, esp. long-term UE \Rightarrow \downarrow effect macro-policy
- (3) \Rightarrow Reform \approx familiar tradeoff.
- (4) Also drove growth in govt more generally, and through deficit-finance thereof, debt.

b. Debt:

- (1) Crowding Out (or In) v. Ricardian Equivalence
- (2) Not much real effect there, but seems appreciable effect on UE (-) v. INF (+)
- (3) \Rightarrow Reform \approx familiar tradeoff

c. Public Employment

- (1) Reduces productivity (growth)—ch.4 support—but also alleviates UE & ineq—previous support.
- (2) However, also exacerbates tradeoff inherent in monetary control of inflation
- (3) \Rightarrow Reform \approx familiar tradeoff

2. Political Consequences

- a. Economic effects *are* political effects!
- b. Developments created some new cleavages & reinforced some others
 - (1) E.g., public-debt asset-holders v. those deriving benefits from debt-financed public activity
 - (2) E.g., generational conflict, class conflict, and esp. the interaction of the two.
- c. Trends undermined or reinforced support for certain econ-policymaking institutions
 - (1) Those restraining or otherwise shaping fiscal activity;
 - (2) Those restraining or otherwise shaping monetary policy, etc.
- d. Govt shifting policy emphases (active fiscal to anti-inflationary monetary to *structural reform*) perhaps traceable to the dynamics of popular preferences in response to these policy and outcome developments.

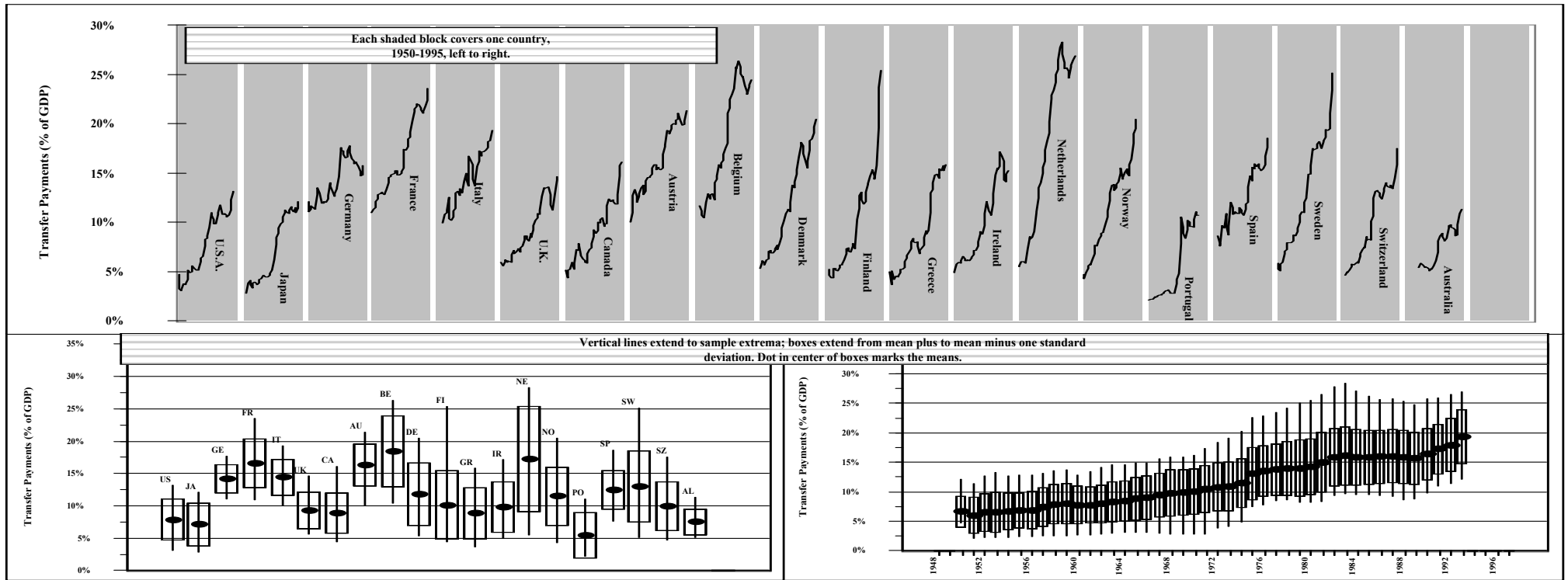
G. Conclusion & Situating the Contribution in Recent Literature

III. *Ch. II: Democratic Commitment to Social Insurance*

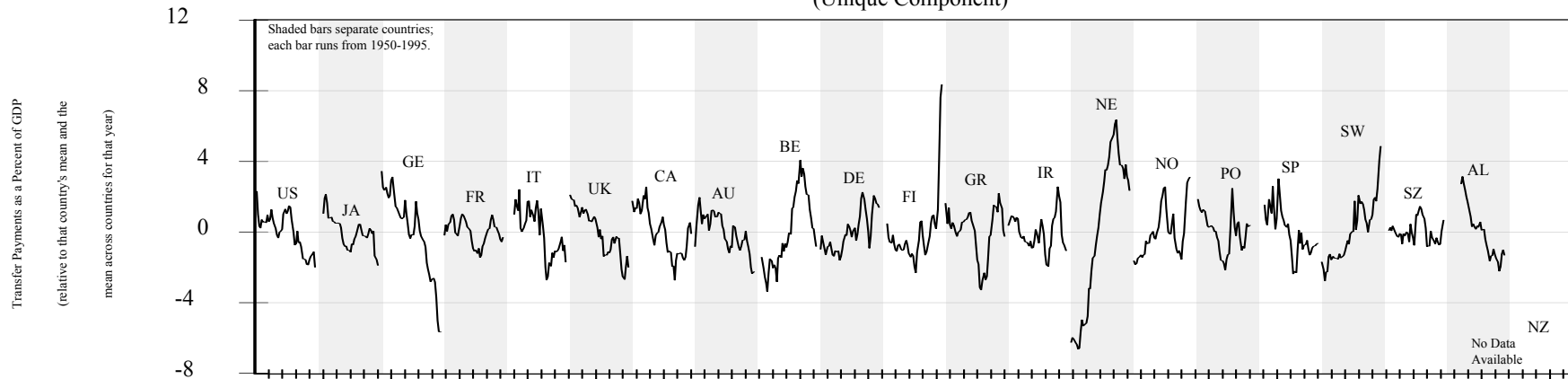
A. *Chapter Abstract:*

1. Until recently, public-transfer GDP-shares \uparrow dramatically in every dev'd dem.
 - a. Much positive theory purports explain this as direct consequence of differing distributions of political (votes) & economic (money) resources,
 - b. concluding, *inter alia*, that tax-&-transfer-system (T&T) size \uparrow w/ income-dist. skew.
2. Building from that, chpt. suggests theoretical additions & amendments deriving from further consideration democratic processes convert resources to influence.
 - a. Esp.: not everyone participates politically & participants/non-participants are not randomly selected. Together \Rightarrow aggregate participation rates mediate T&T responses to inequality, and, conversely, inequality mediates T&T responses to participation.
 - b. Spec'ly, relatively wealthy = higher propensity to participate politically \Rightarrow
 - (1) higher aggregate participation rates generally coincide w/ \uparrow democratic representation of relatively less well-off, suggesting democratic govts respond to greater inequality with larger T&T increases the higher the participation rate &, *vice versa*,
 - (2) \uparrow participation \Rightarrow larger T&T increases the more unequal the underlying income distribution.
 - c. Postwar T&T experiences developed democracies support that hypothesis empirically.

B. Lecture Overview: Chapter explores differential development since 1950 in size of tax-and-transfer systems (T&T) in developed democracies.



Transfer Payments as a Fraction of GDP
(Unique Component)



All data are from OECD National Accounts Volume II: Detailed Tables, various issues and data diskettes.
"Transfer Payments" are the sum of items 30-32 on Table 6: Accounts for General Government.

1. Much positive theory purports to explain differences & commonalities, as direct conseq. of diff. distrib's political (votes) & economic (money) resources. Crudely:
 - a. Democracies respond to median voter's interests because political influence is, in principle, distributed evenly (1 person, 1 vote) and because majorities rule.
 - b. Free-market capitalism tends to distribute income such that median person is poorer than average person (*i.e.*, income distribution is skewed right).
 - c. Median voter thus desires positive T&T. Specifically, more T&T the greater the income difference between median and mean.
 - d. \Rightarrow *ceteris paribus*, T&T increases in (pre-T&T) income or wealth distribution skew.
2. This chapter:
 - a. Considers more carefully connection b/w distribution of political & economic *resources* on one hand and policy *influence* on other.
 - (1) Pure fully-participatory median-voter democracy describes no actual political system.
 - (2) Translation of resources into influence occurs in highly institutionalized environments amplifying voice of some and muting that of others.
 - b. Having made these extensions, consider how well the argument, so-modified, can explain the postwar T&T experiences of developed democracies.
 - c. Consider the implications of this (differential) T&T expansion for the evolving politics and economics of economic policymaking in developed democracies.

C. Baseline Median-Voter Models of Tax-&-Transfer Systems: static, median-voter model of democratic choice over strictly proportional T&T system, intended as simplified, reduced-form of Romer (1975) / Meltzer-Richard (1978). Has Three Main Elements:

1. Output is decreasing in the T&T rate (at least beyond some point):

$$y_i = y_i(\tau) \quad ; \quad y' < 0 \quad , \quad y'' < 0$$

2. Considers only “strictly proportional” T&T systems: i.e., tax all persons and income equally and redistribute all the revenue in equal shares.

- a. Individuals taxed at rate, τ , on all income, y_i , & resulting revenues redistributed equally, $\frac{\sum \tau y_i(\tau)}{N} = \frac{\tau \sum y_i(\tau)}{N} = \tau \times \frac{\sum y_i(\tau)}{N} = \tau \bar{y}(\tau)$, to each person (N =total population).

- b. Assume utility for each person i is increasing in disposable income, say $ln(\text{DispInc})$:

$$u_i \equiv \ln \left[y_i(\tau) + \underbrace{\tau \bar{y}(\tau)}_{\text{transfers}} - \underbrace{\tau y_i(\tau)}_{\text{taxes}} \right] = \ln \left[\underbrace{y_i(\tau) + \tau \times \{ \bar{y}(\tau) - y_i(\tau) \}}_{\text{disposable (after T\&T) income}} \right]$$

- c. Optimal T&T rate for median voter (MV) will be implemented in pure democracy and is given by maximizing **(1)** with respect to $\tau \Rightarrow$

(Raise τ until larger share of pie get by transfers exactly offset by reduced size of pie)

$$FOC: \frac{\partial \left\{ \ln \left[y_i(\tau) + \tau \times \{ \bar{y}(\tau) - y_i(\tau) \} \right] \right\}}{\partial \tau} = 0$$

$$\Rightarrow \frac{1}{\left[y_i(\tau) + \tau \times \{ \bar{y}(\tau) - y_i(\tau) \} \right]} \times \left(y_i' + \{ \bar{y}'(\tau) - y_i'(\tau) \} + \tau \times \{ \bar{y}' - y_i' \} \right) = 0$$

$$\Rightarrow \left(y_i' + \{ \bar{y}'(\tau) - y_i'(\tau) \} + \tau \times \{ \bar{y}' - y_i' \} \right) = 0$$

$$\Rightarrow \tau \times \{ \bar{y}' - y_i' \} = -y_i' - \{ \bar{y}'(\tau) - y_i'(\tau) \}$$

$$\Rightarrow \tau_m^* = -\frac{y_m'}{\bar{y}' - y_m'} - \frac{1}{\bar{y}' - y_m'} \times \{ \bar{y}'(\tau) - y_m'(\tau) \}$$

$$\equiv a + b \cdot \{ \bar{y}'(\tau) - y_m'(\tau) \}, \text{ with } a < 0, b > 0$$

- d. In words: MV increases T&T rate until negative impact of tax on total output (smaller pie) just outweighs increased redistribution garnered (greater-share slice of it).
- e. \Rightarrow MV's optimal T&T rate increases in income distribution skew: $\{\bar{y} - y_m\}$.
- f. This is central result of such models, which primarily emphasized here & elsewhere.

3. Several ancillary results surround magnitudes of y' , y'' , $\partial(\frac{\partial y}{\partial \tau})/\partial y$; For examples:

- a. The more negative the cross derivative (the more the disincentive effect of taxes increases as go up the income ladder), the smaller the MV's desired T&T.
- b. *Distribution-neutral* increases in aggregate wealth reduce MV's desired T&T. (Follows from previous: if everyone wealthier (&/but skew preserved), then disincentive effect increases (& that the only effect), so desired τ decreases.

4. **H1: MV's desired T&T \uparrow in skew of income distribution (*cet. par.*).**

- a. **H2:** MV's desired T&T decreases w/ distrib.-neutral increases in agg. wealth.
- b. **H3:** The more negatively output responds to taxes and more responsiveness increases (absolutely) with income, the less T&T the MV desires.

D. *Dynamic Considerations: the Optimal Plan*

1. Examining the inter-temporal equivalent of the static utility (above) suffices:

$$U_i \equiv \sum_{t=0}^{\infty} \underbrace{(1 + \delta)^{-t}}_{\text{time discount}} \underbrace{(1 + \gamma(\tau))^t}_{\text{growth accum.}} \underbrace{\ln \left[y_i(\tau) + \tau \cdot \{ \bar{y}(\tau) - y_i(\tau) \} \right]}_{\text{period-by-period static utility}}$$

2. Main differences from static case:

- a. Individuals discount the future (at rate δ), &, beyond the output-*level* concerns above,
- b. *Growth-rate* also \downarrow by \uparrow T&T rate: $\gamma = \gamma(\tau)$; $\gamma' < 0$, $\gamma'' < 0$.

3. Thus, given positive discount and growth rates, MV prefers lower T&T rate in dynamic than in static model. Alternatively, and with more empirical relevance:

- a. **H4:** The less the MV discounts the future, the less T&T she desires.
- b. **H5:** The more negatively sensitive growth to taxes (i.e., the larger the disincentive effect of taxes), the less T&T the MV's desires.

E. *Democratic Transformation of Resources into Influence:*

1. *Time Inconsistency:* Once capital investments that \uparrow future income fixed made based on existing τ , MV can $\uparrow \tau$ *ex post* \Rightarrow non-distortionary redistribution. Implications (Kydland & Prescott 1977):
 - a. MV \uparrow T&T relative to ∞ -horizon optimum (one from “optimal plan” on previous slide) as uncertainty re: i.d. of future MV \uparrow . Intuitively, \uparrow uncertainty who next period’s median analogous to \uparrow discount rate, δ :
 - b. **C4a:** More uncertain MV that will be MV in future, more T&T the MV desires.
 - c. Logic should extend to horizon-length of any policymaking entity (e.g., parties, gov).
 - d. **C4b:** Longer policymakers’ expected policy-control, less T&T they seek.

2. *Parties and Partisan Representative Democracy:*

a. *Partisan Representative Democracy* ↓ time-inconsistencies inherent in pure MV democracy:

- (1) In any dynamic economy, individual MV's unlikely to remain MV's for long.
 - (a) In fact, individual MV likely effectively certain she will not be MV next period.
 - (b) Accordingly, she has zero reason weigh future b/c she has zero influence future policy or investment.
- (2) Parties aggregate voters into smaller #'s of competing interests, yielding correspondingly larger spaces between median incomes of each party than b/w each voter.
- (3) Perturbations in voters' income-distribution, ∴, alter which party controls policy in partisan representative dem. much less than would which voter would control it in pure MV dem.
- (4) Parties long-&indefinitely-lived entities, reputationally tied to future (see, e.g., Kreps 1990).
- (5) ∴ partisan representative democracy mitigates time-inconsistency problems relative to pure MV democracy by replacing agenda-control by finitely-lived, rapidly-changing individuals with control by longer-lived less-rapidly-changing parties.

b. [More of a purely theoretical point.]

- c. *Partisan Redistributive Politics*: MV in median party of govt (*the govt's median*) may not correspond to median-income voter in society.
- (1) *E.g.*, parties may not converge to society's median, rather jointly straddle it, b/c must appeal to activists generally more extreme than MV (Aldrich *et al.*), &/or to donors who also generally more extreme, &/or any of other reasons covered in context Clark's *Capitalism not Globalism*.
 - (2) Thus, MV in left party will typically be left of (poorer than) polity's MV, and right party's MV right (richer) ⇒
 - (3) **H6**: Left governments implement more T&T than right (even controlling for location of MV, although less so with such control than without).
 - (a) Obviously, same prediction emerges from class-based views of P.E. that rely less heavily on MV principles (Castles, Epsing-Andersen, Heclø, Korpi, **Hibbs**).
 - (b) Point simply that, partisan representative democracy, unlike strong Downsian-MV contentions (*a la* Clark), does not imply that partisanship of govt is irrelevant controlling for MV's interests.

3. *Political Participation & Redistribution*: not all vote, even in most-participatory of democracies, & several (e.g., Dye) argue that higher voter partic. \Rightarrow more T&T.

a. Two previous theoretical/empirical observations:

(1) Verba et al., Rosenstone & Wolfinger, Conway, Harrop & Miller, Nagel, and subsequent all demonstrate that: *relatively wealthy greater propensity to vote than relatively poor*.

(a) [at least in developed-democratic world; may differ in poorer, less-established democracies]

(2) *Voter-participation rates vary* considerably across democracies &, less so, over time.

(3) Do these obs. link more generally & comparatively to imply that country-times w/ higher VP have wealthier MV's relative to median persons than at lower VP so can derive relationship b/w VP and T&T Dye hypothesized & Pampel-Williamson & Hicks-Swank & others found?

b. Simple heuristic model [on next slide] in which...

(1) ...citizens vote or not based on cost-benefit analysis (C's & B's can be largely subjective) that may vary by country, by election, and by individual, and in which...

(2) ...individual net benefits to voting are, as above references established, increasing in individual's income, *inter alia*....

(3) ...other factors that increase (decrease) an individual's propensity to vote are not too highly positively (negatively) correlated with income...

(4) ...demonstrates: ***the proportion of the income distribution comprising the electorate increases from right (wealthy) to left (poor) as voter participation increases (on average, and controlling for aggregate wealth).***

c. \Rightarrow given underlying distribution, *effective* median income represented by electoral input into democratic process decreasing in VP (voter-participation) rate, *ceteris paribus*, and \therefore skew of raw income distribution and VP rates interact to determine T&T \Rightarrow

d. **H7: Positive effect of income-distribution skew on T&T (H1) \uparrow in VP.**

e. **C7a: VP effect on T&T \uparrow in skew of underlying income-distribution**

f. *The Simple Voting Model:*

(1) Vote if: **(4A)** net benefit voting positive, $b(y_{ijt}, X_{ijt}) > 0$, otherwise abstain.

(2) Define:

(a) $y_{ijt} \equiv i$'s income at time t relative to country j 's mean income at time t ,

(b) $X_{ijt} \equiv$ vector of other char's of i, j, t relevant to i 's voting decision.

(3) Assume: [all stronger than needed, but simple & jointly sufficient for key result]

(a) — $b(\cdot)$, the net-benefit-of-voting function, is the same for all i, j, t

(b) — $E[\partial b / \partial y] > 0$

(c) — $E[\partial^2 b / \partial y \partial x] = 0$ for all $x \in X$

i) Empirical regularity that rel. wealthy higher voting propensity $\Rightarrow E[\partial b / \partial y] > 0$.

ii) Assumption $E[\partial^2 b / \partial y \partial x] = 0 \quad \forall x \in X$ is workhorse. (Need that other factors that affect vote propensity fall not too dissimilarly on relatively well-off & poor.)

(4) Voter participation \equiv **(4B)** $VP_{jt} = \sum_i [b(y_{ijt}, X_{ijt}) > 0]$

(5) \therefore , if **(4A)** and **(4B)**, then **(4C)**: $VP_{jt} > VP_{ks} \Rightarrow E(y_{ijt} | b_{ijt} = 0) < E(y_{iks} | b_{iks} = 0)$; i.e., expected income of marginal "just-voter" higher in lower-participation country

- g. What about **other modes of political participation** (e.g., contributions, lobbying, contacting representatives, letters to editors, etc.)? They also \Rightarrow political influence.
- (1) This strengthens rather than undermines empirical relevance of **H7** and **C7a**.
 - (a) As VP \downarrow , prevalence & influence of alternative modes participation seems logical \uparrow , at least relatively;
 - (b) and, socioeconomic status correlates even more strongly with other forms of political participation than with voting (see e.g. Verba et al., Conway, Rosenstone-Hansen).
 - (2) \Rightarrow as VP \downarrow , not only does electoral representation of relatively less-well-off \downarrow , but political influence non-voting participation likely \uparrow & relatively poor even less-well represented there.
 - (3) \Rightarrow *Voter-participation a legitimate summary statistic for participation more generally* (how intended in the theoretical & empirical analyses); if any, \downarrow VP understates the \downarrow of poorer pop's pol influence

F. The Data

1. *Dependent Variable*: T&T system-size (TT) \equiv “social security benefits, social assistance grants, & unfunded employee pension & welfare benefits” as share of GDP (items 30-32 in OECD National Accounts Vol. II: Detailed Tables).
2. *Economic Controls*:
 - a. Unemployment (UE: internationally comparable annual rates: OECD sources).
 - b. Age (POP65: population 65+ as share of total: *UN Demographic Yearbook*).
 - c. Inflation (CPI: consumer-price inflation: IMF sources).
3. *Other Controls*: Many political-economic theories don’t distinguish whether effects of these factors should occur in T&T or elsewhere on budget; many have both arguments & counter-arguments in literature, but controlling seems prudent:
 - a. Wealth & Wagner’s Law {Y: $\ln(\text{real GDP per capita})$: *Penn World Tables 5.6*}
 - (1) Wealthier countries, like wealthier people, spend greater shares of income on *luxuries* (=def. of luxury, actually). Social Insurance is luxury; wealthier countries greater share GDP on it.
 - (2) If law applies specifically to T&T, it works contrary to **H2** (that, *ceteris paribus*, wealthier average demands smaller T&T).
 - (a) Both forces could be present. If transfers luxuries (poorer countries generally offer little, so probably are) T&T effect of wealth will reflect net of these countervailing but not logically exclusive, forces.

- b. Trade Openness: (Cameron, Katzenstein, Garrett, Rodrik) (OPEN: exports + imports as share of GDP: IMF sources).
- (1) More open economies \Rightarrow higher demand for social insurance (“battered by forces outside domestic control”). Or, conversely:
 - (2) Standard globalization \Rightarrow KWS retrenchment story.
 - (3) [will see this *globalization dilemma* up close in Hays’ book to come]
- c. Labor-Organizational (i.e., Union) Strength: (UDEN: union members as share of labor force: Golden, Lange, and Wallerstein).
- (1) Organized labor = Political force for high “social wage”.
- d. Fiscal (De)-Centralization (Weingast-Shepsle-Johnsen, Sharpe, Peterson). (CTAX: central government’s share of general govt. revenues: OECD sources).
- (1) May be an aspect of tax-system simplification.
 - (2) Also indicate concentration spending policies authority @ ctr, where model & measures apply.
- e. Fiscal Illusion (Buchanan-Wagner; Downs). Indirect (ITAX: complexity) & total taxes (TTAX: simplicity) as shares of gen. govt. tot. revenues: OECD sources).
- (1) Direct taxes (& taxes) simpler, more-transparent than indirect (non-tax revenue-sources).
- f. Electoral Manipulation of T&T (Tufte 1978) (ELE: electoral-year indicator).
- (1) Indicator sums to 1 over 365 days preceding election.

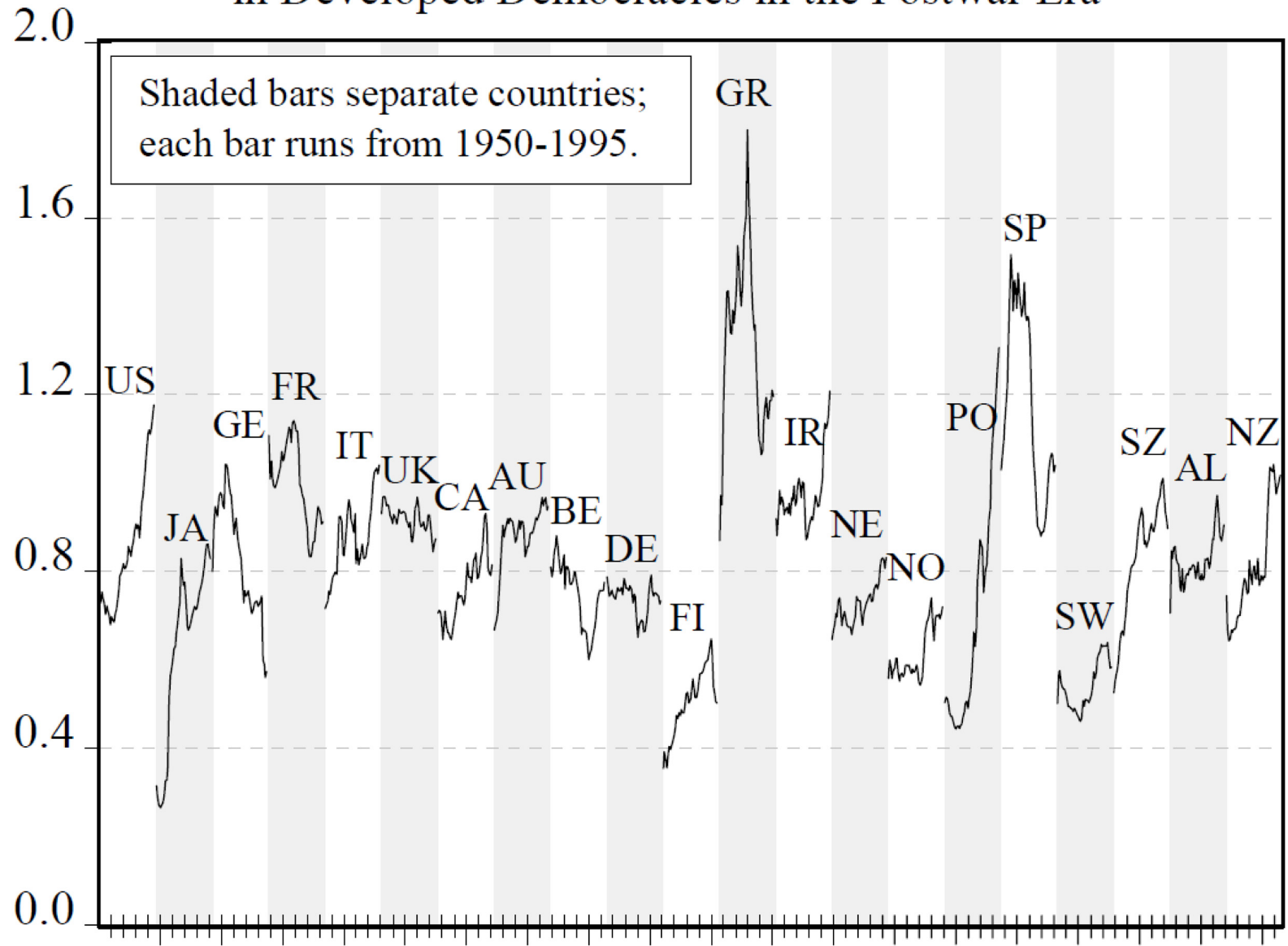
4. *Data Operationalizing the Arguments Emphasized Here*

a. **H1 and H7, C7a: Income Distribution and Participation**

- (1) Voter Participation (VP) (Mackie & Rose 1991, *EJPR Data Annuals*). Not annually observable; reasonable annual estimate = moving avg of this & previous 3 years.
- (2) Income Skew has proven impossible [situation improving in recent years though] to measure directly cross-nationally and cross-temporally comparably \Rightarrow suggested alternative expedient based on manufacturing-wage index & GDP *per capita*, indexed equivalently (IMF sources):
 - (a) To degree manufacturing workers = median actors, or their wage-income plight tracks that of median actors, ratio of GDP-*per-capita* to manufacturing-wage indices \Rightarrow measure of mean-to-median ratio: cross-time comparable w/in country, =1 in index yr (1986), & \uparrow in income skew.
 - (b) Then cross-country comparable GINI-index measures (OECD & LIS sources, for 1986 or near as possible), normalized to 1 in a base country (US), and multiplied by w/in country measure \Rightarrow cross-country *and* cross-time comparable index of income skew
 - (c) Call it: the *relative wage position of manufacturing workers (RW)*. RW increases in income disparity & compares all other country-times to US 1986 where RW=1.

Relative Wage Position of Manufacturing Workers (Income Disparity) in Developed Democracies in the Postwar Era

Relative Wage Position of Manufacturing Workers
US 1986 equals 1; Higher indicates more disparity



Manufacturing Wage and GDP per Capita Indices from IMF IFS CD-ROM.
Data made cross-nationally comparable by GINI indices from the LIS.

- b. **H2: Aggregate Wealth** (see discussion under Wagner's Law)
- c. **H3: Inefficiency Effect of Taxes & Elasticity *w.r.t.* Income** (not tested)
- d. **H4: Median Voter's Discount Rate** (not tested)
- e. **C4a: MV's Uncertainty**:
 - (1) If variation w/in income distribution across time, the theoretically relevant item, correlates w/ variation income-distribution skew across time (intuitive, perhaps, but not at all necessary), then moving std-dev RW (**SDRW**) can approx. MV's uncertainty for whether will remain so.
 - (2) SDRW = 5-yr, centered, moving-standard-deviation of RW.
- f. **C4b: Policymaker's Expected Duration of Policymaking Control**:
 - (1) To ° govts control policy, ° hazard rates constant w/in govt, & ° govts' predictions of own hazard rates small MSE, pol-mkrs' expected duration agenda-control well approximated by inverse of actual duration incumbent (**HR**: Woldendorp-Keman-Budge & other sources).
- g. **H5: Inefficiency (Growth) Effect of Taxes & Elasticity *w.r.t.* Income** (not tested)
- h. **H6: Government Partisanship**:
 - (1) Code parties 0=far-left to 10=far-right. (Rescale (0-10) & avg. published expert-indices: Laver-Hunt, Laver-Schofield, etc..) # of cab. min.'s of each party in every govt (Lane et al., Woldendorp et al.) ⇒ avg left-right position=partisan *center of gravity* (**CoG**).

G. Methodology: Specifying the Test Equation

$$\begin{aligned} \Delta TT_t = & \mathbf{C}'\mathbf{B}_0 + \beta_1 TT_{t-1} + \beta_2 \Delta UE_t + \beta_3 UE_{t-1} + \beta_4 \Delta POP65_t + \beta_5 POP65_{t-1} \\ & + \beta_6 \Delta CPI_t + \beta_7 CPI_{t-1} + \beta_8 \Delta(\Delta Y_t) + \beta_9 \Delta Y_{t-1} + \beta_{10} Y_{t-2} \\ & + \beta_{11} OPEN_{t-1} + \beta_{12} CTAX_{t-1} + \beta_{13} ITAX_{t-1} + \beta_{14} TTAX_{t-1} + \beta_{15} UDEN_{t-1} \\ & + \beta_{16} \Delta ELE_t + \beta_{17} ELE_{t-1} + \beta_{18} \Delta CoG_t + \beta_{19} CoG_{t-1} + \beta_{20} \Delta HR_t + \beta_{21} HR_{t-1} \\ & + \beta_{22} SDRW_{t-1} + \beta_{23} VP_{t-1} + \beta_{24} RW_{t-1} + \beta_{25} VP_{t-1} \cdot RW_{t-1} + \varepsilon_t \end{aligned}$$

⇒

$$\begin{aligned} TT_t = & \mathbf{C}'\mathbf{B}_0 + \underbrace{(1 + \beta_1) TT_{t-1}}_{\text{dynamics, slow adjust}} + \underbrace{\beta_2 \Delta UE_t + \beta_3 UE_{t-1}}_{\text{unemploy-insure beneficiaries}} + \underbrace{\beta_4 \Delta POP65_t + \beta_5 POP65_{t-1}}_{\text{public-pension beneficiaries}} \\ & + \underbrace{\beta_6 \Delta CPI_t + \beta_7 CPI_{t-1}}_{\text{infl: incomplete effective indexation?}} + \underbrace{\beta_8 \Delta(\Delta Y_t) + \beta_9 \Delta Y_{t-1} + \beta_{10} Y_{t-2}}_{\text{growth and H2 \& Wagner's law}} \\ & + \underbrace{\beta_{11} OPEN_{t-1}}_{\text{embed-lib or global}} + \underbrace{\beta_{12} CTAX_{t-1} + \beta_{13} ITAX_{t-1} + \beta_{14} TTAX_{t-1}}_{\text{fiscal-system concentration and opacity}} + \underbrace{\beta_{15} UDEN_{t-1}}_{\text{labor power}} \\ & + \underbrace{\beta_{16} \Delta ELE_t + \beta_{17} ELE_{t-1}}_{\text{Tuftean cycles?}} + \underbrace{\beta_{18} \Delta CoG_t + \beta_{19} CoG_{t-1}}_{\text{Hibbsean cycles?}} + \underbrace{\beta_{20} \Delta HR_t + \beta_{21} HR_{t-1}}_{\text{govt time-horizons}} \\ & + \underbrace{\beta_{22} SDRW_{t-1}}_{\text{MV stability}} + \underbrace{\beta_{23} VP_{t-1} + \beta_{24} RW_{t-1} + \beta_{25} VP_{t-1} \cdot RW_{t-1}}_{\text{participation-conditional median-voter T\&T model}} + \varepsilon_t \end{aligned}$$

\mathbf{C} = set of TSCS controls: (1) ΔTT_{t-1} , (2) country indicators, (3) indicators for non-democratic Greece, Portugal, Spain, and (4) average TT in other countries in the sample in that year.

Results: Dep. Var.=Change in Transfers Share of GDP (ΔTT_t)

(Estimated by OLS+PCSE)

Variable	Coefficient	P.C.S.E.	p-Level	Joint Hyp. Test
CONTROLS				
TT_{t-1}	-0.0601	0.0139	0.0000	—
ΔUE_t	+0.2238	0.0308	0.0000	p \approx 0.0000
UE_{t-1}	-0.0131	0.0113	0.2446	
$\Delta POP65_t$	+0.1382	0.1393	0.3215	p \approx 0.4426
$POP65_{t-1}$	+0.0265	0.0300	0.3762	
ΔCPI_t	-0.0365	0.0075	0.0000	p \approx 0.0000
CPI_{t-1}	-0.0049	0.0066	0.4559	
$\Delta(\Delta Y_t)$	-8.0556	0.9409	0.0000	p \approx 0.0000
ΔY_{t-1}	-5.0930	1.3323	0.0001	
Y_{t-2}	+0.3621	0.2023	0.0739	
$OPEN_{t-1}$	+0.1602	0.3565	0.6534	—
$CTAX_{t-1}$	-0.2131	0.5175	0.6806	—
$ITAX_{t-1}$	+0.8443	0.8535	0.3229	—
$TTAX_{t-1}$	+0.1051	1.0002	0.9164	—
$UDEN_{t-1}$	+0.0078	0.0035	0.0266	—
ΔELE_t	+0.1043	0.0535	0.0518	p \approx 0.0274
ELE_{t-1}	+0.2259	0.0847	0.0078	
ΔCoG_t	-0.0391	0.0239	0.1030	p \approx 0.1755
CoG_{t-1}	-0.0215	0.0155	0.1670	
ΔHR_t	-0.1010	0.1072	0.3465	p \approx 0.5567
HR_{t-1}	-0.0105	0.1081	0.9223	
$SDRW_{t-1}$	+2.4838	1.4956	0.0972	—
VP_{t-1}	-0.3688	0.5498	0.5026	p \approx 0.0203
$VP_{t-1} \cdot RW_{t-1}$	+1.1382	0.4720	0.0162	
RW_{t-1}	-0.3280	0.3396	0.3346	p \approx 0.0451
Number of Observations (Degrees of Freedom)				701 (650)
Adjusted R² (Std. Err. of the Estimate)				0.477 (0.478)
LM Residual Correlation Test, 1 Lag (least-favorable lag for test)				0.4949

H. Core Results →

I. Ancillary Results ↓

$$\left. \begin{aligned} \frac{\partial TT}{\partial RW} &= -.33 + 1.14 \times VP \\ &\quad (.340) \quad (.472) \\ \frac{\partial TT}{\partial VP} &= -.37 + 1.14 \times RW \\ &\quad (.550) \quad (.472) \end{aligned} \right\} \Rightarrow \frac{\partial^2 TT}{\partial VP \partial RW} = \frac{\partial \left(\frac{\partial TT}{\partial RW} \right)}{\partial VP} = \frac{\partial \left(\frac{\partial TT}{\partial VP} \right)}{\partial RW} = +1.14_{(.472)}$$

1. Coefficient on **lagged TT** is negative (-.06) w/ t-statistic $T > 4.3$, therefore...

a. ...should satisfy any unit-root concerns.

b. **...T&T adjusts very slowly**; 94% ($1 - .06 = .94$) of shock lasts into next year, 94% of that into following, *etc.* [Note: this even with country fixed-effects.]

c. **...long-run impact of permanent shocks $16.67 \pm (= .06^{-1})$ times immediate impact, and it takes $37 \pm (48 \pm)$ yrs for 90% (95%) of shock's long-run impact to elapse.**

2. Economic Controls:

a. **UE: strong ($p < .0001$), but short-term, ↑ effect on T&T.**

(1) 1%pt. ↑ UE ⇒ transitory 0.22% of GDP increase in T&T. Little long-run effect of UE level.

(2) Suggests policymakers eventually ↓ generosity to accommodate long-term ↑ UE.

b. **Age dist.: positive as expected, but surprisingly weak statistically.**

(1) Neither transitory nor permanent effect significant at usual levels ($p \approx .32$, $p \approx .38$, joint $p \approx .44$).

(2) Substantive magnitude of long-run effect non-negligible though: OECD-avg 5.5% ↑ in POP65 in 1950-95 could account for over +2.4% of GDP, almost 1/6 of OECD T&T trend.

- c. **Inflation: negative, highly stat'ly significant ($p < .0001$), but substantively small transitory-effect, negligible & insignificant long-run effect ($p \approx .456$).**
Transitory effect: 1%opt \uparrow CPI infl \Rightarrow \downarrow TT only about 0.035% of GDP.

3. Other Theories:

- a. **Trade Openness and Tax-Structure variables insignificant.**
- (1) Largest & most-nearly significant estimate regards indirect taxes; 10%of GDP \uparrow associated w/ long-run +1.4% of GDP T&T \Rightarrow possibly some fiscal-obfuscation effect.
 - (2) Evidence direct effect of openness very weak (but recall: others' TT on right-hand side, & that strongly supported, so evidence of interdependence is strong).
 - (3) Despite much debate, seems neither terribly much to gain or fear from T&T decentralization
- b. **Union Density substantively & statistically significant ($p \approx .027$).** +10%opt union density estimated to \Rightarrow +.13% of GDP long-run \uparrow T&T.

4. More Ancillary Results

- a. **GDP-per-capita Growth and Levels:**
- (1) **Trans. & perm. growth effects very strongly ($p < .0001$, $p \approx .0001$) **negative & big.** *GDP per capita* levels also large positive effect & moderately significant ($p \approx .074$).**
 - (2) **Initial \downarrow TT response might supp. **H2**, but stat sig. & subst. size rather suggest automatic effect.**
 - (3) **\Rightarrow forces described by **H2** not rejected, but subst'ly swamped short-run by automatic growth-effects & long-run by Wagner's Law.**

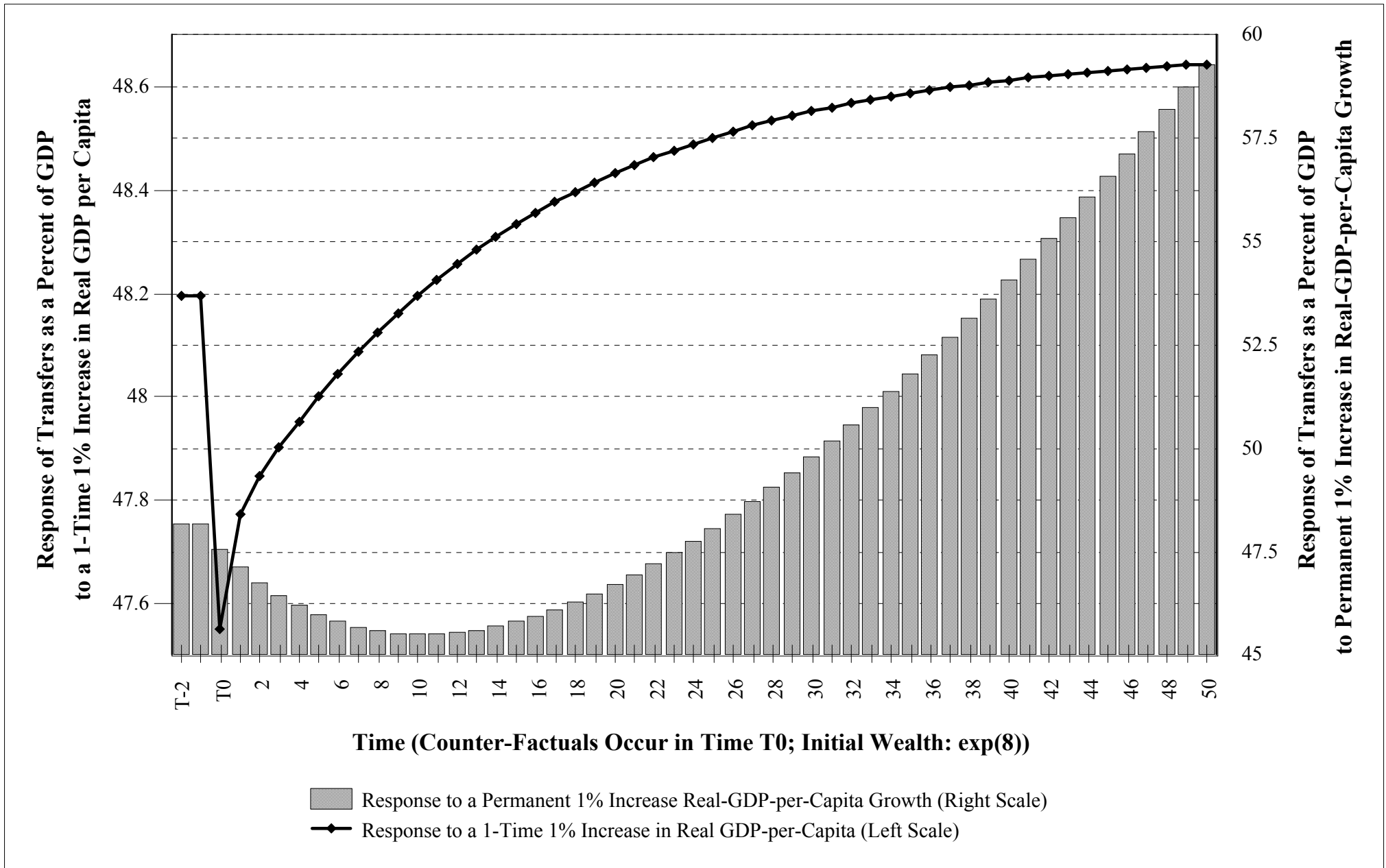


Figure 18: Response of T&T-system size to Real-GDP-per-Capita Growth and Levels

b. *Electoral Manipulation of T&T:*

- (1) Strong, contrary to much pessimism about electoral budget-cycles in literature, but supports Tufte's emphasis transfers & Clark's on electoral (over partisan?).
- (2) ΔELE_t & ELE_{t-1} coeff.'s reveal \uparrow TT 0.10% of GDP in yr before elections ($p \approx .052$) & further \uparrow 0.12% of GDP year *after* ($p \approx .022$). (Joint significance: $p \approx .027$.)
- (3) Given slow adjustment-rate T&T, & that all dems have elections minimally every 5 yrs, \Rightarrow **impact of 1 pre-electoral manipulation not nearly faded when another occurs:**
- (4) Substantive Notes about this result (SEE FIGURE 2 SLIDES DOWN):
 - (a) **T&T cycle peaks the year *after* an election.** Less variable, higher mean year after.
 - (b) **Frequency of elections sizable effects long-run T&T system-size.** Dems w/ elects every 2 (3,4) yrs grow T&T systems $> 1\%$ (0.5%, 0.19%) of GDP larger than do ctrys w/ elects every 5yrs.
 - (c) **Amplitude of electoral T&T cycles \uparrow in time b/w elections:** .008%, .074%, .116%, and .141% of GDP for 2-, 3-, 4-, and 5-year cycles respectively.

- (d) US has odd electoral-cycle pattern (Pres. every 4, Reps. every 2, 1/3 of Sens. every 2, & all in 1st wk Nov) that illustrates all three results. (SEE FIGURE NEXT SLIDE)
- i) Given coding of the system, US pre-electoral indicator cycles: [.049,.284,.115,.663], w/ last being the presidential-election year.
 - ii) Given estimated T&T dynamics & coeff's on ΔELE_t & ELE_{t-1} , this \Rightarrow long-run T&T cycle (*ceteris paribus*) of [1.07, 1.04, 1.02, 1.04].
 - iii) Cycle peaks in year *after* presidential election.
 - iv) Compared to a simple 4-yr cycle ([0, 0, 0, 1] \Rightarrow [.9997, .9451, .8840, .9304]), \Rightarrow smaller amplitude T&T cycles and larger long-run T&T-system.
 - a) Former b/c off-presidential-election years still have some electoral manip. & so some T&T response;
 - b) & latter b/c, relatedly, US has more frequent elections.
- (e) **Why typically weaker results in prior empirical studies (i.e., excepting Tufte & Clark)?**
- i) Tufte's (1978) focus on transfer payments well-founded but too-often ignored
 - ii) Dynamics of dependent variable & of electoral cycle itself received insufficient attention
 - iii) Empirical focus often on frequent-election countries (US) where magnitudes small (& for other reasons).
 - iv) As Schultz (1995) reminded, (see Tufte 1978), policymakers will attempt manipulation only to degree a *foreseen* election is *expected to be close*. This important variation has not generally been accommodated.
 - v) Seasonally adjusted data.
 - vi) **Pre- AND Post-electoral manipulation: Why pre- & post-electoral surges?**
 - a) **Challengers! Consider pool of pre- and post-electoral policymakers...**
 - b) **Stickyness, incrementalism, etc. (*yawn*)**
 - c) **Mismatch b/w calendar-yr measured ELE & fiscal-yr measured BDGT (*yyaawwnn*)**
 - vii) Time to re-open analysis of Electoral Policy Cycles? 'Rumors of their demise have been greatly exaggerated' (apologies Mr. Twain).

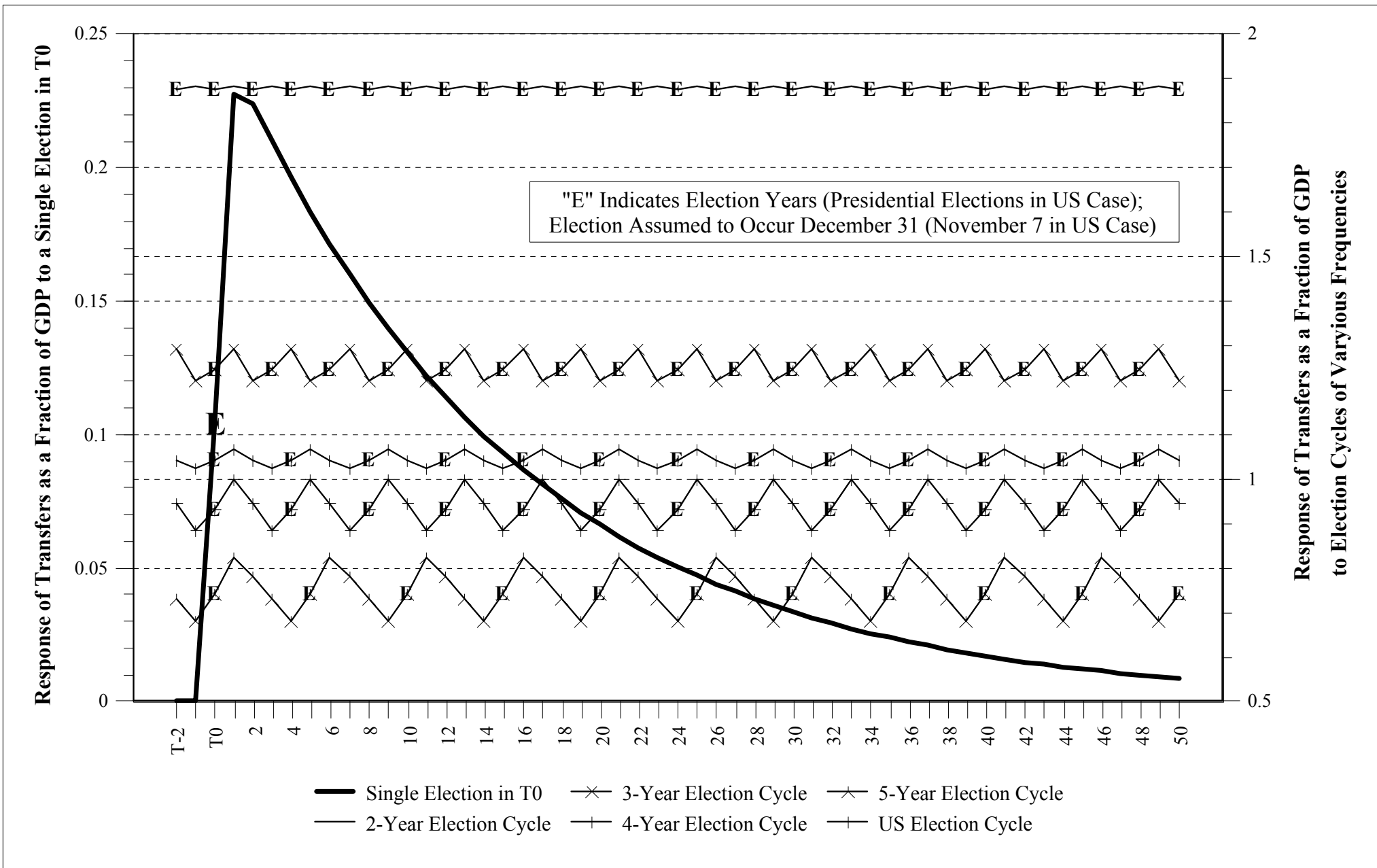


Figure 19: Response of T&T Systems to a Single Election and to Regular Elections of Various Frequencies

5. **Government Partisanship:** (note: modest results support our moderated read of Clark)
- Correctly signed, but trans. & perm. effects attain only marginal significance ($p \approx .103$, $p \approx .167$, jointly: $p \approx .176$) and not so large substantively.
 - But these are partisan effects net of underlying structure of interests as reflected in other variables in equation, esp. net of income-distribution skew (i.e., net of MV).
 - Partisan cycles appreciable under some democratic-institutional conditions:

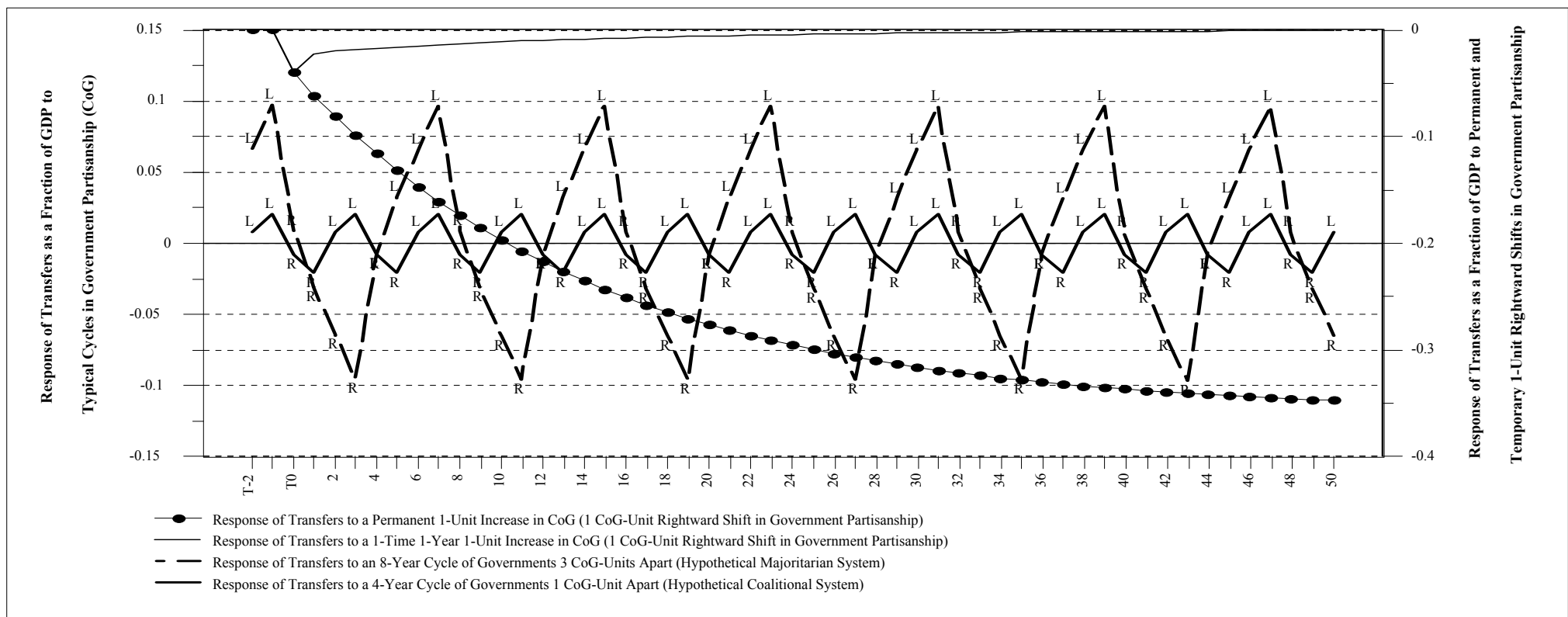


Figure 20: T&T-system response to temporary shifts, permanent shifts, and regular oscillations in government partisanship (CoG).

- Typical partisan T&T cycles in majoritarian democracies noticeable (0.2% of GDP peak-to-peak) but generally tiny in coalitional democracies (<0.05% of GDP).

6. **C4a and C4b** Government and Median-Voter Uncertainty:

- a. **C4b: incumbent government's uncertainty that will remain increases T&T.** No evidence that govt instability increases T&T. If anything, reduces it.
- b. **C4a: median voter's uncertainty that will remain so increases T&T.**
 - (1) Estimates indicate std-dev increase in SDRW (+0.023) increases T&T by almost 1% of GDP in long run, and moderately significant ($p \approx .07$).
- c. Possible conclusions from these results:
 - (1) Time inconsistency not so problematic for T&T as seems in other contexts (e.g., monetary policy, capital taxation); instead, T&T response to income-distribution variance-across-time reflects extra political demand for social insurance against income-volatility.
 - (2) Time-inconsistency as strong in T&T, but more evident at median-voter than govt level b/c other considerations operate to reduce T&T as govt instability increases.
 - (a) E.g., possibly: stable govts become stable precisely b/c they respond to political uncertainty by manipulating transfer payments?
 - (b) E.g., possibly: threat of replacement improves efficiency / reduces manipulability of T&T?

J. **H1, H7 & C7a** Interactive Effects of *voter participation* & *income distribution*

1. **H1 &/or H7/C7a** supported: income distribution, voter participation, &/or their interaction significant statistically (joint significance: $p \approx .05$)

a. Income distribution, $H_0: b_{rw} = b_{vp \cdot rw} = 0 \Rightarrow p \approx .045$, & voter participation, $H_0: b_{vp} = b_{vp \cdot rw} = 0 \Rightarrow p \approx .02$, also supported.

b. Interaction supported, $H_0: b_{vp \cdot rw} = 0 \Rightarrow p \approx .016$

c. \Rightarrow Voter participation, income distribution, *and* interaction contain statistically significant information about development of T&T systems.

(1) (Not massively statistically or substantively significant, but appreciable, worth mention.)

2. **FIGURE:**

a. *Top-left* plots immediate T&T response to $0.1 \uparrow$ in income-disparity as function of voter-participation rate in that polity; i.e., plots $b_{rw} + b_{vp \cdot rw} VP$ (& 80% c.i.).

b. Countries labeled at postwar-avg VP (almost 90% of VP variation cross-national).

c. *Top-right* does same for $0.1 \uparrow$ in VP rate (almost 70% RW var. cross-national).

d. Bottom-left & right plot long-run responses at country-avgs of other variable.

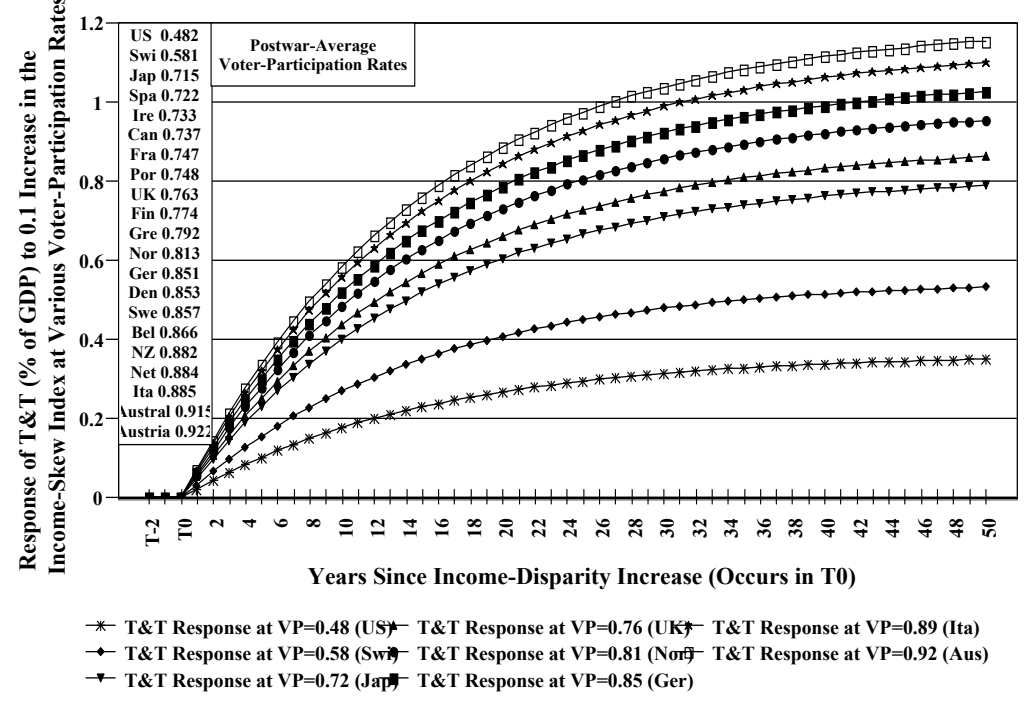
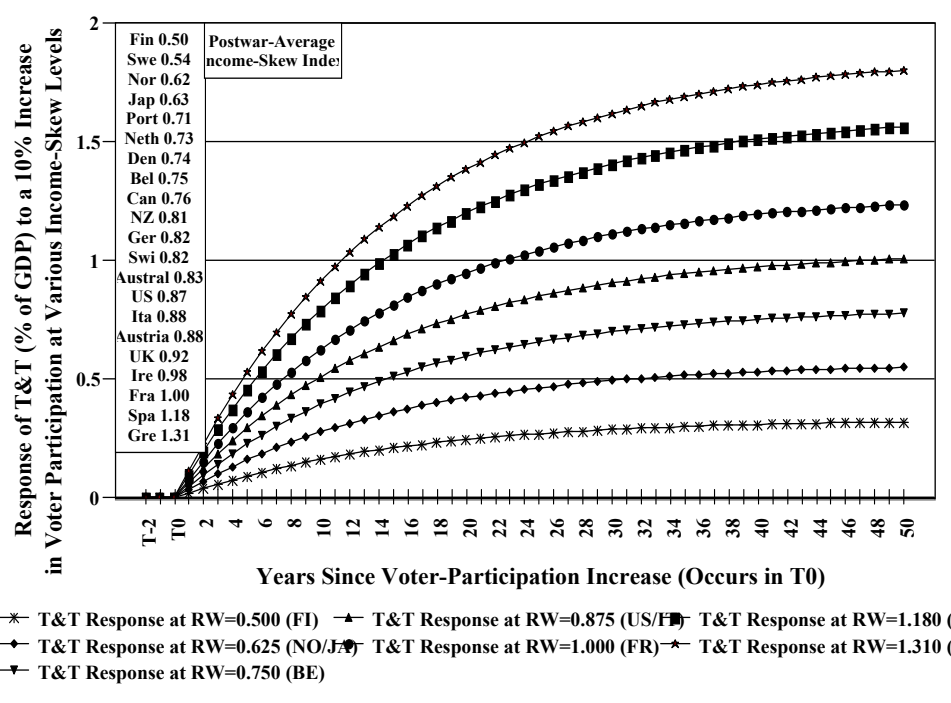
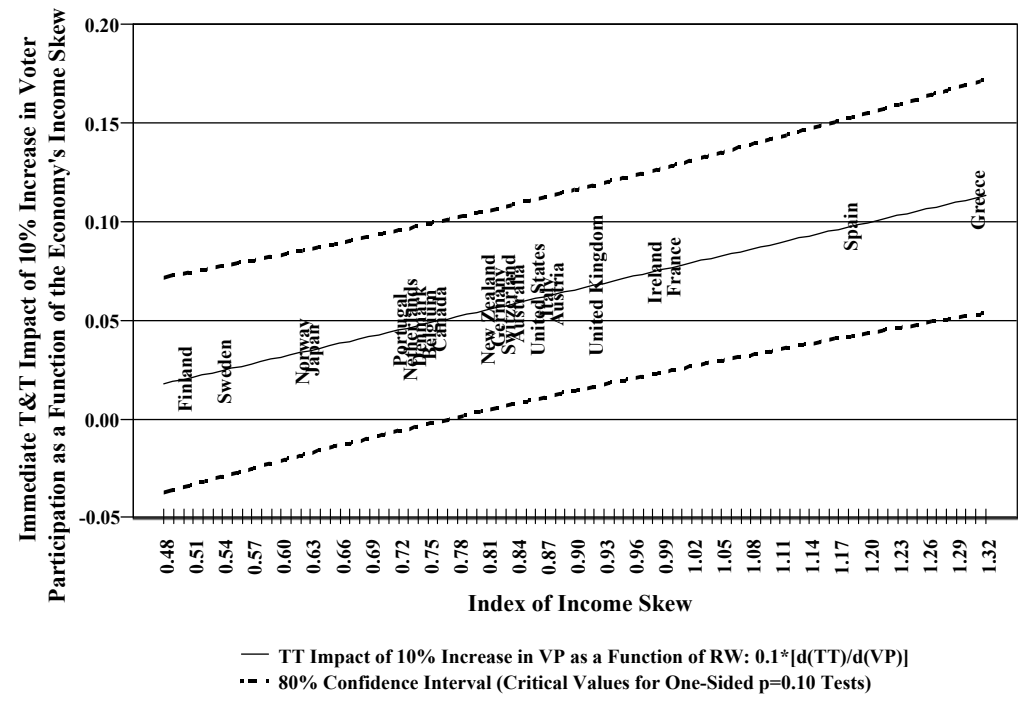
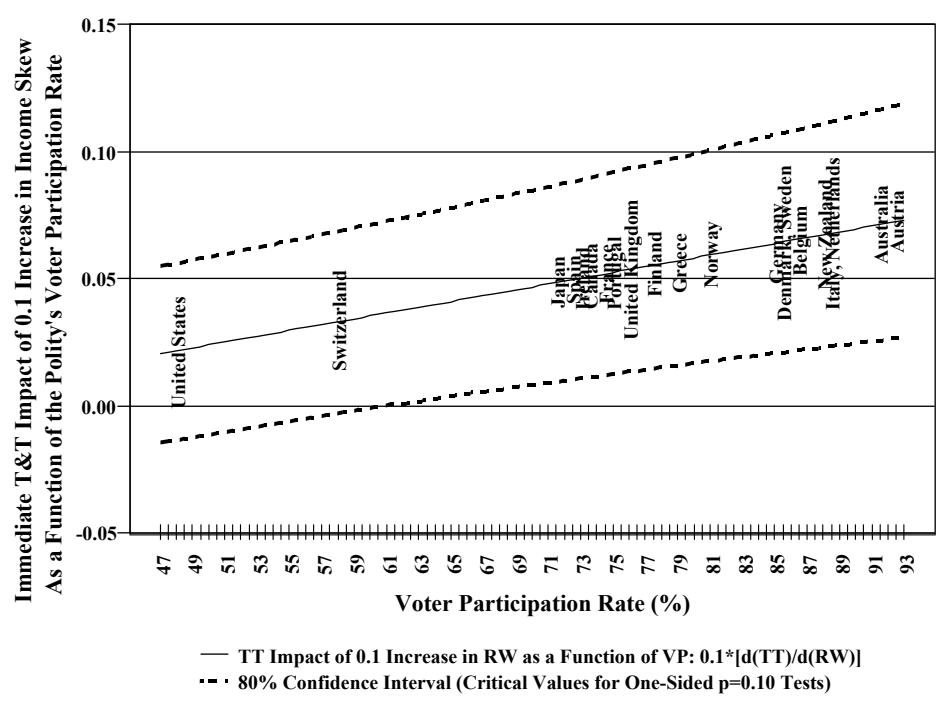


Figure I.21: Estimated Short-Run and Long-Run T&T Impacts of Increases in Income Skew as a Function of Voter Participation and in Voter Participation as a Function of Income Skew

K. Conclusions Regarding the Core Theoretical Extension

- 1.** Increased income disparity increases T&T (**H1**), and this relationship is larger and more certainly positive at higher voter-participation rates (**H7**).
 - a. In democracies with very low participation, *e.g.* the US and Switzerland, the T&T response to increased income-disparity is small & statistically insignificant.
 - b. Conversely, in highly participatory democracies, *e.g.* Australia and Austria, the T&T response to increased income-disparity is statistically & substantively significant.
- 2.** (Voter) Participation generally \uparrow T&T, as argued before, *and* this relationship also more positive & significant as underlying income-disparity increases (**C7a**).
 - a. Substantively, these too can be appreciable: in US1986 (RW-index's baseline: RW=1), 10%_{opt} \uparrow VP \Rightarrow immediate .08% and long-run 1.28% of GDP \uparrow T&T.
 - b. Bottoms plot est. T&T responses to 10%_{opt} \uparrow in inc.-disparity (**RW**) & v-part (VP), respectively, at substantively informative levels other var. Countries' p.w.-avg VP (democratic periods only) & RW listed, so can see approx. T&T-response in any ctry.

L. Empirical Conclusions: How well does positive PE of T&T-systems as expanded here explain pattern of postwar T&T experiences in **Fig. 1**?

1. Shared Time-Path: $14.5 \pm 0\%$ of GDP T&T-increase from 1950-93 (*figure*).
 - a. Key factor underlying commonality was long-run effect of agg. wealth & growth.
 - (1) Other economic conditions, UE and inflation, much smaller, if any, long-run effects, but medium-term fluctuations key roles in shared med.-term fluctuations.
 - (2) Population 65+ \uparrow from 8.75% to 14.25% over 1950-93 period \Rightarrow account $1.7 \pm 0\%$ of GDP T&T \uparrow , if relevant coefficient estimate, $p \approx .37$, trusted.
 - (3) \Rightarrow Over half the OECD-average T&T \uparrow attributable to fairly automatic responses of existing T&T policies to such economic & demographic conditions.
 - b. Other structural-political developments:
 - (1) Labor-organizational strength: std-dev ($16.2 \pm 0\%$) union-density \uparrow would account for substantively and statistically significant $2.1 \pm 0\%$ of GDP T&T \uparrow .
 - (2) Voter fiscal illusion & complexity of revenue-generation maybe important. Not statistically significant, but magnitude \approx that of the estimated demographic effect.
 - (3) But avg trends, UDEN \uparrow -then- \downarrow & tax-struct. toward more-transparent sys, worked against gen. \uparrow trend T&T, resp'ly inducing \uparrow -then- \downarrow T&T $.25 \pm 0\%$, & to \downarrow T&T 1.4% of GDP.
 - (4) Elects, elect freq, gov part, & inc-dist volatility all sim'ly played key roles explain cross-ctry & cross-ctry-time var, but had little shared time-trend, so not central shared T&T-expand.
 - c. Income dist. & v-part. movements, however, very important in some countries:
 - (1) Std-dev adverse-moves in either would contribute $3 \pm 0\%$ of GDP in T&T where both high, but much less relevant in country-times where one or both low.
 - (2) Their OECD-avg paths accounted for $1 \pm 0\%$ of GDP of shared upward T&T-trend.
 - d. \Rightarrow empirical model explains \approx half common T&T trend, $6 + 1.7 + 1 - 1.4\% = 7.3 \pm 0\%$

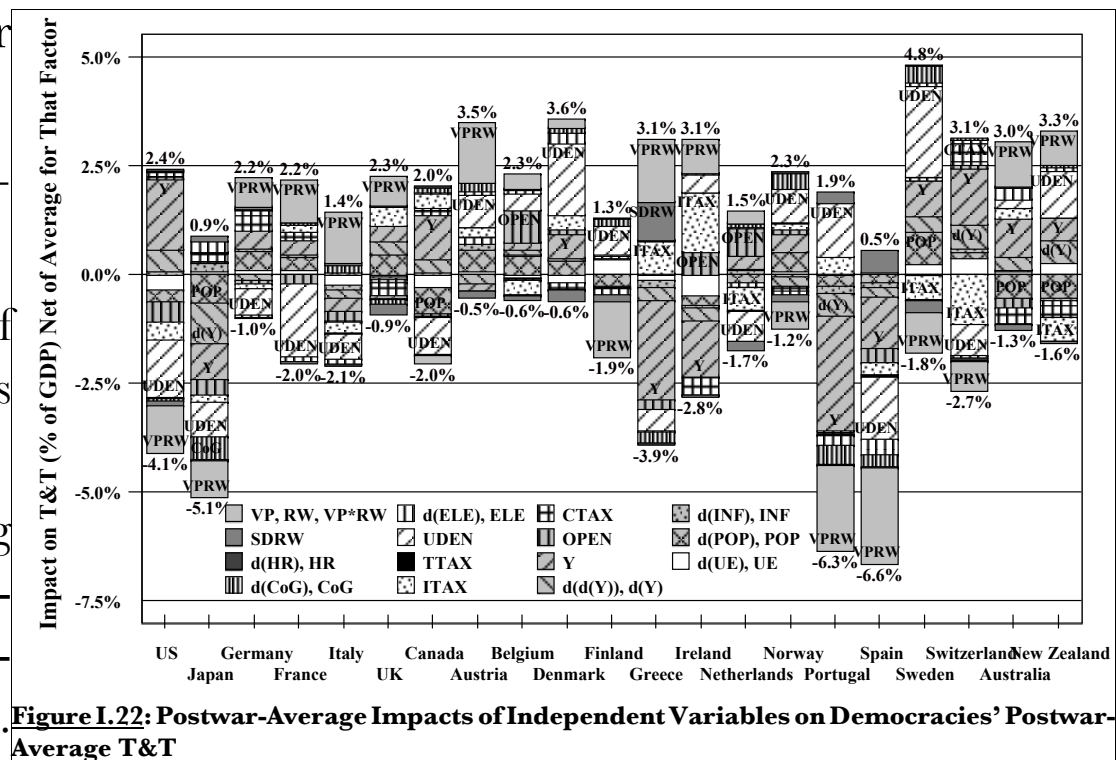
2. Cross-Country and “Country-Time-Unique” Variation

a. Despite being unable render set atheoretical cross-ctry dummies statistically irrelevant, model could account $45 \pm 0\%$ cross-sectional variation (as Fig I.15 (tries) illustrate):

- (1) 3 factors, wealth (**Y**), distribution among voters (**VP·RW**), & labor-org. strength (**UDEN**), w/ less input from 3 others, tax-system complexity (**ITAX**), age demog (**POP65**), & growth (**dY**), explain almost half (45%) cross-sect'l variation among dev'd dem's in postwar-avg T&T size.
- (2) Same factors, esp. wealth and growth, plus other economic conditions like UE and inf., explain about same proportion of shared time-path of T&T.
- (3) Election-yr politics (**ELE**), govt partisan (**CoG**), & inc-dist volatility (**SDRW**) also stat'ly sig. &, in some ctry-times, subst'ly large effects.

b. Very rough calc of remainder (=ctry-time unique):

- (1) Explain so far: $(.45)(.43) + (7.3/14)(.46) \approx .43$ of total
- (2) $R^2 - .43 \approx .51 - .43 = 8 \pm 0\%$ more of variation explained, which is $85 \pm 0\%$ of ctry-time-unique.
- (3) \Rightarrow model does esp. well explaining ctry-time dev's from shared time-path upward & varying country-averages, i.e., loosely, *at the margins*.



M. Concluding More Theoretically:

1. Many arguments forwarded here or drawn from previous literature provide considerable explanatory leverage.
2. Evidence particularly supports core prediction of basic PPE model: democratic govts respond to median-voter desires for more T&T as income-skew increases.
3. However, prediction must be augmented:
 - a. What matters theoretically *and empirically* is distribution of income *among the politically relevant segment of the population*.
 - b. Size of that segment and, critically, proportion of income distribution it represents politically, varies across democratic country-times,
 - c. \Rightarrow that the *effective* popular pressure toward redistribution emanating from the underlying income distribution in the economy varies accordingly.

4. More generally, evidence reveals important interactive effects b/w structure of interests in P.E. and institutions of democratic government.
 - a. E.g., while skewed income-distribution in society produces a *population* median that is poorer than the *population* average, effective democratic demand for redistribution emanates from the difference between the *voters'* median income and the *population's* (tax-payers') average income, and the identity (and therefore the income) of the median voter former depends also on electoral institutions that foster greater or lesser participation (e.g., registration laws).
 - b. Similarly, institutions that foster *more-frequent*, as well as greater, popular electoral-participation also seem to induce government to provide more T&T.

N. Political and Economic Implications of These Developments:

1. Economic Effects:

a. UE and Inequality (see figure):

- (1) Virtually all empirical exploration of the distribution effects of transfers systems agree that T&T systems have generally done exactly what they intended: alleviated the aggregate inequality and individual hardship of UE, illness, disability, and age-related poverty.
- (2) However, the feared efficiency side-effect also seems to hold: namely, transfers tend to \uparrow UE and (other work shows) esp. long-term UE, which is most policy-resistant \Rightarrow two costs:
 - (a) T&T raises its own costs; and T&T diminishes macro-policy efficacy in countering UE.

b. Fiscal Effects (see figure):

- (1) Transfers expansion not typically met by reductions in other spending, but rather by 25-50% deficit and 50-75% tax increases
- (2) Other spending increases also not met by transfers reduction, but rather by 25-50% deficit and 50-75% tax increases
- (3) \Rightarrow transfers growth drove spending growth more generally, and that drove deficits.
- (4) Also, as often lamented, exogenous transfers spending and tax \uparrow less likely to reverse selves than exogenous \uparrow in other (more discretionary) spending.

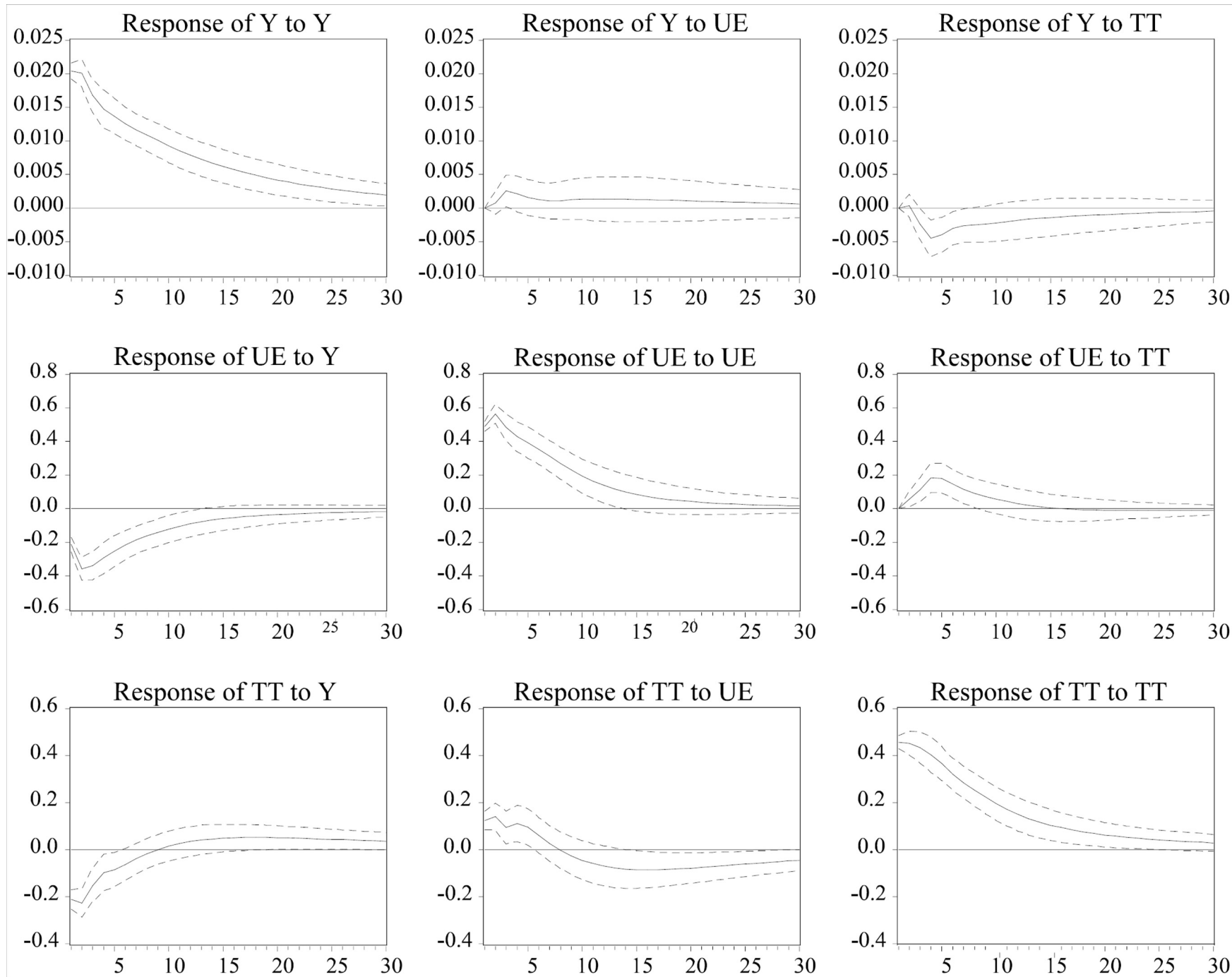


Figure II.10: Transfers, Wealth, and Unemployment Responses to Their Innovations

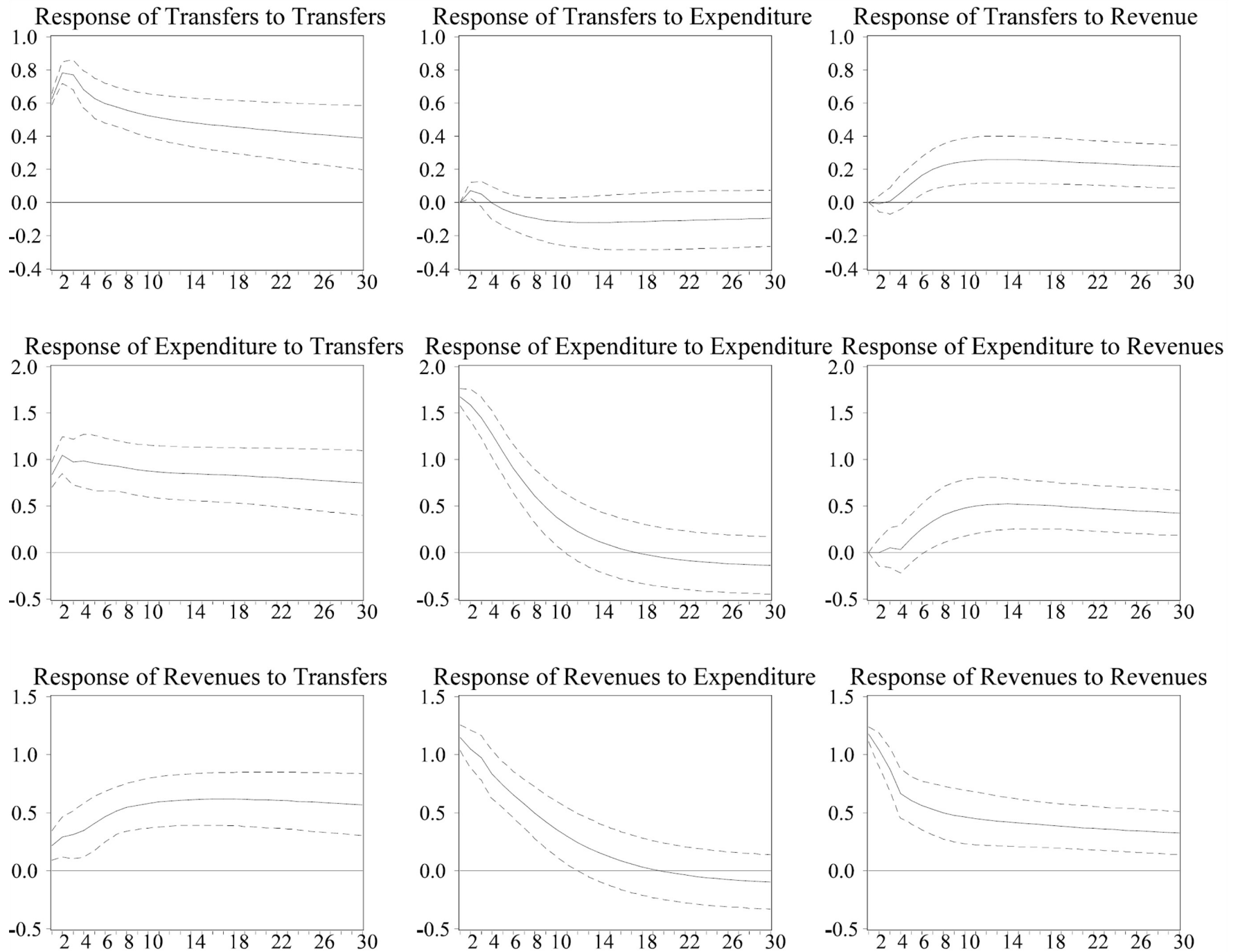


Figure II.11: Transfers, Expenditures, and Revenues Responses to Their Innovations

2. Political Ramifications:

- a. At least some of popular link of weaken econ-perform to *welf state* seems emp'y justified
- b. Salience intergenerational & employed-*vs*-unemployed likely rising, but at same time, as econ's become wealthier, post-materialism \uparrow = material saliency \downarrow . Thus govts were growing more involved in distribution precisely as general material saliency declining
- c. \Rightarrow Challenge for Left & Right to form new coalitions in these shifting waters to marry either "(left) concern to defend or (right) discontent over redistributinal efforts with (left) challenge to or (right) defense of traditional values and ideational systems" (p.123)
 - (1) Right sought institutional *reforms* to (\downarrow T&T systems) to get people "off welfare and into jobs" coupled with some vague connection of welfare to various "social malaises".
 - (2) Left sought institut'l *reforms* (reorg. T&T) to \downarrow deleterious effects in alleviating econ hardship connected to "modern" concerns over "environmental, race, & gender empowerment"
 - (3) = less change in substance than in venue of conflict, and outcome of new politics likely contingent on domestic pol-econ structure as found here, e.g., participatory institutions.
- d. Results suggest eqbm relations between transfers, UE, and participation, which eqbm depending critically on (exog.) institutions that affect participation.
- e. Finally, this (differential) transfers expansion, drove govt growth, which drive debt growth, which leads to the next chapter...

IV. *Chapter III: Financing the Commitments: Public Debt*

A. *Abstract:* Theoretical work seeking explain pub-debt accum. exploded as debt crises emerged in many ctrys. Empirical eval. PE theories has lagged that of *std tax-smooth/econ-conditions model (0)*. To redress imbalance:

1. Operationalize & evaluate 9 positive-political-economy-of-public-debt theories:
 - a. *(1a) influence & (1b) veto-actor conceptions govt fractionalize & polarize & delayed stabilization*
 - b. *(2) wealth & age distributions and the inter- & intra-generational-transfer roles of debt,*
 - c. *(3a) electoral and (3b) partisan budget-cycles,*
 - d. *(4) strategic debt-manipulation to alter future governments' fiscal incentives,*
 - e. *(5) distributive politics and multiple constituencies,*
 - f. *(6) fiscal-structure complexity and fiscally-illuded voters, and*
 - g. *(7) central bank autonomy and conservatism as a debt-financing constraint*
2. Evidence:
 - a. Historical record of $21 \pm$ developed democracies over $40 \pm$ yrs strongly supports 0, 1b, 3a, & 6, unequivocally favoring 1b over 1a.
 - b. Evidence for 3b, 5, 7 weaker or more mixed; 2 & 4 get odd, suggestive support.

3. Empirical Conclusions:

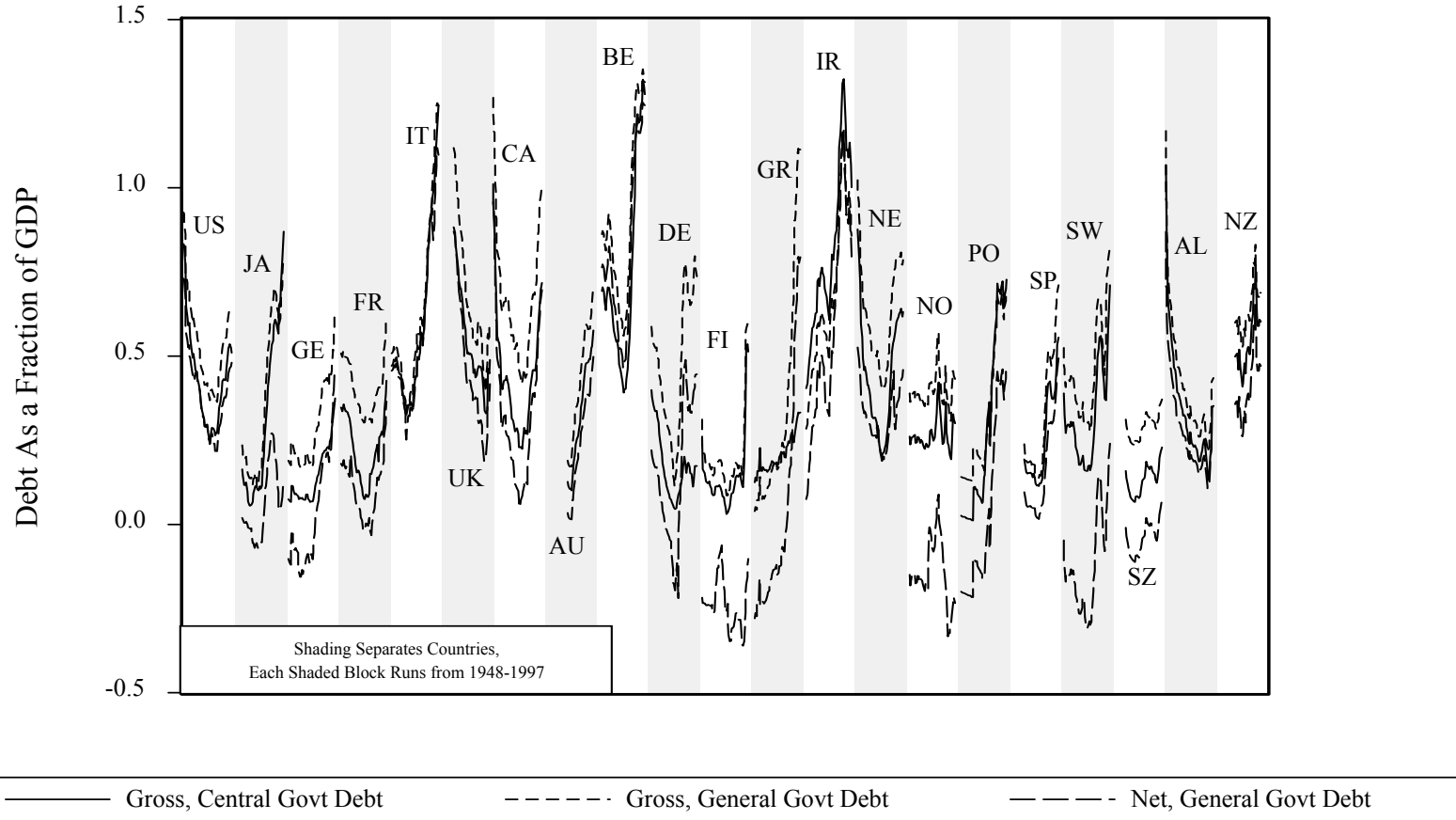
- a. Shared exposure to adverse economic shocks in 1970s and changing policy emphases toward anti-inflationary monetary policy in 1980s emerge as especially important in explaining commonalities in evolution of public debt across country-times;
 - b. fractionalized governments were critical in the most extreme cases of exploding debt;
 - c. macro-political institutions like presidentialism and central bank autonomy and conservatism were also central to persistent cross-national differences.
4. The chapter's conclusion shows how fiscal developments analyzed here & in Ch. II turned govts toward monetary policy to fulfill their democratic commitments & addresses implications of the arg's & findings for maintenance & utility of KWS & continuing democratic conflict over it.

B. Structure of the Chapter

1. **Explanandum:** *Consolidated Central Govt. Gross Debt* in 21 Dev'd Dem's, 1956-97
2. **Arguments:** highlight testable implications, and operationalize:
 - a. Tax-Smoothing/Economic-Conditions (Default) Model
 - b. *Fractionalization, Polarization, Delayed Stabilization (2 Competing Versions)*
 - c. Strategic Debt Policy to Alter Future Governments' or Other Actors' Incentives
 - d. Electoral and Partisan Budget Cycles
 - e. Age-, Income-, and Age-&-Income-Distributions and Public Debt as Redistribution
 - f. Distributive Politics, the Multiple-Constituencies Problem, and Public Debt
 - g. Democracy, Fiscal Structure (Complexity), and Fiscal Illusion
 - h. Budgetary Rules, Macro-Institutions, and Public Debt
 - i. Central Bank Independence as a Debt-Financing Constraint

3. **Q1:** *How well can Economic Conditions (default model) explain DD's p.w. debt experiences?*
- An adjusted 43% (upper bound) can be explained by economic conditions. Esp'ly important: sequence stagflation (low Δy , high UE & π) then $\uparrow\uparrow$ real-interest
4. **Q2:** *Does each PE theory add explanatory power to simple economic-conditions model?*
- Set of 8 F-Tests, adding each theory's complex of variables to the default model \Rightarrow Yes: Each is significant at $p < .05$ or better
5. **Q3:** *Do some of these PE theories encompass each other or does each offer some unique explanatory power not covered by others?*
- Set 53 Pairwise J-Tests of *encompassingness*, keeping default model as non-contentious, \Rightarrow w/ 2 exceptions, 1 highly theoretically informative, each adds explan. power to any
6. **Q4:** *How do the Economic & Political-Economic factors matter? (encompassing model)*
- Econ conditions remain much of story, but political/institutional factors can magnify.
 - Esp. important of political variables: (veto-actor conception of) fractionalized govt.
 - Electoral cycles exist & have long-run implications. Partisan cycles also, but usually small, & manifested in ways ill-explained by strategic or simple partisan theory.
 - Age & income-distributions may enter, but not in ways well-explicated by theory.
 - Among macro-institutions: presidentialism & central bank independence may be key.

C. The Explanandum:



Correlation Matrix	Debt Levels			Change in Debt (<i>i.e.</i> Deficits)		
	IMF g,c	OECD g,g	OECD n,g	IMF g,c	OECD g,g	OECD n,g
IMF g,c	1	.891	.858	1	.869	.743
OECD g,g	.891	1	.896	.869	1	.838
OECD n,g	.858	.896	1	.743	.838	1

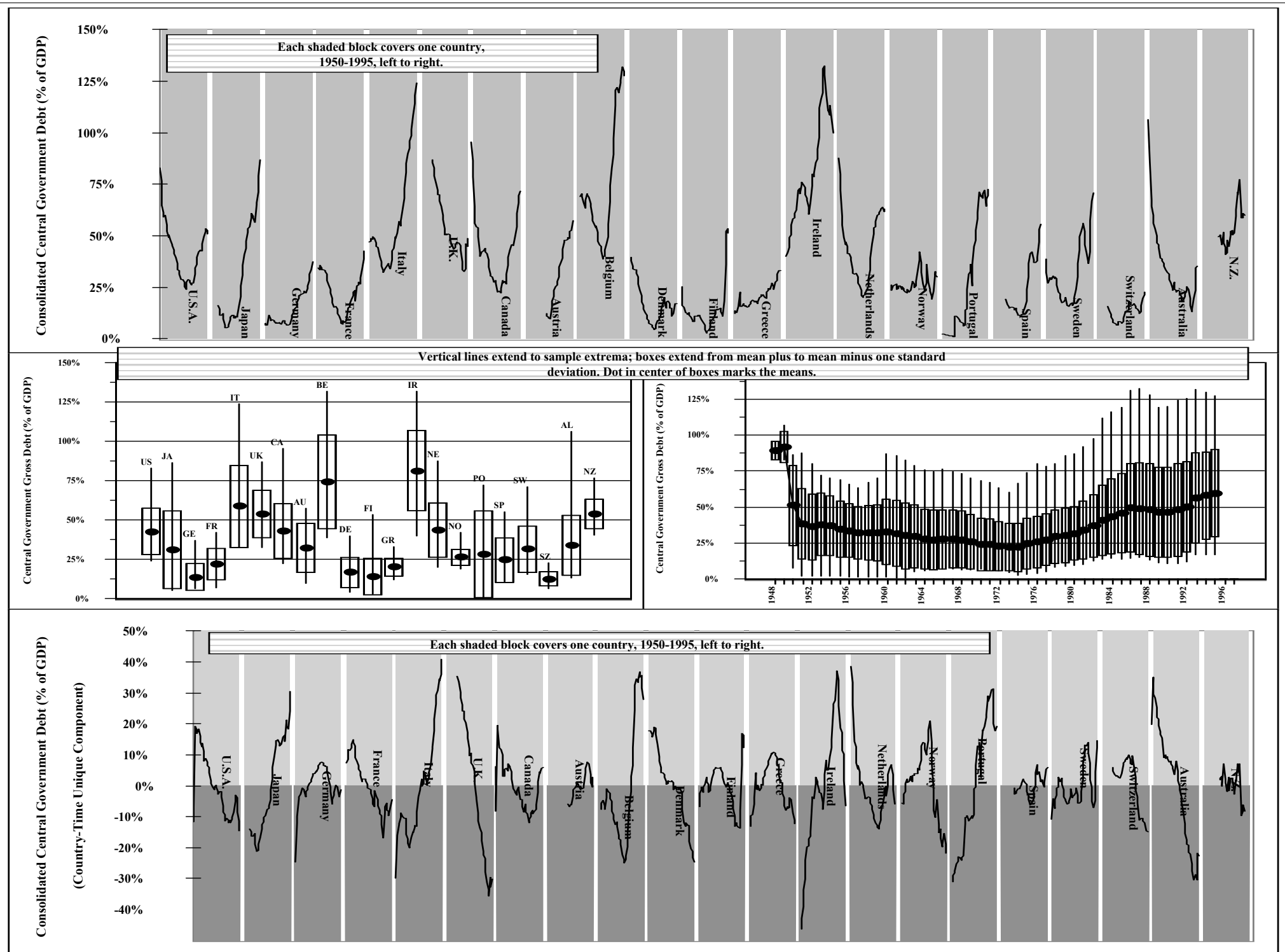


Figure 26: Debt (% of GDP)—Full, By Country, By Year, and Country-Time-Unique Components

D. Arguments:

Table 2: Variables, Theories, and Hypothesized Signs of their Relationship with Debt

<i>Theory</i>	<i>Variable</i>	<i>Hypoth. Sign</i>	
tax-smoothing \ economic control default model	<i>UE</i>	+	
	ΔY	-	
	<i>INTPAY</i>	+	
	<i>OPEN</i>	+	
democracy and fiscal illusion	$ToT / ToT \cdot OPEN$	-	
	<i>TTAX</i>	-	
	<i>ITAX</i>	+	
inter- and intra-generational-transfer role of debt	<i>CTAX</i>	-	
	y	-	
	<i>OY</i>	+	
	<i>RW</i>	+	
	$OY \cdot RW$	+	
	<i>FED</i>	+	
multiple constituencies (PRES also bdgtry ldrshp? / FED dem. & fisc. illusion?)	<i>PRES</i>	-	
	<i>AE</i>	+	
	<i>ENED</i>	+	
electoral and partisan budget-cycles	<i>ELE</i>	+	
	<i>CoG</i>	-	
	<i>SDwiG/ADwiG</i>	+ or 0	
fractionalized and polarized governments and delayed stabilization (influence / veto-actor conceptions)	<i>SDwiG \cdot D/ADwiG \cdot D</i>	+	
	<i>ENoP/NoP</i>	+ or 0	
	<i>ENoP \cdot D/NoP \cdot D</i>	+	
central bank autonomy & conservatism	<i>CBI</i>	-	
strategic debt-use	<i>CoG</i>	?	
strategic debt-use (Alesina and Tabellini)		+	
	(Persson and Svensson)	<i>RR</i>	-
	(to influence electorate interests)		?
strategic debt-use (Alesina and Tabellini)		0	
	(Persson and Svensson)	$RR \cdot CoG$	+
	(to influence electorate interests)		?

E. Evidence

1. A1 (part a): How well do econ conditions explain DD's p.w. debt experiences? Fairly Well.

The Tax-Smoothing/Economic-Controls Default Model

Independent Variables	Coefficients	Standard Errors	p-Levels
C	+ .2056	.9647	.8313
ΔD_{t-1}	+ .4511	.0545	.0000
ΔD_{t-2}	+ .6567	.0460	.0109
D_{t-1}	- .0047	.0048	.3289
$\Delta \bar{D}_{-i,t}$	+ .2057	.0562	.0003
(1) ΔINTPAY_t	+ .0056	.0008	.0000
(2) INTPAY_{t-1}	+ .0047	.0009	.0000
(3) ΔUE_t	+ .6104	.1000	.0000
(4) UE_{t-1}	+ .0310	.0244	.2046
(5) ΔGROWTH_t	- .0396	.0351	.2592
(6) GROWTH_{t-1}	- .0045	.0399	.9109
(7) ΔDXRIG_t	- .0358	.0449	.4249
(8) DXRIG_{t-1}	- .1400	.0344	.0001
(9) ΔOPEN_t	+ 13.36	5.950	.0251
(10) OPEN_{t-1}	+ 2.343	2.919	.4225
(12) ΔToT_t	+ 4.156	2.267	.0673
(13) ToT_{t-1}	- .3543	.8785	.6868
(14) $\Delta(\text{ToT}_t \cdot \text{OPEN}_t)$	- 15.29	6.107	.0125
(15) $\text{ToT}_{t-1} \cdot \text{OPEN}_{t-1}$	- 2.064	2.781	.4583
N (° Free)	618 (599)	s.e.e.	2.328
\bar{R}^2	.430	Durbin-Watson	1.995
Omit (1) through (15):	$p(\chi^2) \approx .0000$	Omit (5) and (6):	$p(\chi^2) \approx .3558$
Omit (1) and (2):	$p(\chi^2) \approx .0000$	Omit (7) and (8):	$p(\chi^2) \approx .0001$
Omit (3) and (4):	$p(\chi^2) \approx .0000$	Omit (9) to (15):	$p(\chi^2) \approx .0429$

Model: $\Delta D_{i,t} = f(\Delta D_{i,t-1}, \Delta D_{i,t-2}, D_{i,t-1}, \Delta \bar{D}_{-i,t}, \Delta \mathbf{X}_t, \mathbf{X}_{t-1}, \varepsilon)$

Estimation: Panel WLS regression with panel-corrected standard-errors.

Reports: p =probability false rejection from 2-sided t .

s.e.e.=standard error of estimate

s.e.e. and \bar{R}^2 from unweighted data; D-W from weighted data

$p(\chi^2)$ =Wald-test of joint significance of variables identified to left

Stationarity: Recall that $\text{INTPAY} = r_t \cdot D_{t-1}$, and note that r_t averages -1.3 in the sample.

2. **A2:** *Do Political-Economic Theories add to a simple economic-conditions explanation? Yes.*

Adding the Political-Economy Models to the Default Model

Theory	Variables Added to Default Model	P-level
(1a) War of Attrition, Influence Conception	$ENoP_t, ENoP \cdot D_{t-1}, SDwiG_t, SDwiG \cdot D_{t-1}$	$p(\chi^2) \approx .0462$
(1b) War of Attrition, Veto-Actor Conception	$NoP_t, NoP \cdot D_{t-1}, ADwiG_t, ADwiG \cdot D_{t-1}$	$p(\chi^2) \approx .0038$
(2) Inter- and Intra-Generational Transfers	$LRGDPC_{t-1}, \Delta OY_t, OY_{t-1}, \Delta RW_t, \Delta(OY \cdot RW)_t$	$p(\chi^2) \approx .0071$
(3 & 4) Electoral and Partisan Budget-Cycles + Strategic Debt	$ELE_t, ELE_{t-1}, CoG_t, RR_t, (RR \cdot CoG)_t$	$p(\chi^2) \approx .0018$
(5) Distributive Politics and Multiple Constituencies	$PRES_t, FED_t, FED_t^2, ENED_t, ENED_t^2, AGRETH_t$	$p(\chi^2) \approx .0008$
(6) Fiscal Complexity and Fiscal Illusion	$FED_t, FED_t^2, TTTCR_{t-1}, ITTCR_{t-1}, CGRGGR_{t-1}$	$p(\chi^2) \approx .0469$
(7) Central Bank Independence and other Macro Institutions	$CBI_t, PRES_t, FED_t, FED_t^2, ENED_t, ENED_t^2,$	$p(\chi^2) \approx .0007$
(8) Nested Multiple-Constituency, Fiscal Illusion, and Institutions Model	$CBI_t, PRES_t, FED_t, FED_t^2, ENED_t, ENED_t^2, AGRETH_t, TTTCR_{t-1}, ITTCR_{t-1}, CGRGGR_{t-1}$	$p(\chi^2) \approx .0001$

3. A3: Do any PE theories encompass others? 1 does + 1 suggestive result + 1 non-interesting.

J-Tests of Pairwise Competitions of the Political-Economy Theories

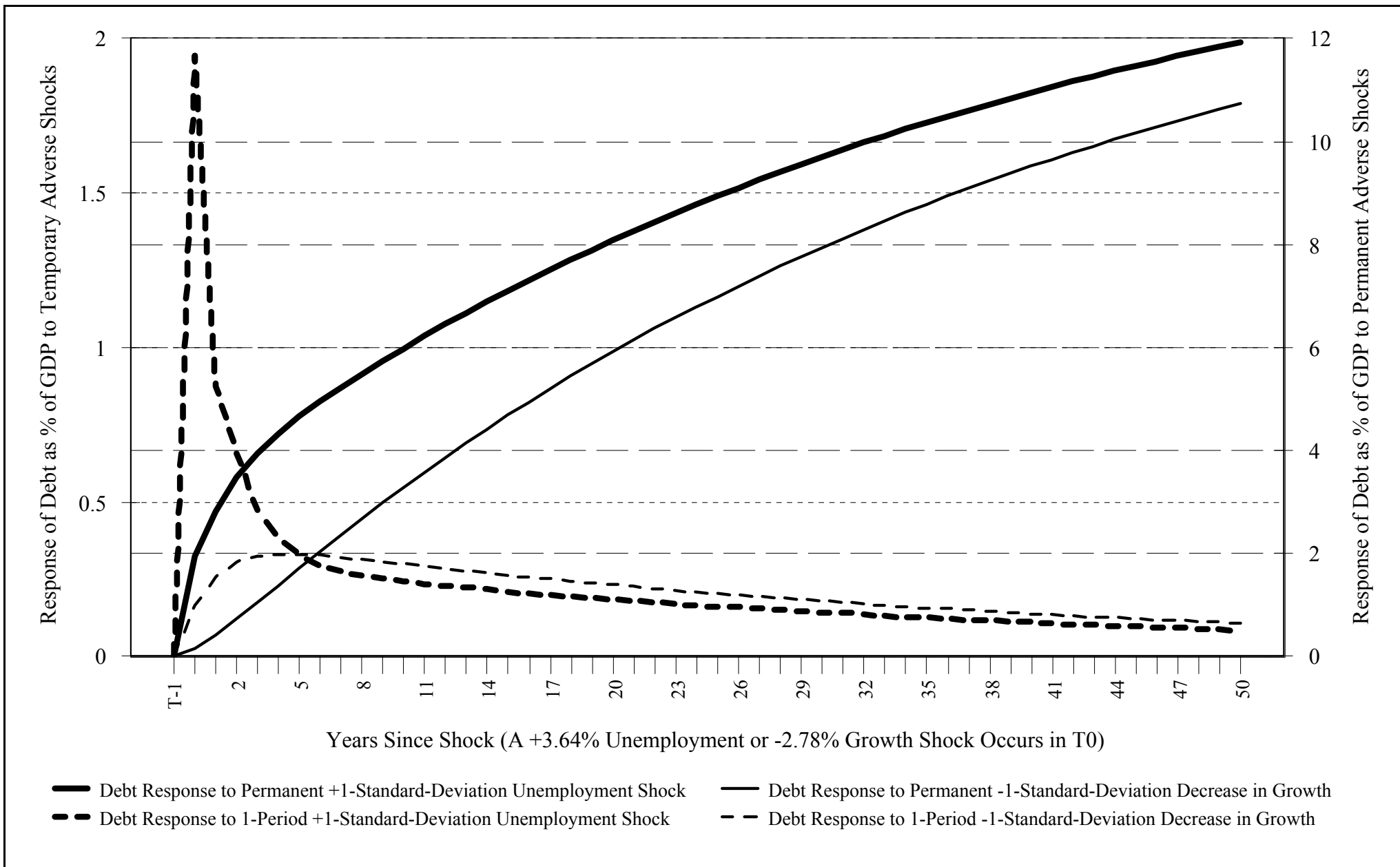
Alternative ↓ \ Null ⇒	(1a)	(1b)	(2)	(3-4)	(5)	(6)	(7)	(8)
(1a) War of Attrition (Influence)	XXX	.8056	.0039	.0008	.2076	.0017	.1421	.0470
(1b) War of Attrition (Veto-Actor)	.0136	XXX	.0003	.0000	.1092	.0001	.0845	.0292
(2) Inter-/Intra-Generational-Transfers	.0002	.0003	XXX	.0000	.0001	.0000	.0000	.0000
(3-4) E&P Budget-Cycles +Strategic Debt	.0000	.0000	.0000	XXX	.0017	.0000	.0012	.0006
(5) Distributive Pol. & Multiple Constituencies	.0004	.0013	.0000	.0001	XXX	.0000	.6441	XX (1.0)
(6) Fiscal Complexity & Fiscal Illusion	.0011	.0010	.0000	.0012	.0103	XXX	.0038	XX (1.0)
(7) CBI and Other Macro-Institutions	.0004	.0016	.0000	.0001	.5348	.0000	XXX	XX (1.0)
(8) Institutions, Const's, & Fiscal-Structure	.0000	.0000	.0000	.0000	.0008	.0001	.0010	XXX

NOTES: Reported are probability of false rejection of null model, 2-sided test. (8) encompasses (5), (6), and (7) by construction.

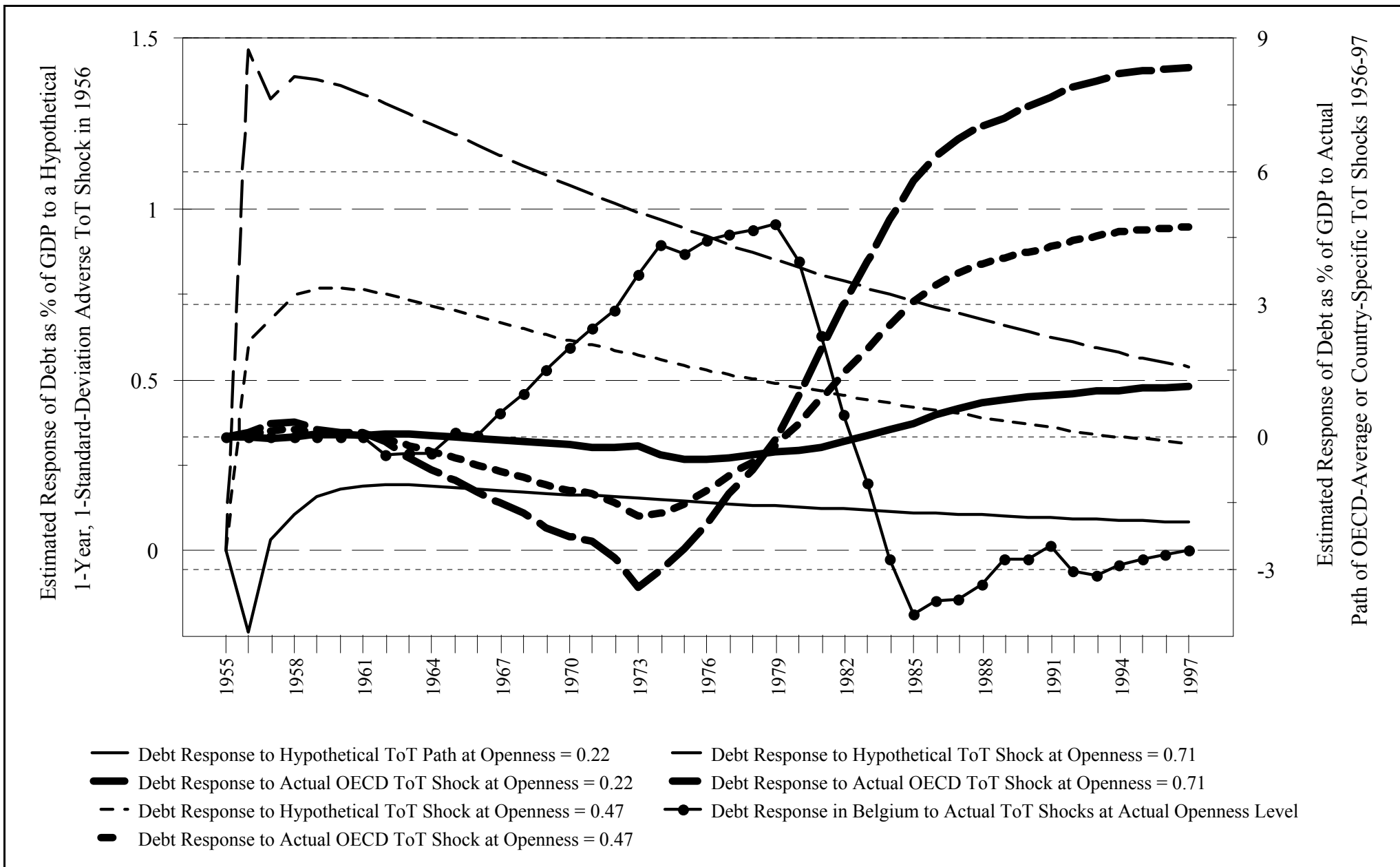
- a. *Bottom-right:* theories as operationalized nearly coterminous ⇒ unsurprising result.
- b. *Top-right & Bottom-left:* weak, but may suggest some of (5), (7) institutions affect policy-adjust? More-directly, reflects empirical correlation those inst's w/ large # veto actors
- c. **Top-left: Only unambiguous rejection: Veto-actor (Tsebelis 1995) conception dominates influence conception of governmental fractionalization and polarization.**

4. A4(a): How have Ec&PE cond's shaped DD's p.w. debt experiences? Encompassing Model

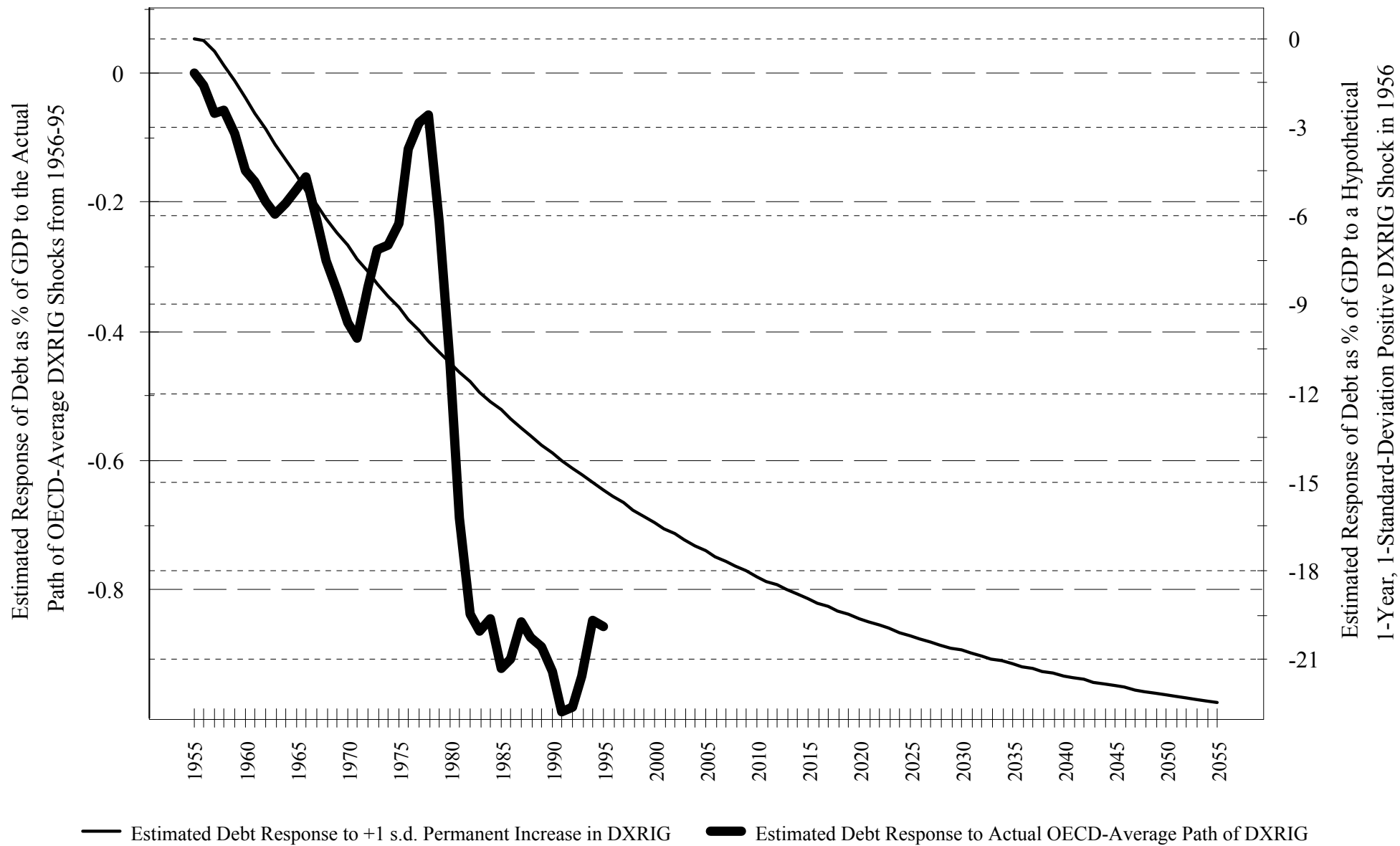
Theory / Theories	Independent Variable	Coefficient	Std. Errors	p-Levels	
Tax-Smoothing / Economic-Controls	D_{t-1}	-.0321	.0086	.0002	
	ΔUE_t	+.5335	.1005	.0000	
	UE_{t-1}	+.0570	.0261	.0294	
	$\Delta GROWTH_t$	-.0592	.0394	.1330	
	$GROWTH_{t-1}$	-.0730	.0487	.1346	
	$\Delta DXRIG_t$	-.0314	.0458	.4931	
	$DXRIG_{t-1}$	-.1082	.0467	.0207	
	$\Delta INTPAY_t$	+.0046	.0007	.0000	
	$INTPAY_{t-1}$	+.0039	.0009	.0000	
	$\Delta OPEN_t$	+22.49	5.597	.0001	
	$OPEN_{t-1}$	+10.83	3.316	.0012	
	Wars of Attrition and Delayed Stabilization	ΔToT_t	+6.749	1.888	.0004
ToT_{t-1}		+1.387	.9579	.1480	
$\Delta (ToT_t \cdot OPEN_t)$		-23.12	5.598	.0000	
$ToT_{t-1} \cdot OPEN_{t-1}$		-9.599	3.125	.0022	
$ADwiG_t$		+.1122	.1275	.3794	
$ADwiG_t \cdot D_{t-1}$		-.0025	.0039	.5151	
NoP_t		-.3043	.1698	.0736	
$NoP_t \cdot D_{t-1}$		+.0129	.0045	.0046	
Inter- & Intra- Generational Transfers		$LRGDPC_{t-1}$	+.5506	.3628	.1296
		ΔOY_t	-46.48	10.94	.0000
		ΔRW_t	-27.01	5.931	.0000
		$\Delta (RW_t \cdot OY_t)$	+47.63	11.52	.0000
	OY_{t-1}	-1.905	.6468	.0034	
Electoral & Partisan Budget-Cycles Plus Debt-as-Commitment	ELE_t	+.4425	.1707	.0098	
	ELE_{t-1}	+.5080	.1750	.0038	
	CoG_t	+.1273	.0606	.0360	
	RR_t	+.9741	.7151	.1737	
	$RR_t \cdot CoG_t$	-.1990	.1201	.0982	
Institutions Institutions & Multiple Constituencies	CBI_t	-1.277	.6793	.0607	
	$PRES$	-1.333	.4472	.0030	
	$ENED_t$	+.0064	.0070	.3608	
	$ENED_t^2$	$-2.2e^{-5}$	$2.0e^{-5}$.2696	
Multiple Constituencies Inst., Mult. Constit., Fisc. Illusion	$AGRETH_t$	+.8158	.5089	.1094	
	FED_t	-.1013	.0347	.0037	
	FED_t^2	+.0022	.0006	.0003	
Fiscal Complexity and Fiscal Illusion	$TITCR_{t-1}$	-3.913	3.072	.2032	
	$ITTCR_{t-1}$	+3.987	1.824	.0292	
	$CGRGGR_{t-1}$	-4.859	1.033	.0000	
Summary Statistics	N (° Free)	618 (575)	s.e.e.	2,252	
	\bar{R}^2	.466	D-W	2.001	
Joint Hypothesis Tests	War-of-Attrition	$p(\chi^2) \approx .005$	Mult. Constits.	$p(\chi^2) \approx .005$	
	Inter-/Intra-Gen Trans	$p(\chi^2) \approx .000$	Institutions	$p(\chi^2) \approx .001$	
	E&PBC's & Strategic	$p(\chi^2) \approx .004$	Fiscal Illusion	$p(\chi^2) \approx .000$	



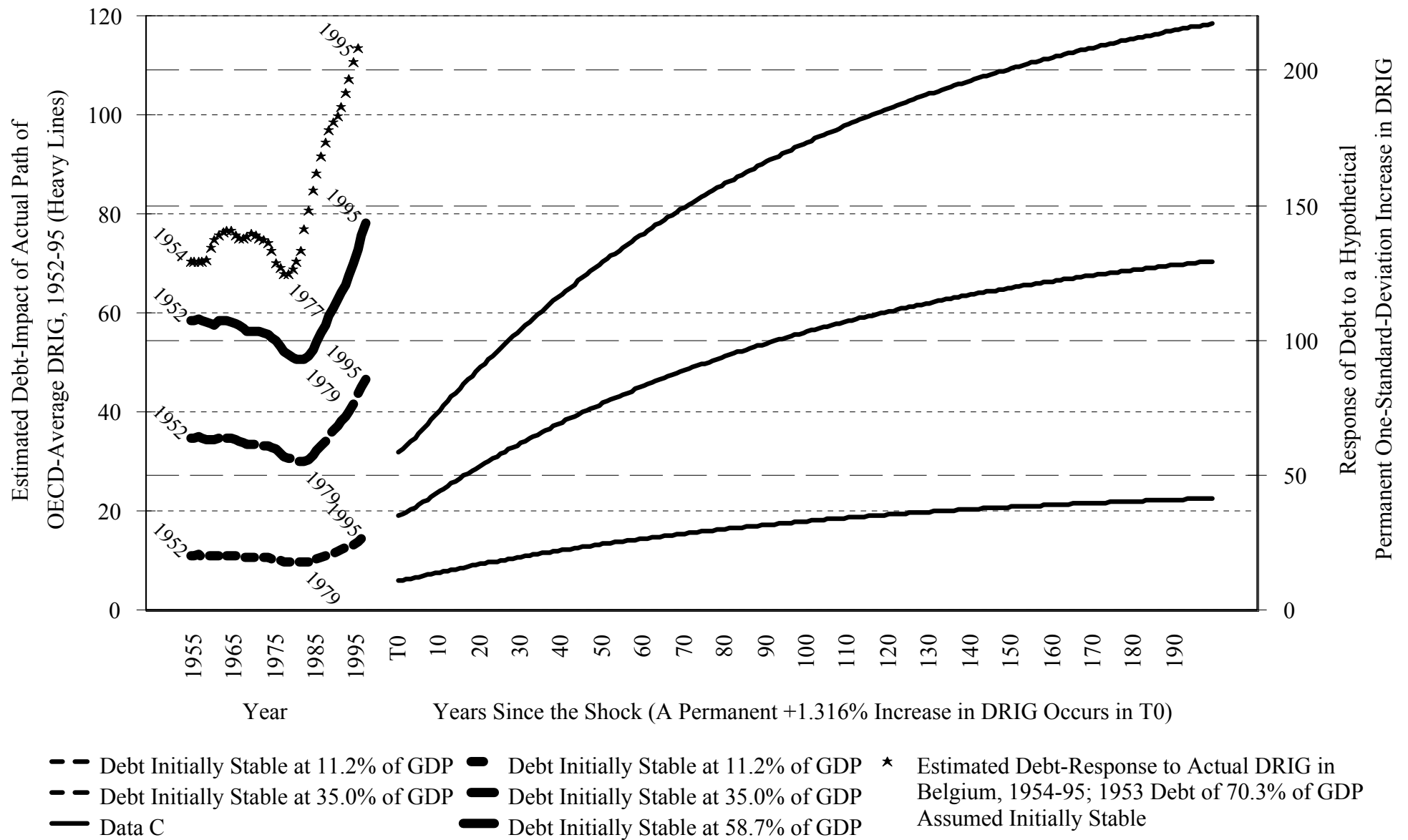
a. Estimated long-run impact of (seemingly) permanent increase unemployment & decline growth very large. Esp. unemployment large short-term effect on cycle also.



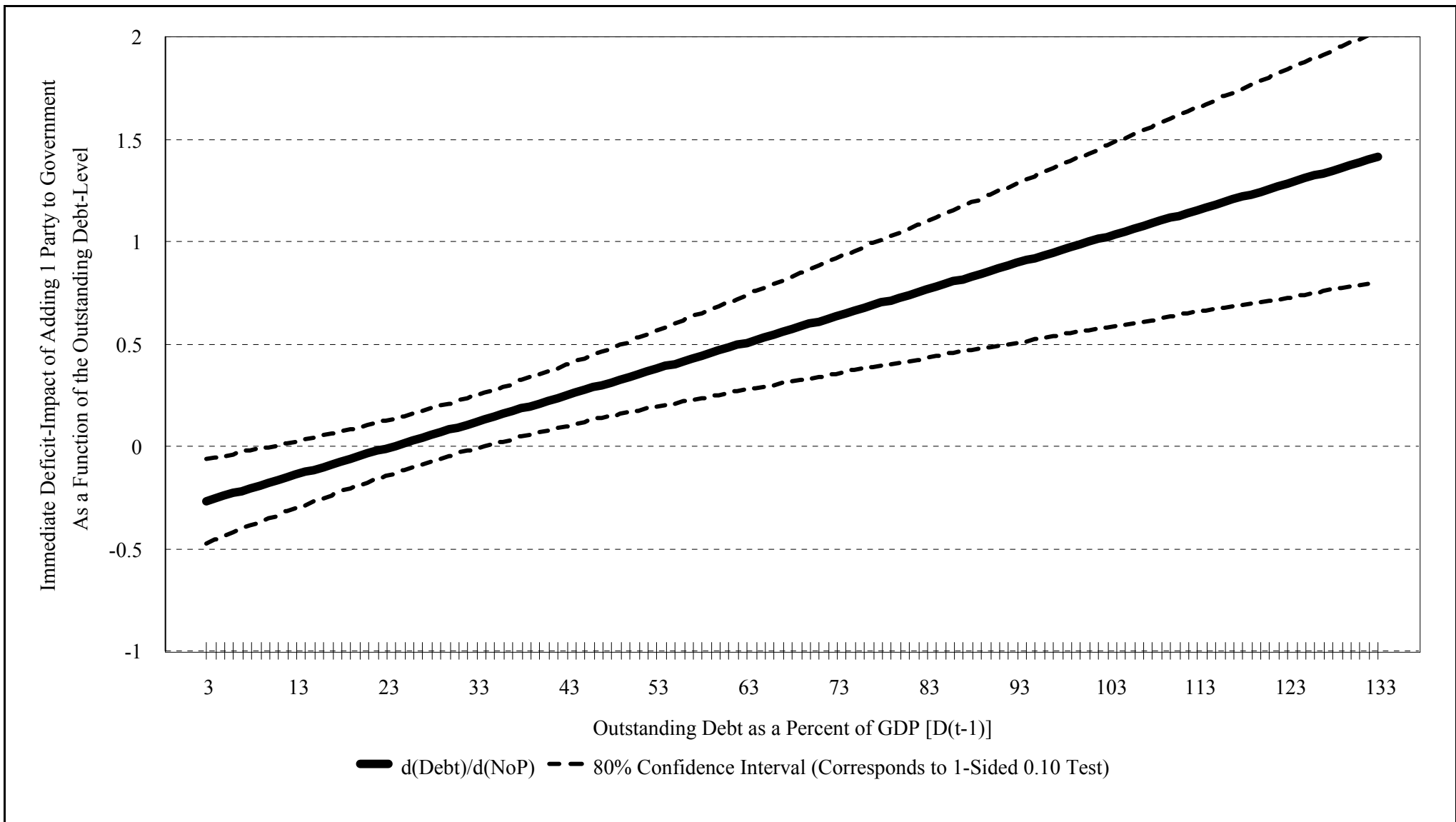
b. Response ToT shocks—thry suggests should be deficit-financed insofar as not expected permanent—seems relatively rational: long-term fading, short-term appreciable.



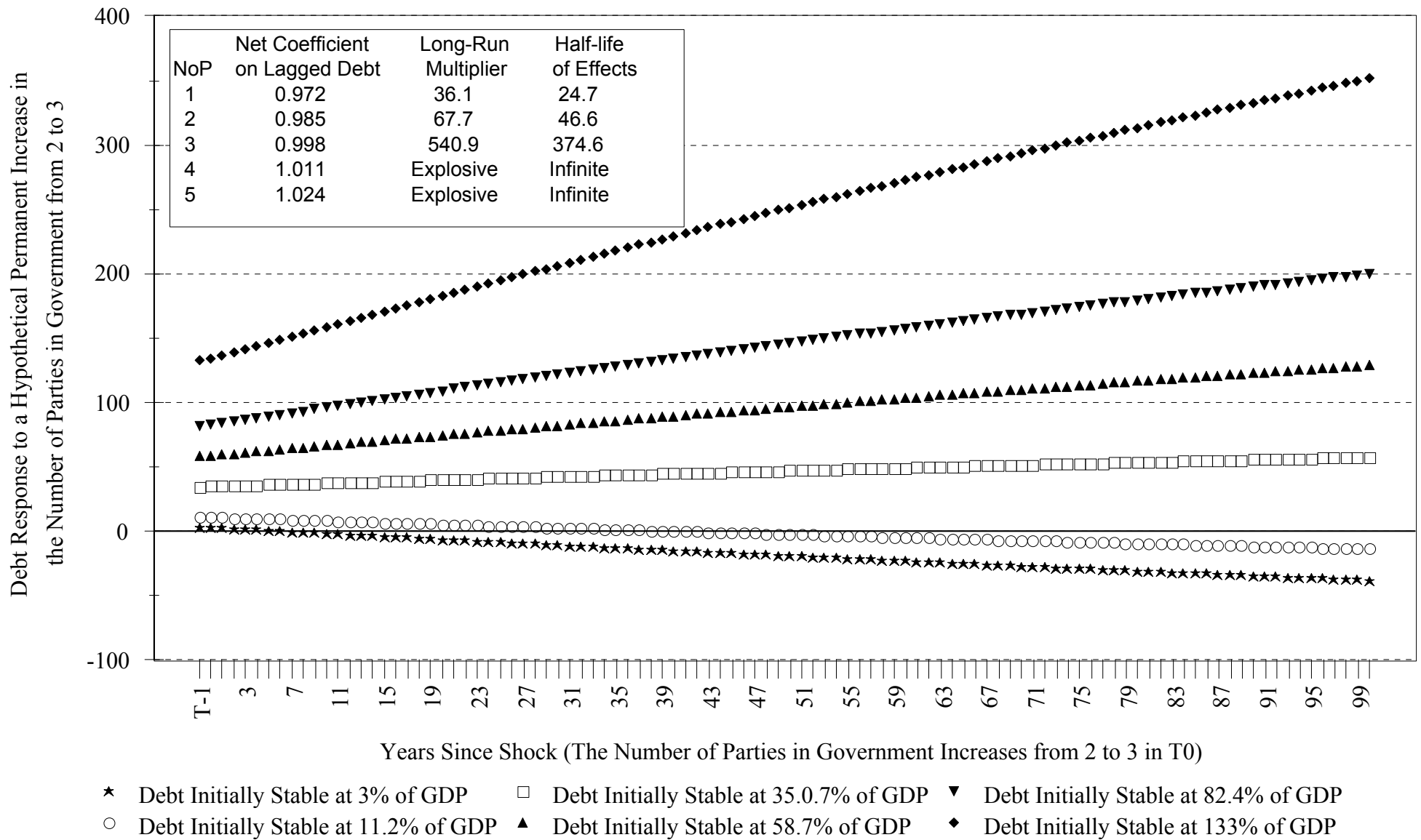
c. Response to net expected finance-costs also seems relatively rational: reduce borrowing when higher.



- d. Response to actual net finance-costs intuitive, & substantively very large.
- e. Note: effect is on adjustment rate (& so \Rightarrow LR temporal multiplier).



- f. Response to fractionalization strongly supports—clarifies & refines—veto-actor theory.
- g. [Oddly, though, effect shows in NoP, not Polarize (measurement issue?).]
- h. Note: effect is on adjustment rate (& so LR temporal multiplier).



- i. Fractionalization (veto actors) delay stabilization (retard adjustment), so:
- (1) Works like *DRIG*, including in how affects long-run multiplier (& so \Rightarrow multiple interactions).
 - (2) Big part empirical story for high-debt places; less so near mean or small.

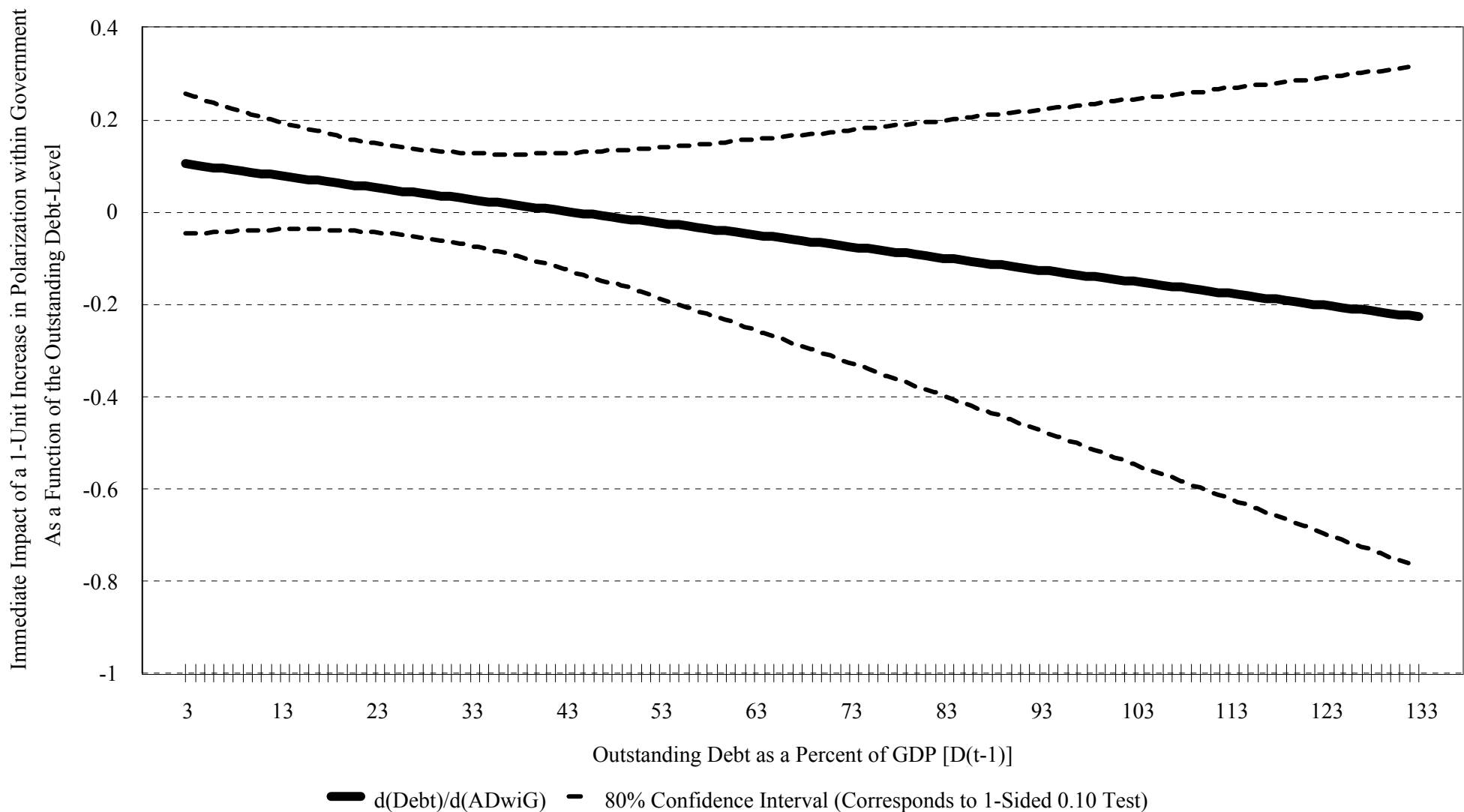
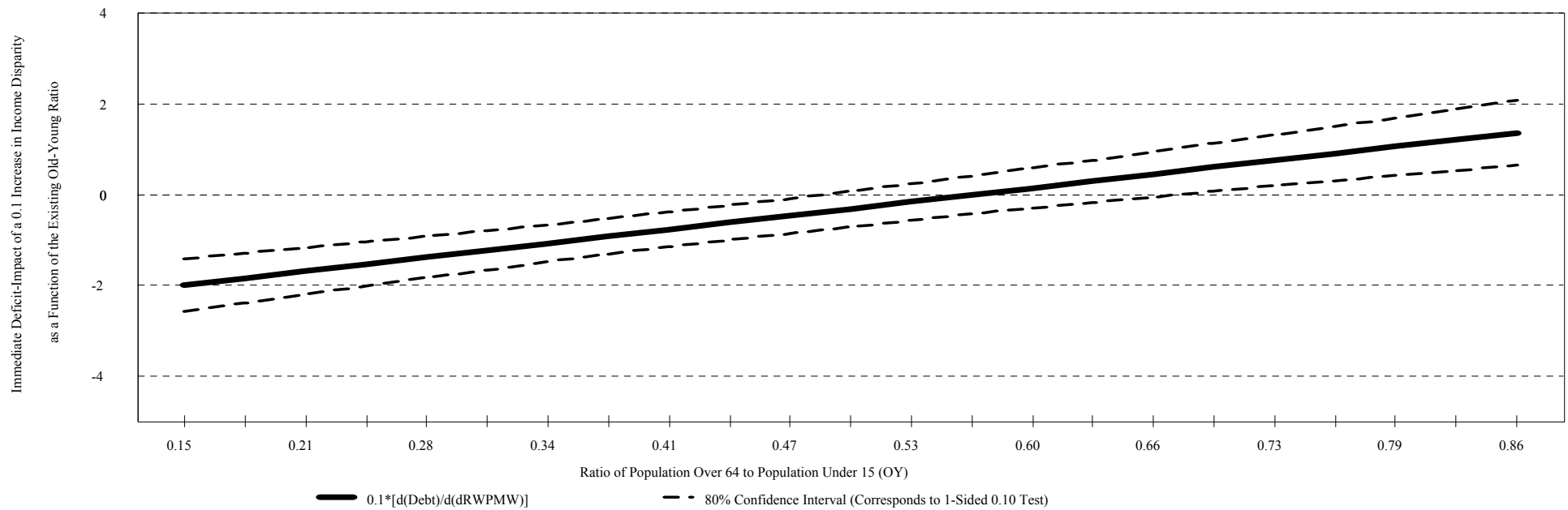
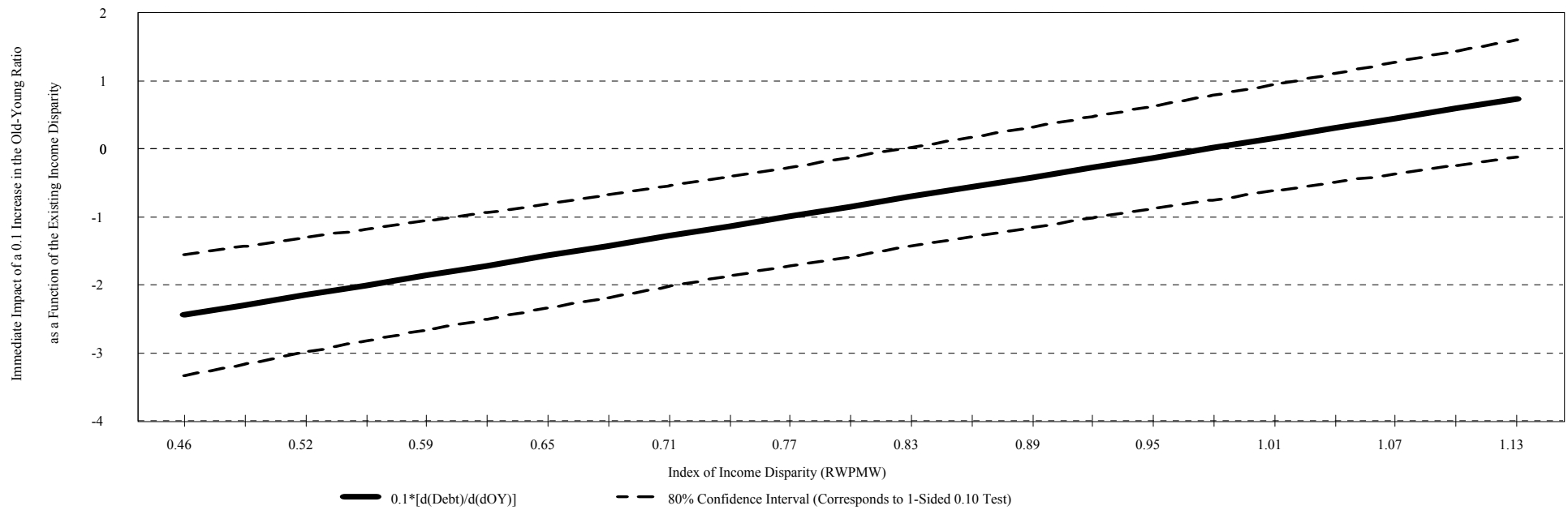
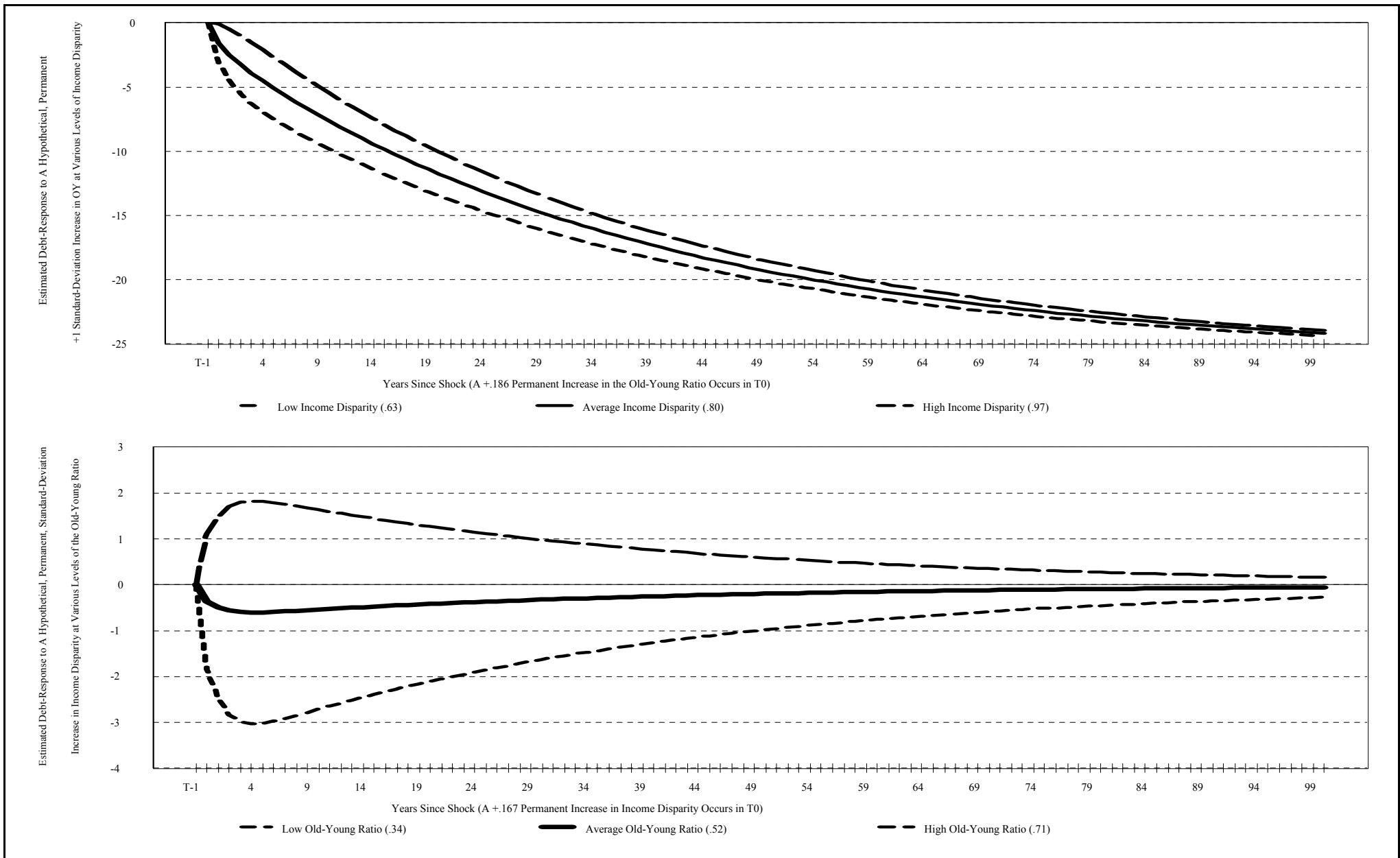


Figure 33: Estimated Deficit-Impact of a Hypothetical Increase in Government Polarization as a Function of the Outstanding Debt-Level

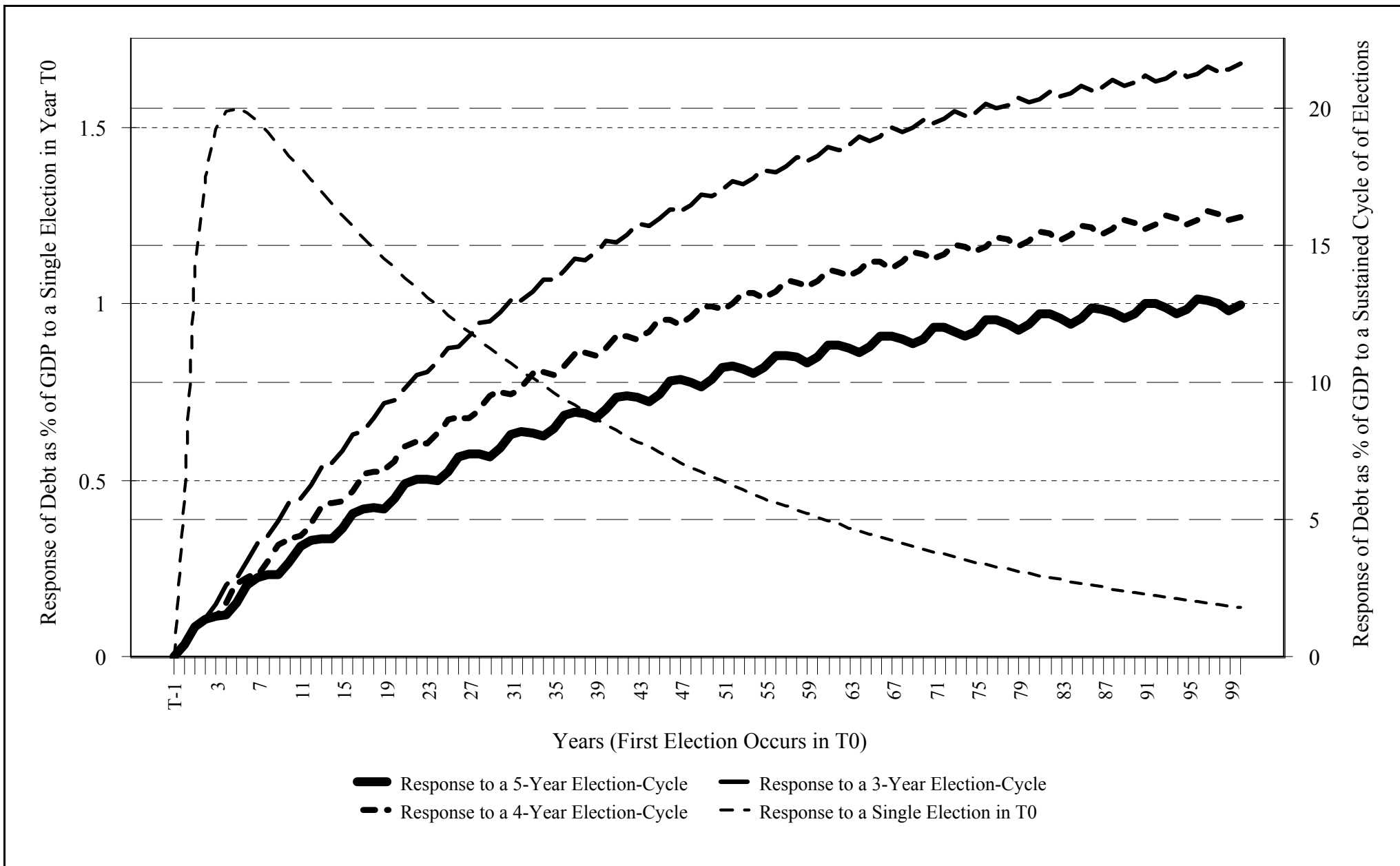
- j. Not find similar effects on polarization side:
 - (1) Not support veto-actor in this regard, but:
 - (a) Debt 1-dimensional? Or, more likely, correlates highly NoP, & latter much better measured...
 - (2) May be story in why increasingly negative effect of polarization on debt & its variability...



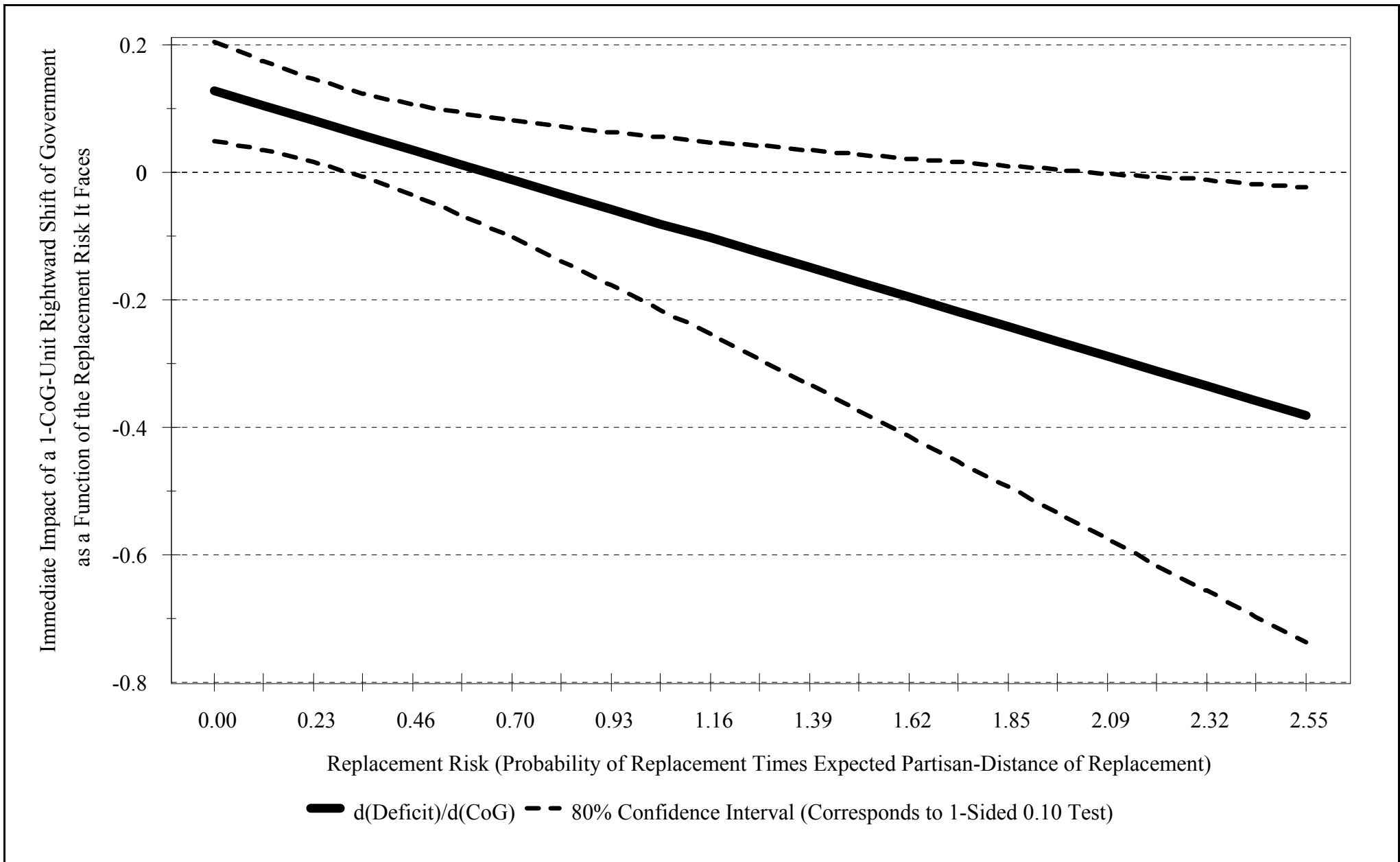
k. Income- & age-distribution effects not cleanly align with existing theory...



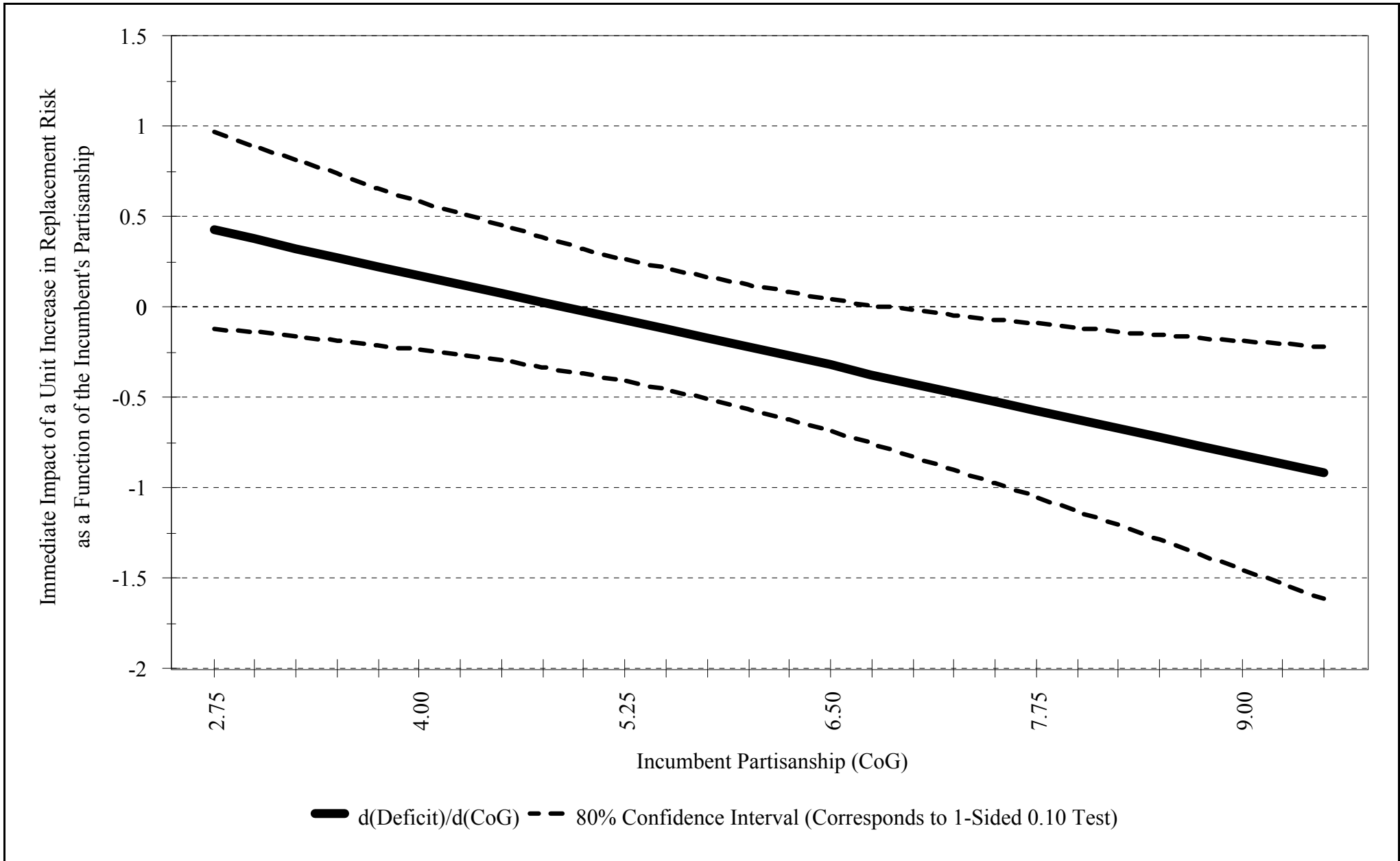
1. High old/young ratio seems favor debt reduction (?!), but signs that inequality & age demographics *interact* as argued...



m. Electoral Cycles: (as in T&T) Sizeable raw-cycle coefficient, but not so obvious in higher-frequency-election contexts, where long-run ratchet effect instead pronounced.

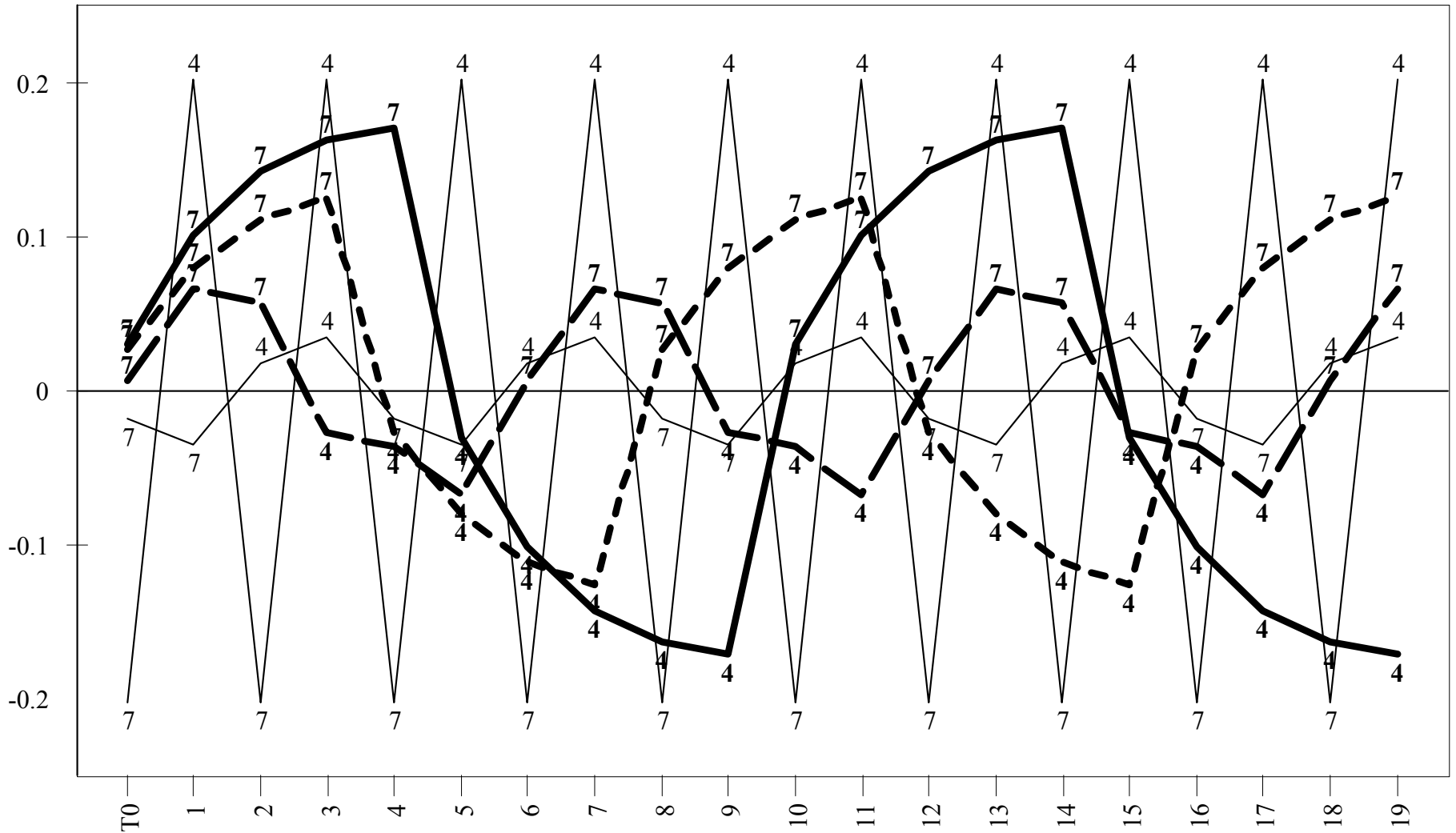


- n. Right (left) govts typically increase (reduce) debt, but if high enough replacement risk behave more like naive expectations.



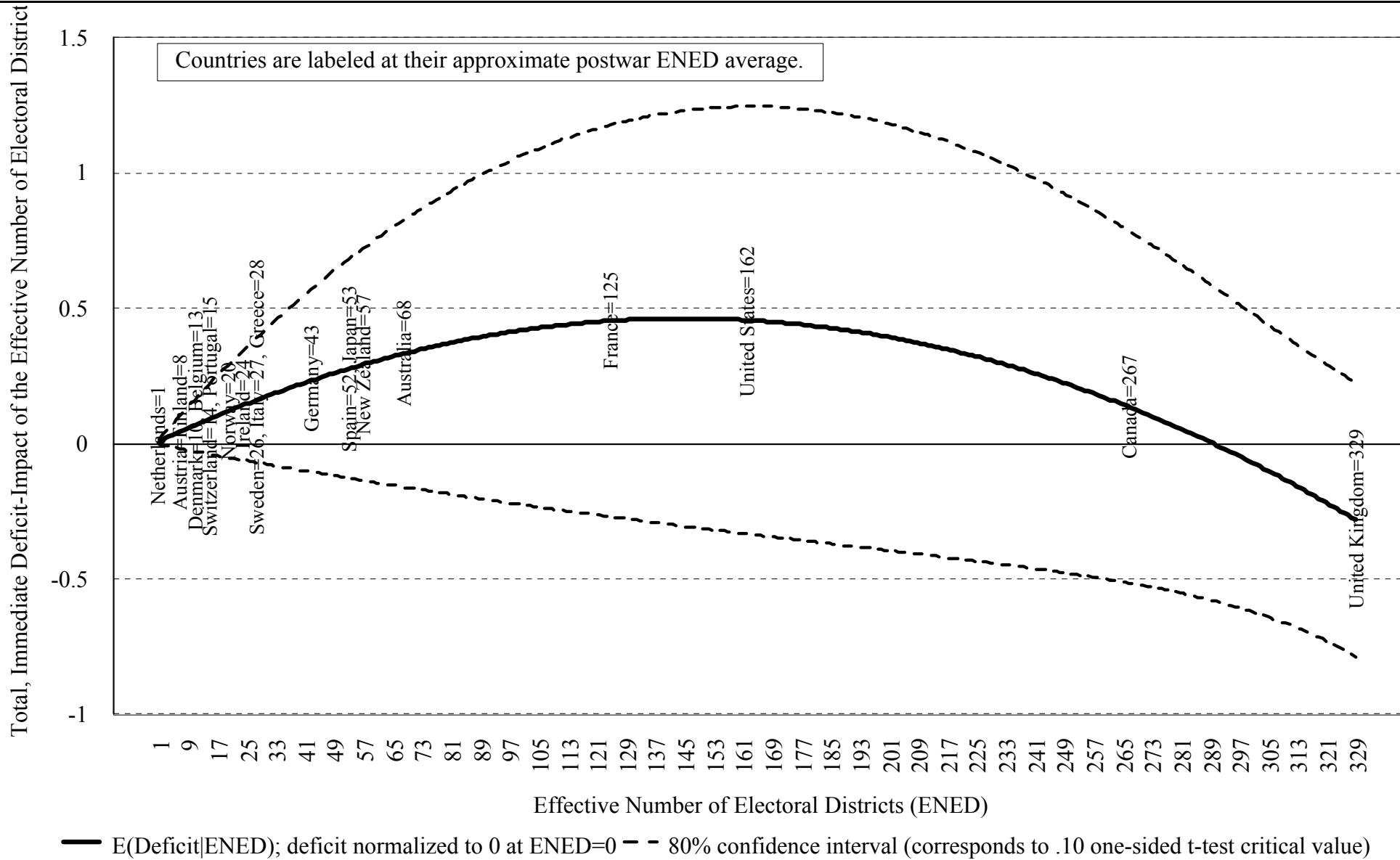
- o. Effect replacement risk per se not very strong or certain

Increase (Deficit) or Decrease (Surplus) in Debt as Government Partisanship Oscillates from Left (CoG=4) to Right (CoG=7) at Various Frequencies

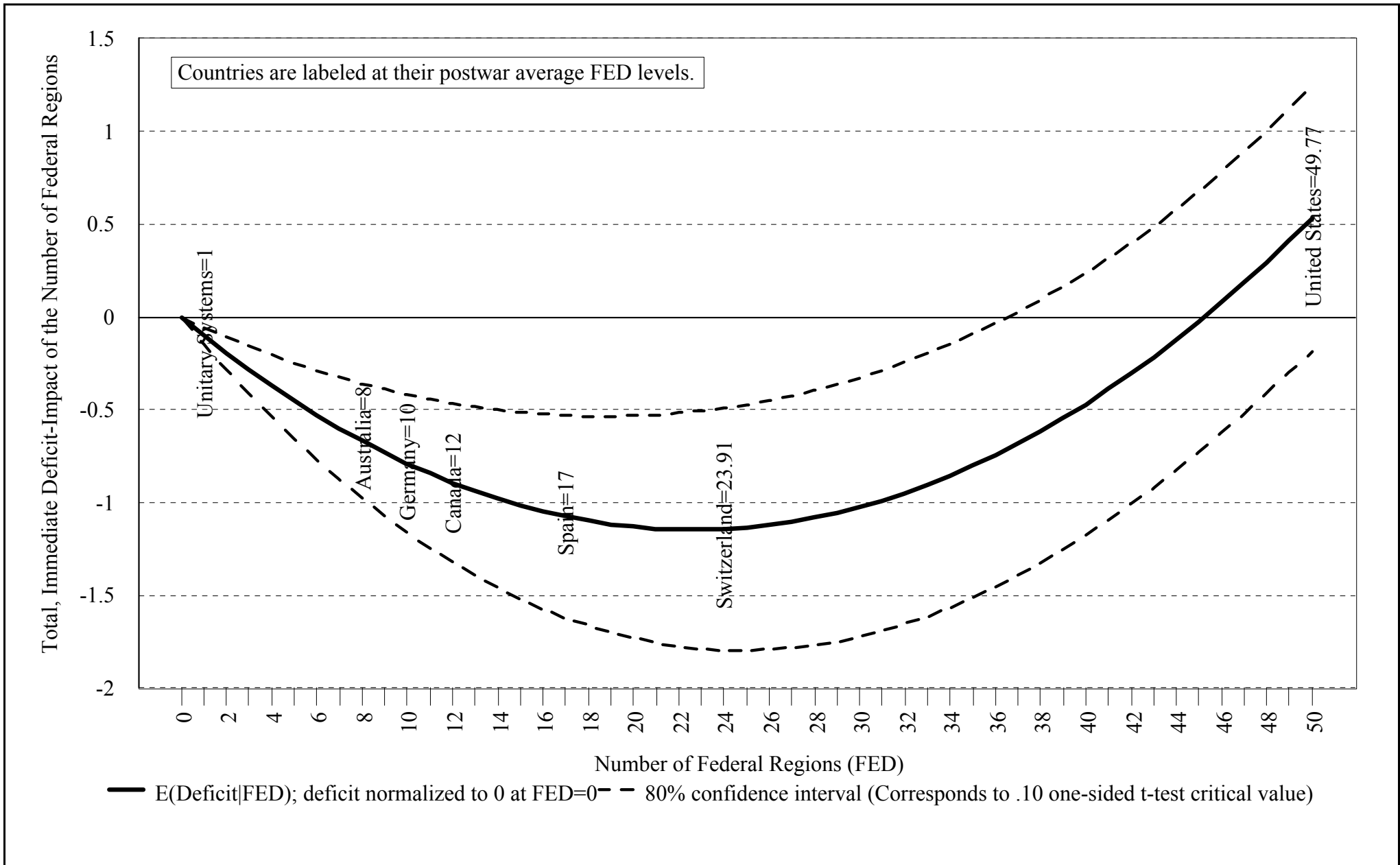


Left-Right Oscillation in 5-Year Intervals
 Left-Right Oscillation in 3-Year Intervals
 Left-Right Oscillation in 1-Year Intervals
 Left-Right Oscillation in 4-Year Intervals
 Left-Right Oscillation in 2-Year Intervals

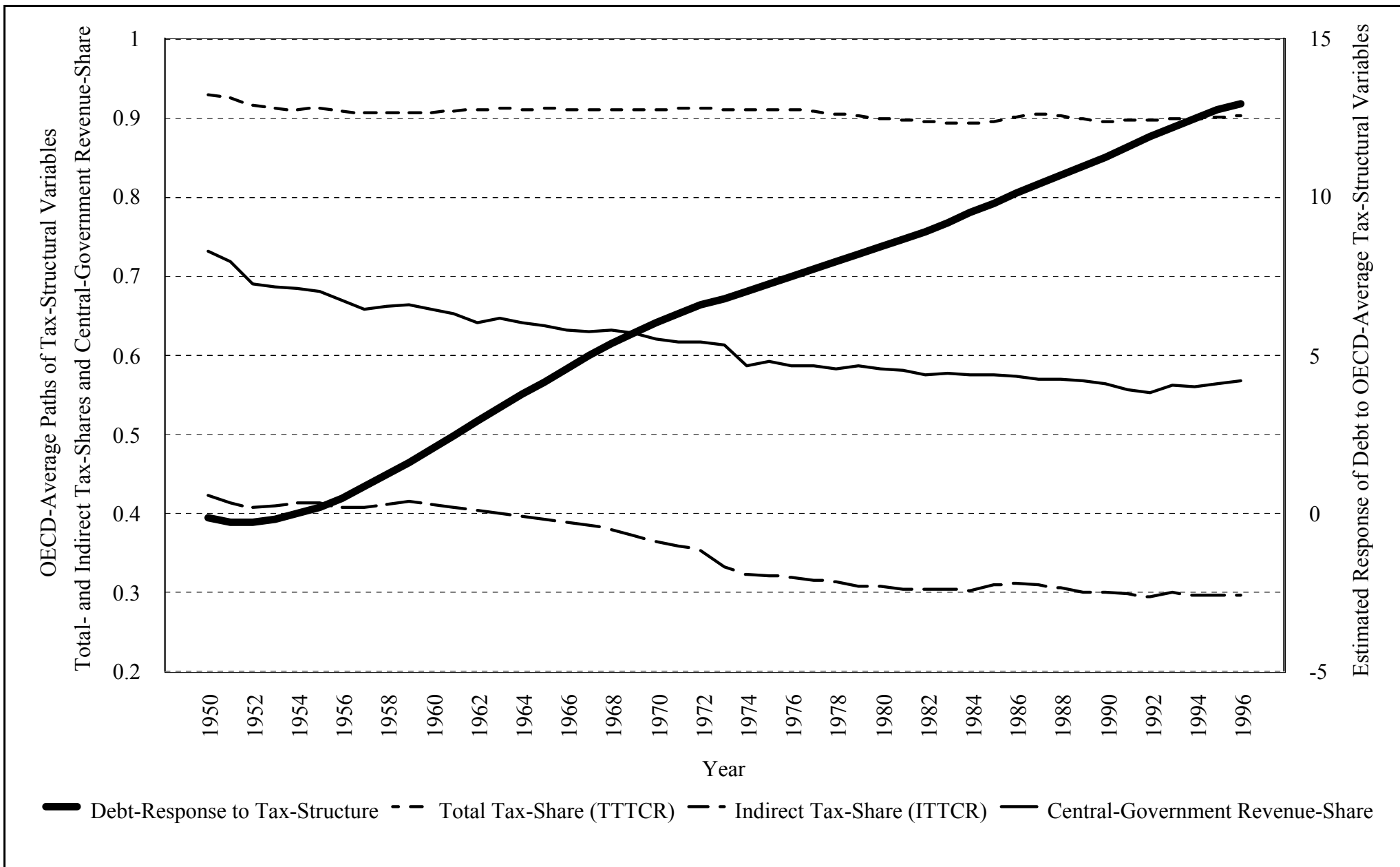
p. Combined, though, shows Hibbsean-style cycles at high-frequency alternation (only).



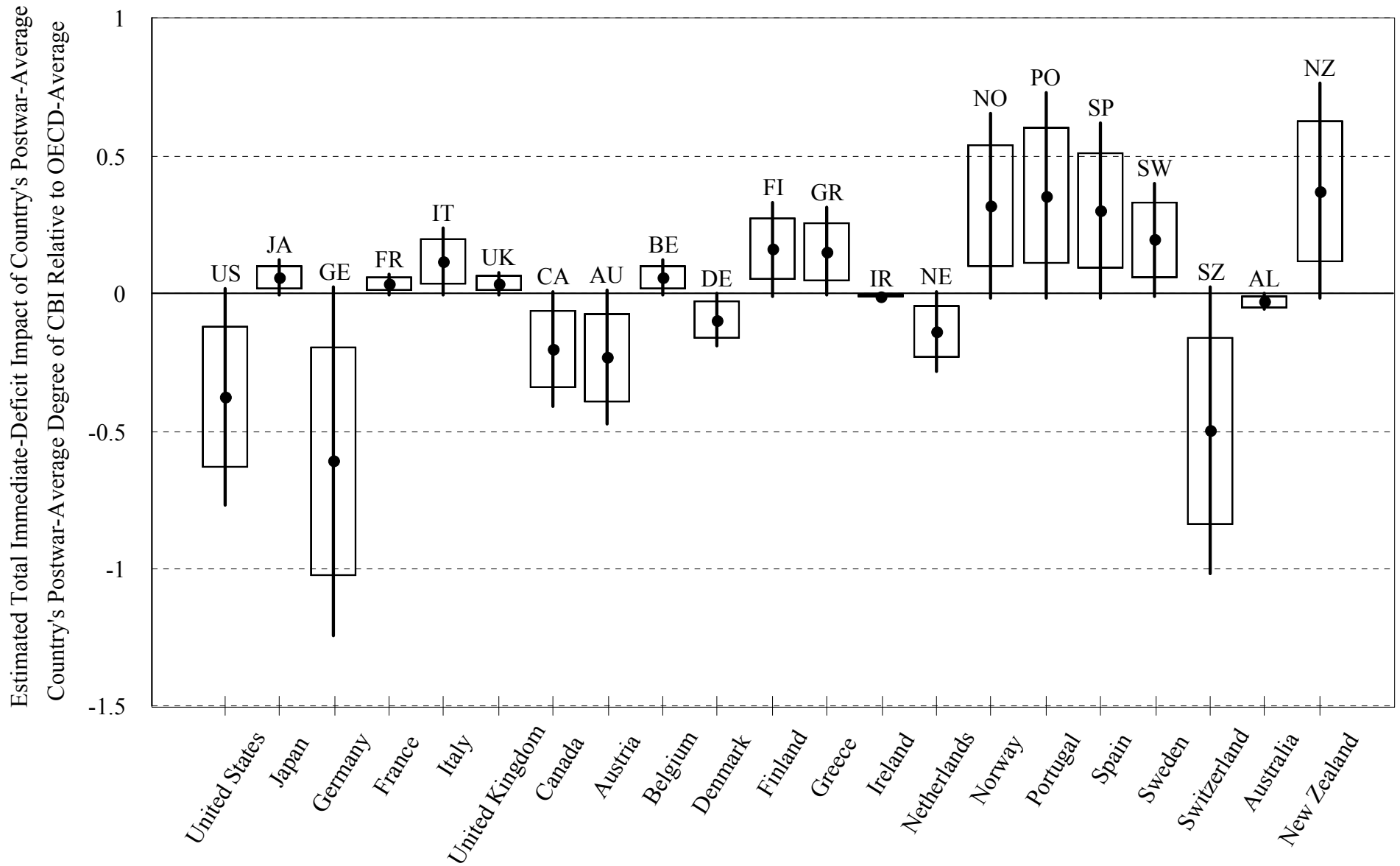
q. Little evidence effect of # districts on debt.



r. Some sign # federal subnational jurisdictions reduces (*ctrl govt*) debt over most of range



s. Some signs fiscal complexity works toward increase debt, though actually trends revenue composition generally simplifying.



t. Sizable estimate cross-crty debt-accumulation effect of CBI.

Immediate and Long-Run Effects on Debt of 1-Standard-Deviation Permanent Shocks

Independent Variable (Standard Deviation)	“Immediate Effect” on Deficit of + 1 Std. Dev. Shock	“Long-Run Effect” on Debt + 1 Std. Dev. Shock
UE (3.64%)	+0.94*	+15.26*
GROWTH (2.78%)	-0.16	-14.91
DXRIG (3.07%)	-0.10	-24.44*
DRIG (4.32%) at mean(D)-s.d.	+0.23*	+35.56*
DRIG (4.32%) at mean(D)	+0.70*	+110.75*
DRIG (4.32%) at mean(D)+s.d.	+1.18*	+185.94*
ToT (.151) at mean(OPEN)-s.d.	+0.24*	-8.39*
ToT (.151) at mean(OPEN)	-0.61*	-34.37*
ToT (.151) at mean(OPEN)+s.d.	-1.47*	-60.34*
OPEN (.245) at ToT=1	-0.07*	+22.05*
ADwiG (1.47) at mean(D)-s.d.	+0.12	+7.93
ADwiG (1.47) at mean(D)	+0.03	+2.19
ADwiG (1.47) at mean(D)+s.d.	-0.05	-3.55
NoP (1.21) at mean(D)-s.d.	-0.19	-32.95
NoP (1.21) at mean(D)	+0.18*	+30.59*
NoP (1.21) at mean(D)+s.d.	+0.55*	+94.12*
LRGDPC (.372)	+0.20	+15.03
OY (.186) at mean(RW)-s.d.	-3.05*	-25.98*
OY (.186) at mean(RW)	-1.57*	-25.98*
OY (.186) at mean(RW)+s.d.	-0.10	-25.98*
RW (.167) at mean(OY)-s.d.	-1.84*	
RW (.167) at mean(OY)	-0.37	Long-run effects of income-disparity are zero by construction.
RW (.167) at mean(OY)+s.d.	+1.11*	
ELE (1)	+0.95*	+21.35*
CoG (1.54) at mean(RR)-s.d.	+0.20*	+14.39*
CoG (1.54) at mean(RR)	+0.11	+8.33
CoG (1.54) at mean(RR)+s.d.	+0.01	+0.82
RR (.334) at mean(CoG)-s.d.	+0.06	+4.36
RR (.334) at mean(CoG)	-0.04	-3.15
RR (.334) at mean(CoG)+s.d.	-0.15	-10.66
PRES (.372)	-0.50*	-36.38*
CBI (.202)	-0.26*	-18.90*
FED (from 1 to 12)	-0.79*	-58.30*
ENED (from 27 to 115)	+0.29	+21.08
AGRETH (.171)	+0.14	+10.24
TTTCR (2.90%)	-0.11	-8.33
ITTCR (9.07%)	+0.36*	+26.55*
CGRGGR (15.0%)	-0.73*	-53.61*

NOTES: “Long-run effects” estimated for permanent 1-std.-dev. increases in independent variable, except: FED and ENED for std.-dev. increases from medians; ELE is for increasing mean .2 to .5 (i.e., from 5 to 2 ELE/yr). DRIG, NoP, and ADwiG assumed at sample-means, except for own effects, which are for std.-dev. increases centered on means. “Immediate effects” are 1st-year responses to 1-std.-dev. increase in independent variable, except: ELE sums 2-year effect of 1 election. * = significant at .10 or better.

F. Broad Conclusions: Explaining the postwar debt-experiences of DD's

1. Econ. cond. central, *BUT* political-institutional factors can be as important.
2. High real-interest-net-of-growth-rates (*DRIG*) & highly fract'd govts (*NoP*) esp.:
 - a. magnify the long-run impacts of *all* other public-debt determinants
 - b. had disastrous long-run consequences where such other PE conditions debt-inducing

G. "Weak Governments" Conclusions:

1. "Weak Govts" retard policy-adjust, i.e. cause inaction (here: delay stabilization):
 - a. ⇒ Interaction of "weak govt" w/ outstanding debt to reflect "retardation" prediction
 - b. ⇒ magnifies all factors' long-run impacts, its own & others'
 - c. Inactive governments may induce *lower* deficits when debt is currently low
2. Govt'l fractionalization & polarization are main political factors receiving prior empirical attention, often no more important than other pol-institutional factors.
 - a. Fractionalization critical at extreme debt, moderate influence around mean, & *reduces* deficits at low debt; matters mostly b/c it magnifies long-run impacts of all factors.
 - b. Polarization does not appear terribly important, controlling for fractionalization. May suggest something about when polarized governments form.
3. *Veto-actor unambiguously dominates influence conception of governmental fract. and polar.*

H. Inter-/Intra-Gen'l-Transfers Conclusions: Age/income demographics substantive importance may remain, but theory refinement suggested:

1. Translating numbers and other resources to political power,
2. Relevance demographics to actual & expected grow (not *yet* in model & meas.),
3. Do we have the motivations of different age-groups correct?

I. Electoral and Partisan Budget Cycles, and Strategic Debt-Manipulation

1. Election-year BC's seem important two ways - Time to reopen Tufte's agenda?
 - a. Statistically strong pre- *and post*-electoral deficit cycle: three possible explanations.
 - b. Increasing electoral-cycle frequency can have sizable *long-run* impact.
2. Partisan deficit-cycles seem rather less important, esp. near sample means, & often opposite popular perception; both simple partisan theory & *strategic debt-manipulation* theories warrant revisit:
 - a. Systems w/ frequent, large govt-partisan shifts can have appreciable, standard PBC's.
 - b. Reconsider left/right partisan goals regarding slow-adjusting stock variable like debt?
 - c. Multiple policy instruments: debt a preferred means to achieve strategic partisan ends?

J. Macro-Institutions: Presidentialism/parliamentarism (PRES, -), central bank independence (CBI, -), federalism (FED, -), and electoral districting (ENED, +) have small-to-moderate deficit-impacts, but, b/c long-lived or permanent, can have very large long-run debt-effects.

1. Likely little relevant to cross-time, but may be key to explain cross-ctry variation.
2. However, rethink in terms of policy-adjustment implications?
3. What's a 'constituency'? (Franzese and Nooruddin 1999)
4. Better, more-detailed, & fuller measures budgetary institutions (von Hagen *et al.*)

K. Fiscal-Complexity & Fiscal Illusion: seem statistically real & among substantively most important.

1. Revisit Downs (1960): relative opacity of spending & revenue sides of fisc
 - a. measurement exercise incomplete; theory under-specified.
2. Simplifying fisc may facilitate efficient voter evaluation of public activity and its revenue- and spending-side composition.

L. Summary Conclusion:

1. Evidence argues for eclectic approach explain postwar debt-experiences DD's.
2. Pattern of answers to A&P's two questions "Why more in some countries and less in others?" and "Why now and not before" now clearer:
 - a. Now largely b/c econ cond's worsened & then policy-shift brought $\uparrow \uparrow r$ relative to Δy
 - b. Where:
 - (1) Dramatically exacerbated where fractionalized govt's delayed stabilization (*e.g.*, Belg., Italy);
 - (2) Persistent macro-institutional (including electoral frequency) and fiscal-structure differences increased cross-national disparity debt-accumulation;
 - c. Higher-frequency developments deficit, debt, & fiscal policy:
 - (1) Demographics, income, and their distributions may play some role; theoretical and empirical specification improvements suggested?
 - (2) Election-year politics seem to play role in fluctuations (& frequency in cross-national differences): "Rumors of demise greatly exaggerated." Time to re-open Tufte's agenda?
 - (3) Conversely, partisanship & polarization w/in & across govt & replacement risk seem to have played lesser roles. Again, theoretical & empirical specification improvements suggested?

3. However, even encompassing model explains not much more than $\frac{1}{2}$ total var in DD deficits 1956-90, so another $\frac{1}{2}$ A&P's two questions remains unanswered.
4. *Opportunity*: out-of-sample prediction (& cross-validation) to past 15-yrs $\downarrow \uparrow$ debt?

M. Political-Economic Implications:

1. Economic Effects: VAR exploration (see next slide) of Ricardian equivalence & related propositions regarding economic effects of public debt \Rightarrow not much real-growth impact, more impact on UE (-) and INF (+)
2. Political Consequences:
 - a. Battles over public budgeting *reform* look a lot like familiar Hibbsian struggles
 - b. Reinforces asset-holders (inflation-averse) v. workers (UE averse) divide
 - c. *Policy crowding out*: fiscal policy maneuverability and efficacy declining.

Responses of GDP-Index Inflation, Real GDP per Capita, Unemployment and Debt
To One-Standard-Deviation Innovations in Debt (+/- 2 Standard Errors)

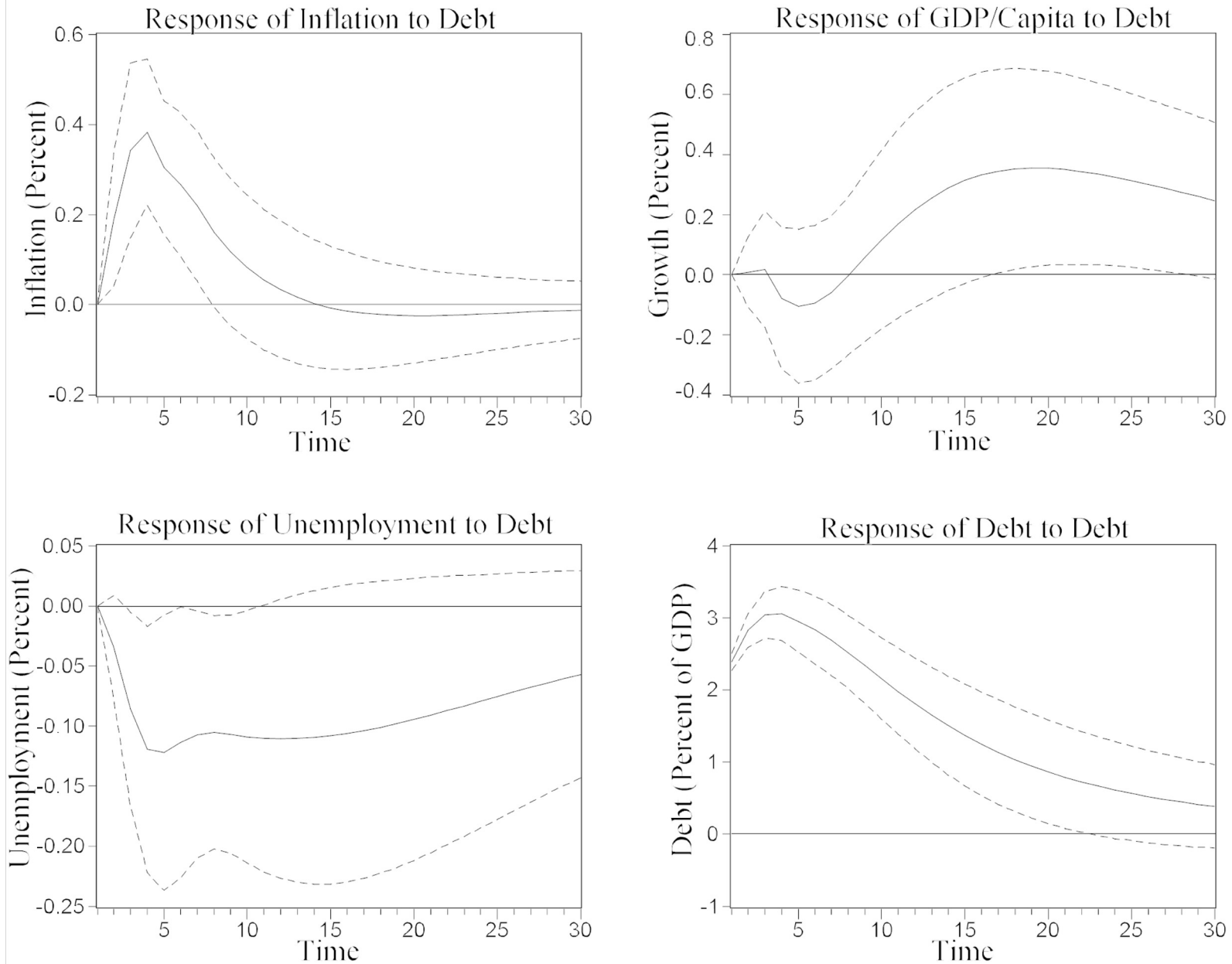


Figure III.14: Responses of Inflation, Growth, and Unemployment to Public Debt

V. Chapter IV: Monetary Management of the Macroeconomy

A. Abstract:

1. As economic conditions & evolution of social transfers & public debt through 70s into 80s increasingly hindered fiscal-policy options & efficacy, govts in dev'd dem's turned to monetary policy to fulfill commitments to macro management.
2. Ch. 4 explores how such monetary regulation of inflation & unemployment, in turn, depended for its efficacy on institutions & structure of labor & goods mrkts, credibility & conservatism of the monetary-policy authority, & their interaction.
3. Central-bank-independence (*CBI*) & coordinated-wage-bargaining (*CWB*) lit's reviewed, then synthesized & extended, emphasizing that degrees of *CBI* & *CWB* interact, w/ each other & w/ sectoral structure econ, to shape incentives facing political-economic actors involved in monetary policy & wage-price bargaining.
4. The UE & INF experiences of 21 developed democracies under floating exchange-rates support that synthesis & extension.

5. The conclusion addresses two issues of pressing intellectual & practical concern:
 - a. Likely effects of (then newly forming) autonomous and conservative ECB and roots of apparent collapse of *CWB* in some countries.
 - b. Explains how expanding pub-sect employ, which wage-equalization in higher-*CWB* countries may have abetted, increased real costs associated with govts' policy-shifts toward monetary conservatism in such economies, which were previously those where such conservatism would have been most beneficial.
6. Concluding discussion returns to implications arg's & findings for continued maintenance and utility of the KWS and continuing democratic conflict over it.

B. Introduction:

- 1.** Through 70s into 80s, economic performance deteriorated and public transfers and debt grew dramatically (though variably), reducing fiscal-policy maneuverability & efficacy in fulfilling govt commitments to KWS
- 2.** With floating exchange-rates & increasing capital mobility further hindering fiscal efficacy & maneuverability but freeing monetary policy (& perhaps increasing its efficacy in macro management if so directed), govts turned toward monetary conservatism to redress at least the inflation part of stagflation
- 3.** The right turned first, and readily, to new conservative orthodoxy; left turned later, settling eventually on (at least monetary) macro conservatism with micro activism (as described in Boix's first book, e.g.).
- 4.** This chapter will explore monetary management of nominal & real economy, then the political implications thereof.

C. Anti-inflationary Monetary Policy: Nominal Effects

1. Political scientists and economists generally agree that CBI lowers inflation; both also similarly define CBI as the degree of autonomy of the (conservative) central bank from the political authority in the making of monetary policy
 - a. From the political scientist's view:
 - (1) CB is a bureaucratic institution, populated by financial experts who are generally hawkish on inflation, whether socialized to that view or coming from a population with those interests.
 - (2) The government, on the other hand and especially in democracies, is more responsive to various societal pressures which may emerge for inflation.
 - (3) Only the most conservative of governments would be as anti-inflationary as the bank itself, so delegation of monetary-policy authority to the central bank, *i.e.* CBI, reduces inflation.
 - b. From the (neoclassical) economist's view:
 - (1) monetary policy involves a time-inconsistency problem which produces an inflationary bias if policy is controlled by a government responsive to societal pressures.
 - (2) Credible delegation of monetary authority to indep. & conservative central bank can serve as commitment device that circumvents time-inconsistency problem & \therefore inflationary bias
 - (3) thus CBI lowers inflation.

- c. Some critics argue that CBI is epiphenomenal, it and inflation being caused by socio-political strength of anti-inflation forces.
 - (1) Typical institutions epiphenomenal argument with typical weakness.
 - (2) Evidence speaking directly to this notion in this context soundly rejects it.
- 2.** However derived, thesis that CBI lowers inflation was incompletely understood, this misunderstanding was translated into its empirical testing, and thus many important theoretical & empirical implications of argument have been missed.
 - a. Simple point: CB autonomy from political authority in monetary policymaking is, by definition, a matter of *degree*
 - (1) Independence from the political authority could never be complete because the bank's authority invariably derives from legal statute or constitutional provision.
 - (a) Either is subject to change by political authority if bank's policies were to become sufficiently distasteful to it so as to justify expenditure of political capital necessary to change bank's status.
 - (b) Especially since responsibility for appointment of CB authorities lies with government.
 - (2) Nor can govt costlessly ensure CB conducts policy exactly according to govt's current will.
 - (a) CB enjoys expertise &/or informational advantage over govt with regard to monetary policy,
 - (b) and in any case at least time if not also other resources are required for the government even to monitor the bank much less to conduct monetary policy itself.

- (3) CBI must \therefore measure *how far* CB could stray from current gov't's desires before gov would find pol-econ costs of altering bank law or of seizing monetary reins directly itself worth bearing
- (4) \therefore monetary policy & so INF always partially controlled by CB and partially by current gov't

b. From this simple point, four substantive implications:

- (1) Arg. suggests observed INF is wtd average of what it would be if conservative CB credibly, completely, & autonomously controlled monetary policy & what it would be if instead current gov't controlled mon pol w/o any influence from CB, with \circ of CBI weighing former.
- (2) It follows, 2nd, that anti-inflationary impact of CBI is not constant, as previously estimated, but rather varies depending on the political-economic environment in which CB operates.
 - (a) *E.g.*, anti-inflationary effect CBI should be greater when left controls gov't, should be less the more trade-open, should vary depending on other labor- & goods-market institutions in the system, *etc.*
 - (b) As with all interactive propositions, converses inescapably implied also: *e.g.*, difference of INF under left & right gov'ts and anti-inflationary effect trade-openness should be less the greater is CBI, *etc.*
- (3) 3rd, this implies, that, b/c their political-economic environments differ, some countries at some times will find CBI more advantageous on anti-inflationary grounds than others will. \therefore , *ceteris paribus*, certain ctry-times will be more likely to see \uparrow or \downarrow CBI than others.
- (4) 4th, this specific argument illustrates broader point about institutions in **C&IPE**: effect of any given institution is contextual—it depends on configuration of other political, economic, structural, & institutional features of the setting in which the institution in question *interacts*.

3. A simple neoclassical theory of monetary policy, inflation, and employment:

a. Derive argument from standard neoclassical model of monetary policy because

- (1) familiarity, internal cohesion, and formal illustrative clarity, and
- (2) more interesting to show that even the relatively sparse neoclassical model concludes that the impact of CBI on inflation depends on the broader political-economic setting

b. The Model:

(1) Policy-maker's utility:

$$V^g = -\left[\frac{1}{2} A_g (N_g^T - N)^2 + \frac{1}{2} (\pi_g^T - \pi)^2\right] \quad (1)$$

(2) The economy:

$$N = N_n + \alpha(\pi - \pi^e) \quad (2)$$

(3) *Discretionary Eqbm*: Subst. (2) into (1), max w.r.t. π , then set π^e equal to π (i.e., apply RE), \Rightarrow :

$$\pi_d^* = \pi_g^T + A_g \alpha (N_g^T - N_n) \quad (3)$$

(4) \Rightarrow INF higher than discretionary authority's ideal point (that's the bias), however, if CB could be given very conservative mandate and endowed with sufficient independence from political authority, commitment inflation could be lower:

$$\pi_c^* = \pi_b^T + A_b \alpha (N_b^T - N_n) \quad (4)$$

(5) Usu. assume A_b & $\pi_b^* \approx 0$ for CB; certainly lower than analogous parameters for govt anyway

[Aside: A neoclassical monetary theory in more detail

Start with a “rational expectations” model of a perfect-competition economy:

- (1) $Y = Y_n + \alpha(\pi - \pi^e)$ output (Y) generally equal to natural output (Y_n), but short-run prices may be sticky so, if monetary authority created $INF > \text{expected } INF$ (*i.e.*, if $\pi - \pi^e > 0$), then output temporarily exceeds natural rate. *I.e.* short-run (or expectations-augmented) Phillips curve (with slope α).

Now suppose the policymaker has a value function given by:

- (2) $V = -(1/2)A(Y - Y^T)^2 - (1/2)\pi^2$ \Rightarrow policymaker does not like deviations of output from some (presumably high) target rate Y^T , & dislikes inflation.

So, policymakers w/ preferences described by (2) facing economy described by (1) & controlling INF rate directly (a simplification), will act as if solving the following maximization:

$\text{Max}_{\pi} -(1/2)A(Y_n + \alpha(\pi - \pi^e) - Y^T)^2 - (1/2)\pi^2$ where, notice, (1) has been substituted into (2)

$\Rightarrow -A \alpha (Y_n + \alpha(\pi - \pi^e) - Y^T) - \pi = 0$...maximize by taking derivative of expression to be maximized w/ respect to control variable (π) & setting result equal to zero...

$\Rightarrow (1 + A \alpha^2)\pi = -A \alpha (Y_n - \alpha \pi^e - Y^T)$...rearranging...

- (3) $\Rightarrow (1 + A \alpha^2)\pi = A \alpha^2 \pi^e - A \alpha (Y_n - Y^T)$...rearranging again...

So, policymakers w/ preferences (2), facing economy (1), choose INF given by (3), but here's the “rational expectations” part. Price setters *know* policymakers behave this way, so their π^e expectations will also be given by (3). *I.e.*, in eqbm, something Abe-Lincoln-like: “you can't fool all the people all the time”. On average, π^e will equal π . So, rewriting (3) with $\pi^e = \pi$ gives you:

- (4) $\pi = A \alpha (Y^T - Y_n)$ and, substituting $\pi^e = \pi$ back into economy, (1), we get that in eqbm:

- (5) $Y = Y_n + \alpha(\pi - \pi^e) = Y_n + \alpha(\pi - \pi) = Y_n + 0 = Y_n$

I.e., monetary policy has no real effects in eqbm. If so, then to avoid real costs of monetary contraction: simply announce contraction soon enough & be believed so $\pi^e = \pi$ reflected in wage & price contracts will include expected contraction...]

c. In any event, since CBI matter of degree, we expect to observe inflation given by:

$$\pi = C \cdot \pi_c(X_c) + (1 - C) \cdot \pi_g(X_g) \quad (5)$$

which implies that the impact of CBI on inflation is:

$$\frac{\partial \pi}{\partial C} = -[\pi_g(X_g) - \pi_c(X_c)] = f(X, \cdot) \quad X \equiv X_g \cup X_c$$

$$\frac{\partial \pi}{\partial x} = (1 - C) \cdot \frac{\partial \pi_g}{\partial x} + C \cdot \frac{\partial \pi_c}{\partial x} = g(C, X, \cdot) \quad (6)$$

$$\frac{\partial \frac{\partial \pi}{\partial x}}{\partial x} \equiv \frac{\partial \frac{\partial \pi}{\partial x}}{\partial C} = -\left[\frac{\partial \pi_g}{\partial x} - \frac{\partial \pi_c}{\partial x} \right] = h(\cdot)$$

in other words, anything that increases the inflation rate the political authority would pursue unhindered by bank relative to what the bank would pursue uncontrolled by govt, the greater the anti-inflationary impact of CBI.

- 4.** This conclusion does not depend on neoclassical model monetary policy & INF:
- a. If CB's generally more conservative on inflation than governments, &
 - b. CBI defined as degree of autonomy of CB from govt in conduct monetary policy, &
 - c. Possible CB have some effective autonomy from current govt (*i.e.*, institutions matter),
 - d. Then CBI lowers inflation in some weighted-average manner of this sort.
- D.** Empirically, identify six factors that should affect INF under control of current govt and be mitigated in that effect by degree of CBI:
- 1. Government partisanship:** left govts more inflationary than right (Higher A_g);
 - 2. Trade openness:** more-open econs, INF more costly & stimulus leaks (Lower α);
 - 3. Inflation Abroad (π_a):** absent policy to counter, INF abroad generally imported;
 - 4. Union Density:** without coordination, leads to lack of wage restraint (Lower N_n)
 - 5. Coordination Wage/Price Bargaining (**CWB**):** wage/price restraint (Higher N_n)
 - 6. Financial-sector employment:** strength anti-inflation influence on political authority emphasize fin-sect political strength in recent epiphenomenality args.

7. ⇒ Empirical models:

- a. Standard linear-additive model controls other pol-econ factors to estimate CBI effect:

$$E(\pi) = \mathbf{B}_0 + \beta_{gp} GP + \beta_{ey} EY + \beta_{up} UP + \beta_{bc} BC + \beta_{aw} AW + \beta_{fs} FS + \beta_{te} TE + \beta_{\pi a} \pi_a + \beta_{cbi} C \quad (5)$$

- b. Standard linear-interactive model allows CBI modify effect each pol-econ factor, & vice versa; each factor's effect potentially modified arbitrarily differently:

$$E(\pi) = \mathbf{B}_0 + \beta_{gp} GP + \beta_{ey} EY + \beta_{up} UP + \beta_{bc} BC + \beta_{aw} AW + \beta_{fs} FS + \beta_{te} TE + \beta_{\pi a} \pi_a + \beta_{cbi} C + \beta_{cgp} C \times GP + \beta_{cey} C \times EY + \beta_{cup} C \times UP + \beta_{cbc} C \times BC + \beta_{caw} C \times AW + \beta_{cfs} C \times FS + \beta_{cte} C \times TE + \beta_{c\pi a} C \times \pi_a \quad (6)$$

- c. Model that reflects the theoretical structure of these interactions—the effect of all PE factors to which govt would respond are dampened proportionately toward CB's unresponsive target as CBI increases:

$$E(\pi) = \mathbf{B}_0 + (\beta_{gp} GP + \beta_{ey} EY + \beta_{up} UP + \beta_{bc} BC + \beta_{aw} AW + \beta_{fs} FS + \beta_{te} TE + \beta_{\pi a} \pi_a) \cdot (1 - \beta_{c1} C) + \beta_{c1} C \cdot \beta_{c2} \quad (7)$$

Table 1: Alternative Models of Inflation in Developed Democracies, 1972-90

Parameter (name of variable or group of variables)	(A) Model ?	(B) Model	(D) Model (7)
β_g (G_{t-1})	-.287 (.096)	-.517 (.311)	-.526 (.156)
β_f (F_{t-1})	-46.4 (10.5)	-64.0 (33.1)	-82.6 (19.1)
β_t (T_{t-1})	-1.10 (.575)	-8.36 (3.06)	-2.45 (1.04)
β_u (U_{t-1})	+4.53 (1.21)	+10.6 (3.35)	+8.73 (2.16)
β_{cwb} (CWB)	-3.88 (.775)	-4.84 (1.97)	-7.15 (1.44)
$\beta_{\pi a}$ (π^a_{t-1})	+2.66 (.097)	+6.50 (.212)	+5.64 (.164)
<i>CBI (non-interacted)</i>	$\beta_{cbi,1}$ (CBI_{t-1})	-2.33 (.907)	-2.53 (8.71)
<i>CBI times effect of all other factors (X_t)</i>	$\beta_{cbi,2}$ ($CBI_{t-1} \cdot X_{t,t-1} B$)	—	-.838 (.106)
<i>Simple Linear- Interactions</i>	$\beta_{c,g}$ ($CBI_{t-1} \cdot G_{t-1}$)	—	+4.32 (.671)
	$\beta_{c,f}$ ($CBI_{t-1} \cdot F_{t-1}$)	—	+15.8 (59.3)
	$\beta_{c,t}$ ($CBI_{t-1} \cdot T_{t-1}$)	—	+14.7 (6.12)
	$\beta_{c,u}$ ($CBI_{t-1} \cdot U_{t-1}$)	—	-10.4 (5.74)
	$\beta_{c,c}$ ($CBI_{t-1} \cdot CWB$)	—	+1.76 (3.54)
	$\beta_{c,\pi a}$ ($CBI_{t-1} \cdot \pi^a_{t-1}$)	—	-.698 (.331)
Observations (Degrees of Freedom)	342 (332)	342 (326)	342 (331)
Adjusted R² (Standard Error of Regression)	.675 (2.675)	.688 (2.624)	.689 (2.619)

NOTES: Coefficients on constant and LDVs suppressed. All models estimated in E-Views 2.0 by OLS or NLS with Newey-West HAC variance-covariance matrices.

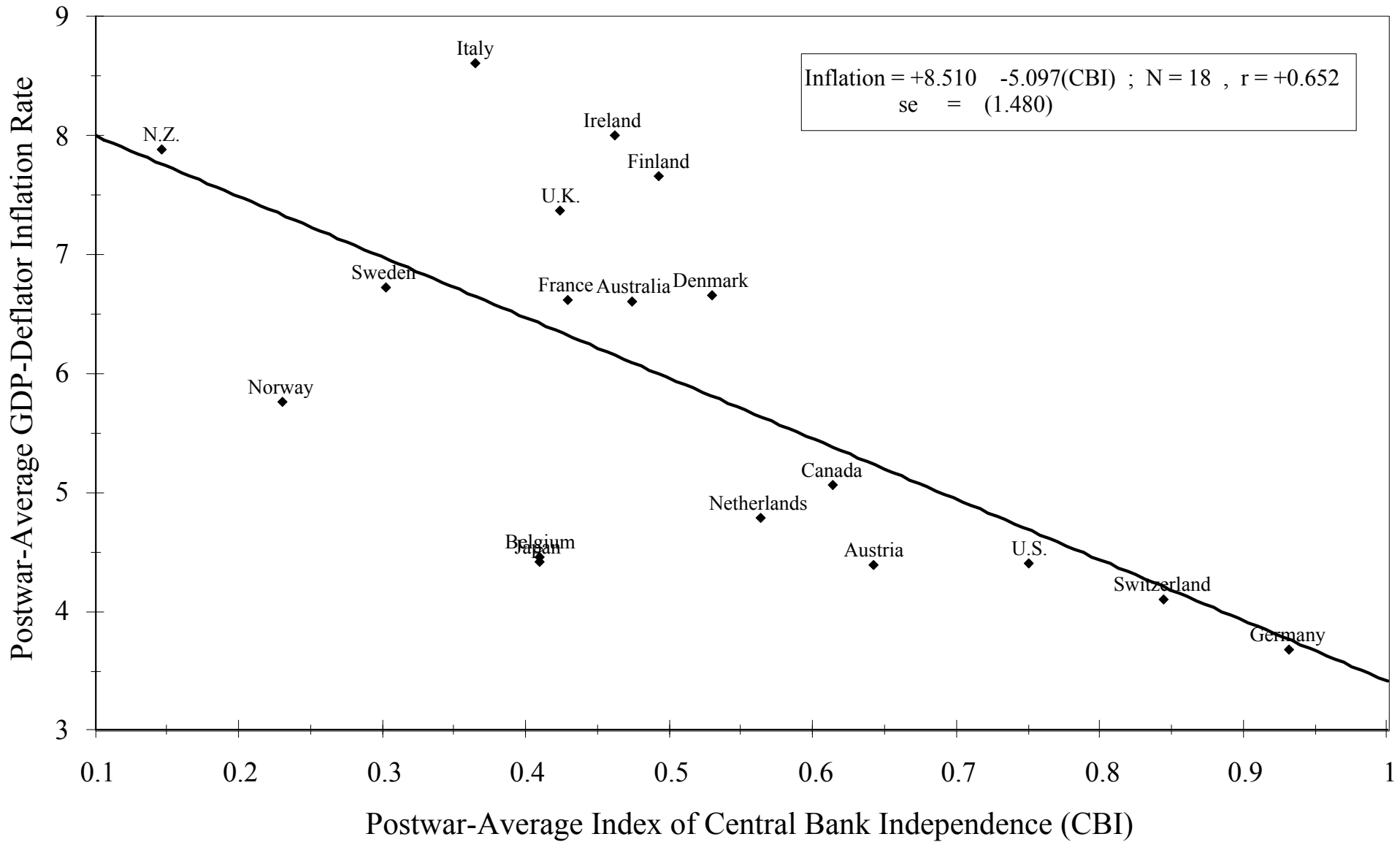


Figure 45: A Typical Bivariate Regression of Inflation on Central Bank Independence

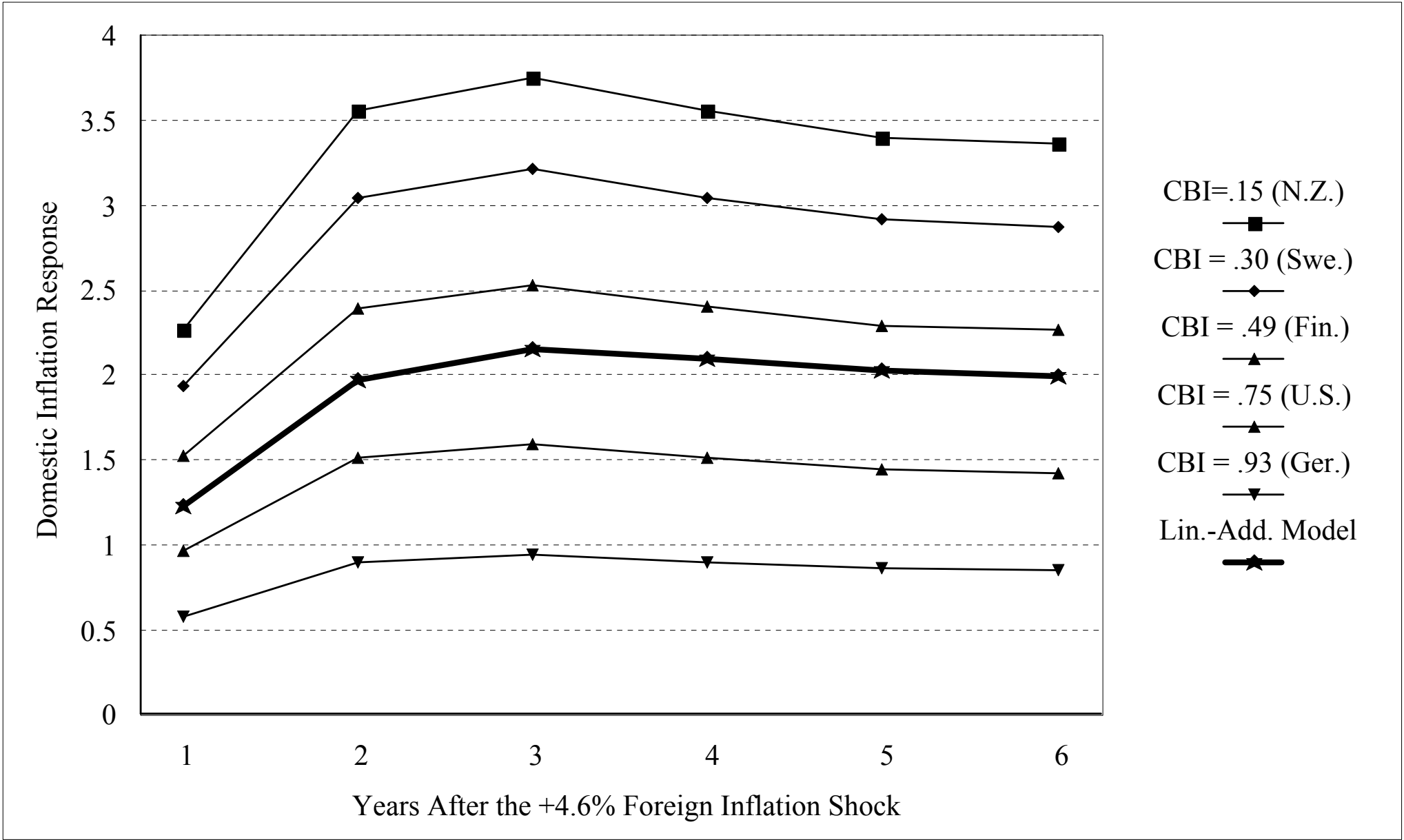


Figure 46: The response of domestic inflation to the Bretton Woods collapse and the first oil crisis (a +4.6% foreign inflation shock by assumption), as a function of the degree of central bank independence characterizing the domestic political economy.

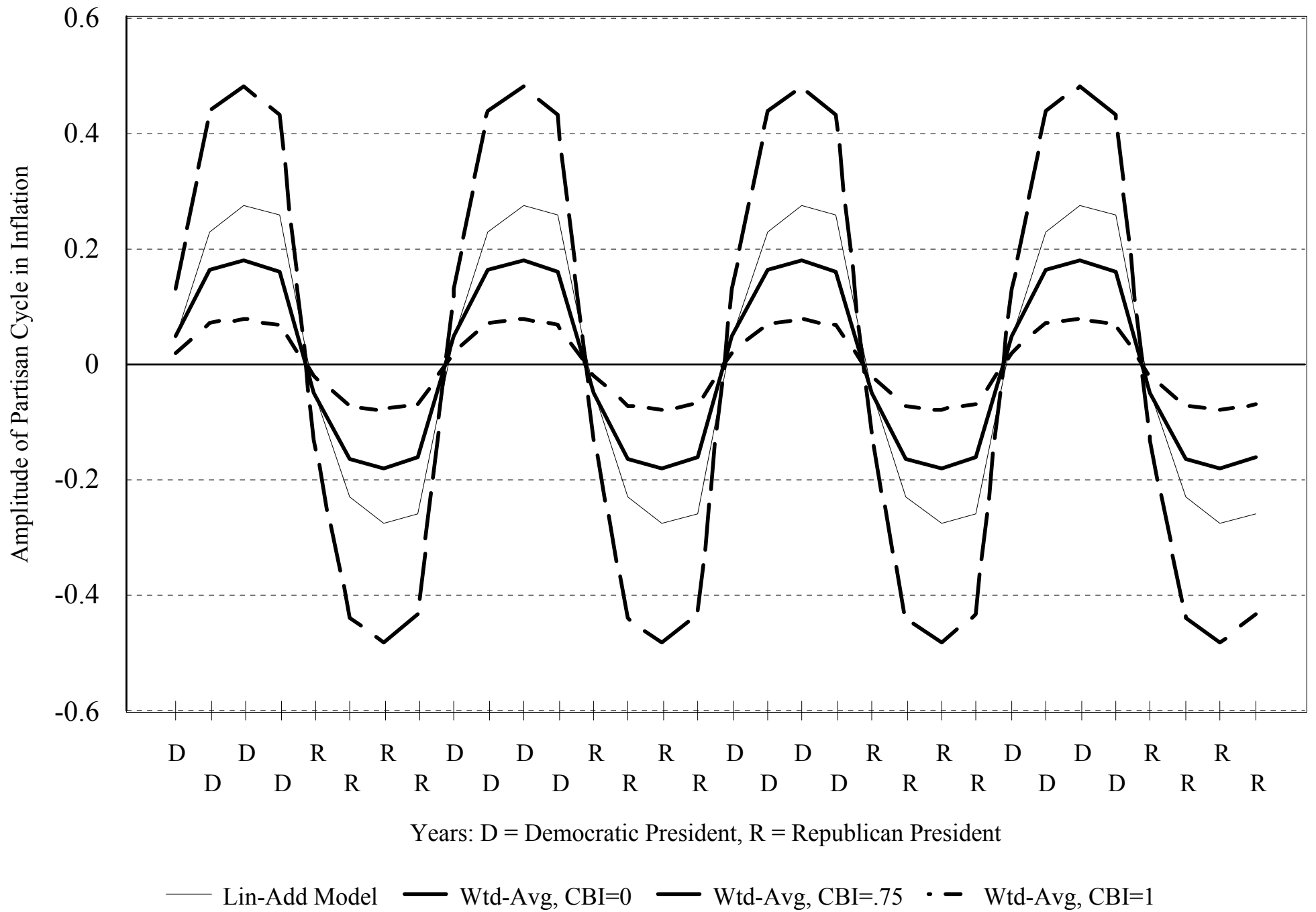


Figure 4: Mitigation of partisan cycles in inflation by the degree of independent of the central bank.

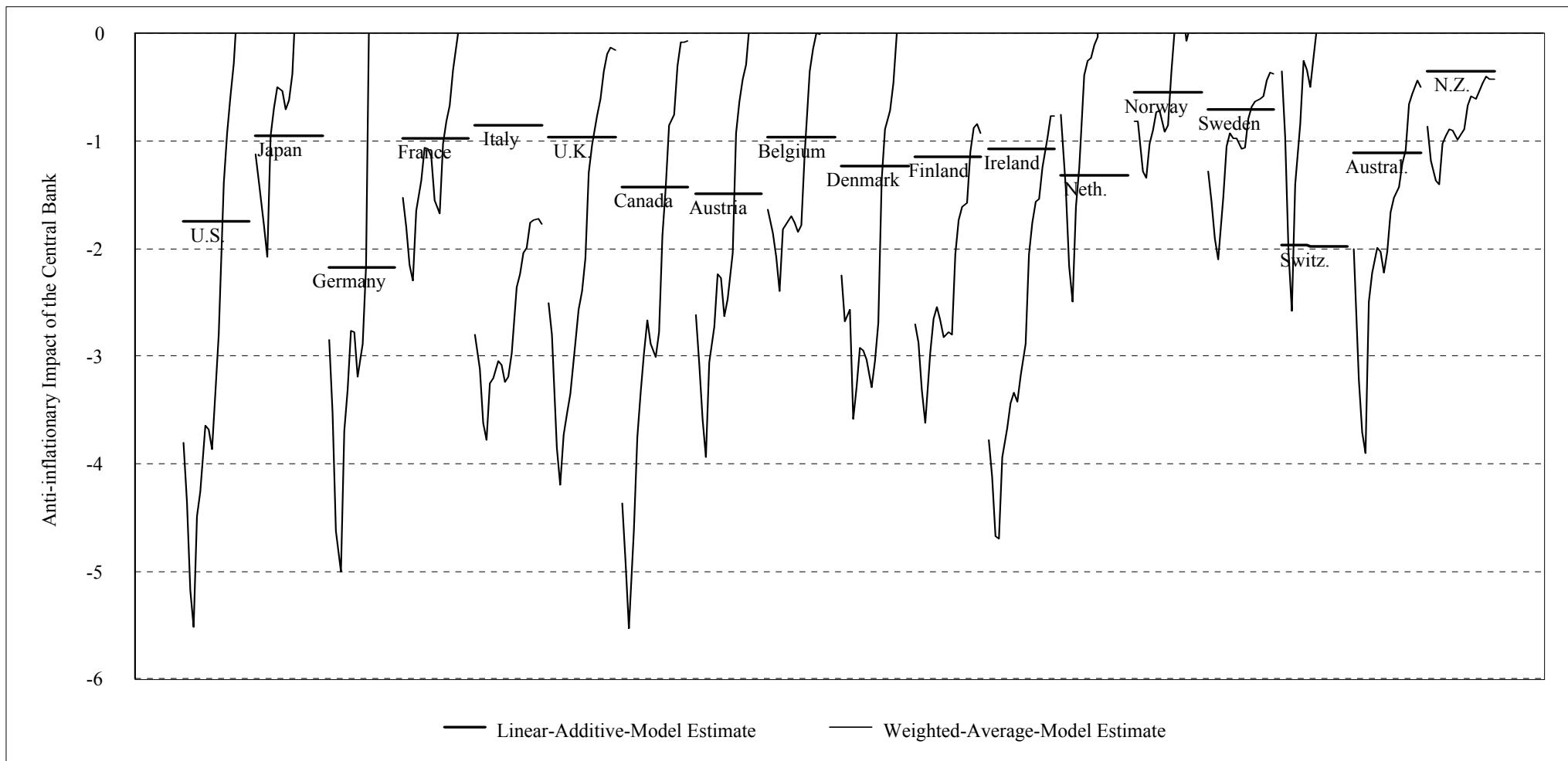


Figure 5 Comparison of the linear-additive and weighted-average estimates of the anti-inflationary impacts of OECD central banks given their degree of independence and the level of other variables in that country-year. The data for each country are from 1972 to 1990, left to right.

8. Two Key Conclusions:

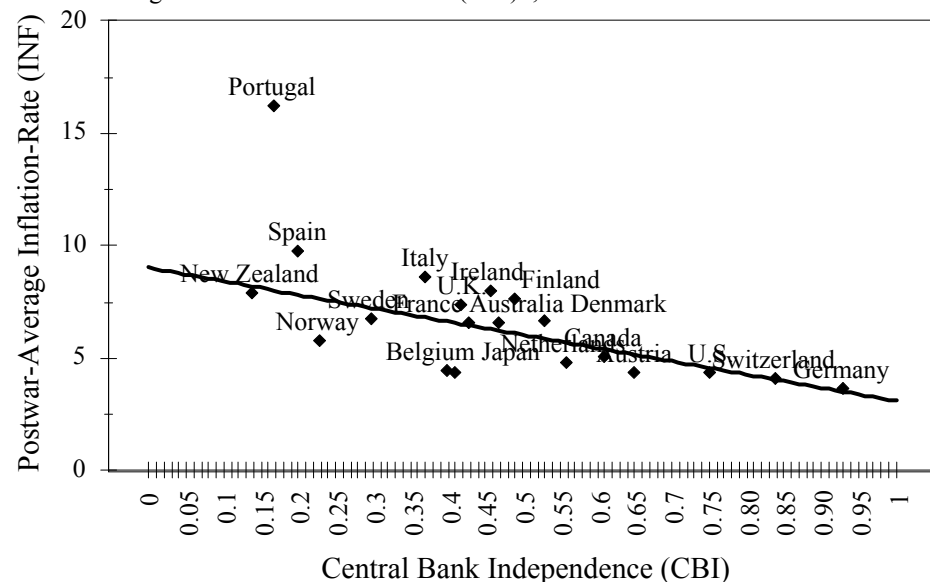
- a. *Effects Conditional*: Anti-inflationary effect of shift toward monetary conservatism in CBI depended on how anti-inflationary structure interests pressing on govt had become
- b. Empirically, anti-inflationary impact had radically diminished by time such shifts actually made, suggests “lock-in” activity

E. Anti-Inflationary Monetary Policy: Real Effects

1. Neoclassical arg, model, evidence reviewed above, suggested no eqbm real cost:

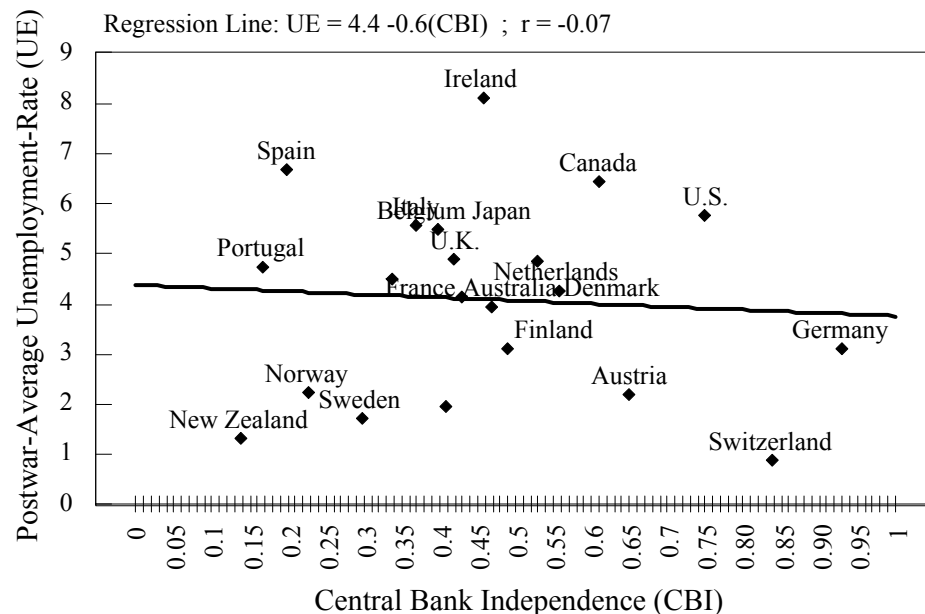
Bivariate Regression of Postwar-Average Inflation on Central Bank Independence

Regression Line: $INF = 11.5 - 9.7(CBI)$; $r = -0.63$



Bivariate Regression of Postwar-Average Unemployment on Central Bank Independence

Regression Line: $UE = 4.4 - 0.6(CBI)$; $r = -0.07$



- a. But that too sanguine because wrongly assumes only characteristics of signal-sender, not of audience, matters.
 - b. Notice in figure to right how may be nonlinear relation, or two different relations...
2. Consider std arg's regarding nominal & real effects wage/price bargaining:

- a. Encompassing (Olson '65) wage-price bargaining can achieve real & perhaps nominal wage- & price-setting restraint & thereby has beneficial employ & perhaps INF effects.
- (1) One person's wage-earnings or output-price is another's wage-cost or input-price;
 - (2) So: bargaining in very fragmented units \Rightarrow externality of 1 bargain's wages (prices) lowering another's real value is ignored. \therefore , fragmented wage& price settlements higher than need be.
 - (3) Encompassing or coordinated bargaining internalizes these externalities, so CWB induces wage-price restraint thereby lowering unemployment and inflation. Heuristic model:

$$V_j^u = V^u(\omega_j^c, \varepsilon_j(y, \cdot)) \text{ with } V_\omega^u \equiv \frac{\partial V^u}{\partial \omega^c} > 0 ; V_\varepsilon^u \equiv \frac{\partial V^u}{\partial \varepsilon} > 0 ; \varepsilon' \equiv \frac{\partial \varepsilon}{\partial y} > 0$$

$$\frac{dV_j^u}{dw_j} = V_\omega^u \left(1 - \frac{d\pi}{dw_j} \right) + V_\varepsilon^u \left(\frac{d\varepsilon}{dy} \cdot \frac{dy}{dw_j} \right)$$

- (4) Latter gives marginal utility to union j of marginal increase in its nominal wage:
 - (a) Std trade-off is gain consumption real-wage vs. lose employment
 - (b) Std arg: CWB reduces former & increases latter, so induces restraint.
- (5) Some important additions to std arg arise later—Soskice adds employers & employer-led coord, & consider relative-price effect of j 's nominal wage-price increase \Rightarrow wage-earners' demands v. employer resolve to resist & \Rightarrow Calmfors&Driffills' *hump-shape* hypothesis. [elab]

3. Can consider baseline simple evidence for std CWB argument analogously

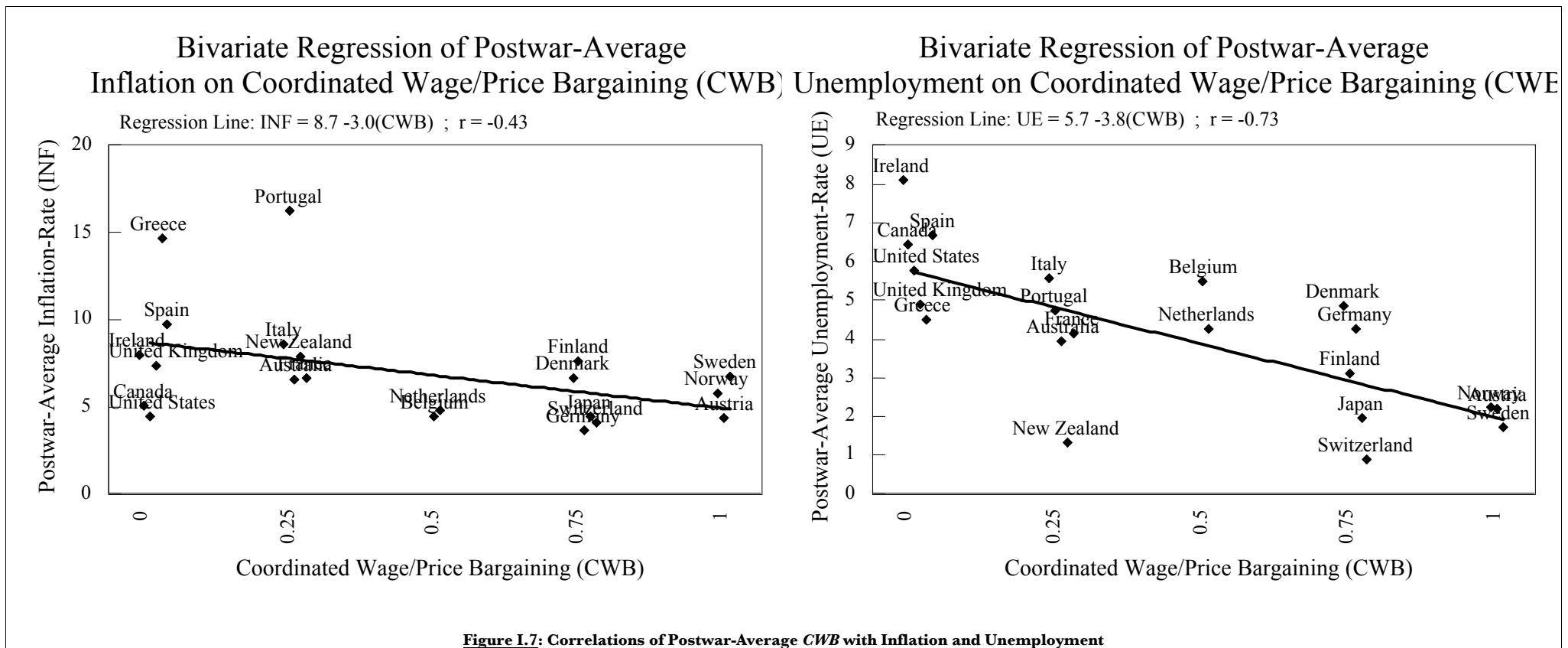


Figure I.7: Correlations of Postwar-Average CWB with Inflation and Unemployment

- a. Note: supportive, though smaller impact on nominal side
- b. Quite a lot of unexplained variation—may suggest unexplored interactions.

4. To explore these potential interactions, let's expand heuristic model of wage-price bargaining to allow monetary authorities respond to $w&p$ settlements.

- a. Again union-firm Nash-bargaining settlements \Rightarrow suffices to examine these marginal values from getting/ceding a nominal increase (simplify by assuming fixed mark-ups):

$$\frac{dV_j^u}{dw_j} = V_\omega^u \left(1 - \frac{d\pi}{dw_j} - \frac{d\pi}{dm} \cdot \frac{dm}{dw_j} \right) + V_\varepsilon^u \cdot \frac{d\varepsilon}{dy_j} \cdot \frac{dy_j}{dy} \cdot \left(\frac{dy}{dw_j} + \frac{dy}{dm} \cdot \frac{dm}{dw_j} \right) + V_\rho^u \cdot \frac{d\varepsilon}{dy_j} \cdot \frac{dy_j}{d\rho} \cdot \left(1 - \frac{d\pi_{i(j)}}{dw_j} - \frac{d\pi_{i(j)}}{dm} \cdot \frac{dm}{dw_j} \right)$$

$$\frac{dV_j^e}{dw_j} = V_y^e \cdot \frac{dy_j}{dy} \cdot \left(\frac{dy}{dw_j} + \frac{dy}{dm} \cdot \frac{dm}{dw_j} \right) + V_\varepsilon^e \cdot \frac{dy_j}{d\rho} \cdot \left(1 - \frac{d\pi_{i(j)}}{dw_j} - \frac{d\pi_{i(j)}}{dm} \cdot \frac{dm}{dw_j} \right)$$

- b. First is marginal utility to union j of marginal increase in its nominal wage. 3 terms:
- (1) First term: consumption value real-wage increase
 - (a) smaller the more aggregate inflation moves w/j 's nominal increase;
 - (b) actually greater the more monetary authority shrinks m w/j 's nominal increase & aggregate inflation shrinks $w/$ monetary contraction; generally assumed & seems empirically swamped by other effects.
 - (2) Second term: output (aggregate demand) effect on j 's employment of j 's nominal increase
 - (a) Part One: deleterious effect on AD of aggregate wage/price increase (from before).
 - (b) Part Two: additional deleterious effect of monetary response to aggregate wage/price increase (domestic interest-rate effect on investment).
 - (3) Third term: relative-price effect on j 's employment of j 's nominal increase
- c. **(9)** is marginal utility to employer j of marg. incr. nominal wage. Only latter 2 terms.

d. dm/dw_j terms key to CB-bargainers interaction: reflect how j^{th} bargaining unit expects authorities to alter money supply in response to j 's settlement: the **monetary threat**.

- (1) Mon. authorities often announce intentions not to accommodate excessive wage settlements.
 - (a) If they can make threat large and credible enough for bargainers to perceive costs of expected monetary-reactions to excessive increases to outweigh benefits, then bargainers will refrain from inflationary settlements and monetary threat need not be enacted.
 - (b) Neoclassical synthesis ends there: credible enough monetary authorities wielding big enough threats achieve low inflation at no average cost.
 - (c) However, with only one money supply, policymakers cannot promise different responses to each settlement; can only respond to aggregates.
- (2) Thus, monetary threats, dm/dw_j , as bargainer j perceives them, involve three substantive parts: severity of threatened response to aggregates, dm_t/dw , that threat's credibility, c , and degree to which j expects its settlement to affect aggregates, $d\omega/dw_j$:

$$\frac{dm}{dw_j} \equiv \frac{dm_t}{dw} \cdot c \cdot \frac{d\omega}{dw_j}$$

e. $CBI \uparrow$ threat credibility, c , but it also \uparrow (max threat $b/c \uparrow$) max tradeoff b/w employ & INF that monetary authorities will accept ($CBI \equiv$ autonomous and conservative).

- (1) Questions, therefore, whether tradeoffs must be made on average and, if so, at what rates.
- (2) Answers hinge critically on the institutional and sectoral structure of wage-price bargaining.

5. Note first that dw/dw_j increases in **CWB**.

- a. Thus, when coordination full, all wages & prices settled in central or lead bargain, $dw/dw_j \approx 1$, so that one bargaining unit directly perceives all the monetary threat.
- b. Contrarily, w/ nearly nil coord., unions & firms do not perceive other wages to rise w/ theirs, $dw/dw_j \approx 0$, so atomistic bargainers directly perceive almost none of threat.
- c. Monetary threats discourage unions from demanding & encourage firms in resisting excessive nominal increases by raising real costs of such excessiveness. Monetary non-accommodation reduces real output & demand, which hurts both unions & firms.
 - (1) However, when **CWB** very low, threat times its credibility, $(dm_i/dw) \cdot c$, would have to be extremely high for these aggregate real threats to restrain bargainers without being enacted.
 - (2) For small bargaining units, needed threat *incredibly* large for threat-enactment unnecessary...
 - (a) [Professor story...] Analogous situation for all bargaining dyads in strong market positions, so settlements become increasingly inflationary in aggregate as market power rises across the economy.
 - (3) For monetary authorities to restrain inflation, \therefore , they must enact threats to create recessions to \uparrow UE & \downarrow output enough to cut market power & shift bargaining power toward employers & consumers sufficiently to make ensuing wage and price increases less inflationary.
 - (4) Eqbm reached when bargainers seek no more nominal increases than the bank will tolerate.
 - (5) This explains CB's preoccupation with *excessive* real strength and *incipient inflationary pressures*

6. Simply: anything that lowers enacted threat required to restrain aggregate of bargainers improves the terms of this tradeoff.
- a. Monetary-authority *credibility*, higher c in (10), thus unambiguously beneficial b/c raises efficacy of any given threat size-and-frequency in restraining all bargainers and so allows lower inflation at higher real strength.
 - b. Contrarily, *conservatism*, i.e., greater willingness to enact larger threats is ambiguous. Larger permissible threats may be more effective but may also need to be enacted depending not only on credibility but also on institutions and structure of bargaining.
 - c. Heuristic model also reveals greater **CWB** \downarrow required threats by $\uparrow dw/dw_j$.
 - (1) Coordinated bargainers perceive monetary threats as being more directed at them than do fragmented bargainers, so threats can be smaller/less frequently enacted when **CWB** is high.
 - (2) This explains difference b/w *Bundesbank* and Fed behavior and pronouncements.

- d. Other implications follow from different effects monetary policy across econ sectors.
- (1) Monetary tightening does 2 things: raises interest rates and causes exchange-appreciation.
 - (a) Higher interest reduces consumption & investment & so hurts firms & unions in all sectors dependent on domestic demand, i.e., private sectors; formally, $dy/dm < 0$ and $dy_j/dy > 0 \forall j$ in the private sector.
 - (b) Public-sector workers' employment prospects, however, are unharmed or even benefit by private-demand reduction since public employment is a- or counter-cyclical: $dy_j/dy \leq 0 \forall$ public-sector j .
 - (c) Thus, private-sector bargainers fear monetary contraction more than public-sector.
 - (2) Exchange appreciation triggered by enacted threats enters bargainers' calculations 3 ways.
 - (a) Appreciation hinders demand all domestic goods & services, so harms all private-sector but leaves public-sector relatively unharmed to benefitted: $dy_j/dy \cdot dy/dm > 0 \forall$ private-sector j & $\leq 0 \forall$ public-sector j .
 - (b) Appreciation also implies higher export relative to import prices and thus is especially painful to all units j who compete internationally: $d\pi_{i(j)}/dm < 0 \forall$ trade-sector j .
 - (c) Appreciation lowers import prices & so reduces CPI. Actually benefits consumers, so works against forcing restraint from unions; irrelevant to employers as such, though benefit as consumers too.
 - (d) This last effect is likely dominated by the first two, but notice that it implies, once again, that employer-led may be more conducive than labor-led coordination to wage-price restraint.

7. In sum:

- a. Monetary-threat enactment most costly to private- & especially traded-sector & least costly to (non-competing) pub-sect bargainers. Thus, traded-sector most, sheltered-sector intermediately, & public-sector bargainers least responsive to monetary threats.
- b. Also, more coordinated wage-price bargainers more responsive to monetary threats, and all actors more responsive to more-credible monetary authorities.
- c. Thus, monetary conservatism reduces INF most efficiently (i.e. at least real cost) in political economies w/ credible monetary authorities & traded-sector-led **CWB** & least efficiently w/ less-credible monetary authorities & low or public-sector-led **CWB**.
- d. So, when stagflation & rising constraints described in Ch. II & III pushed democratic govts toward monetary conservatism in reconstructing their macroeconomic-policy paradigms, they paid real economic costs, even where they endeavored to ↑ credibility of that anti-inflationary shift, & they paid more in less-organized or public-sector-led economies, and less in more-organized and traded-sector-led economies.

- e. Consider, finally, interactions of **CWB** with sectoral structure.
- (1) Public-sector bargainers have little incentive to exercise restraint autonomously or to respond to monetary threats; contrarily, traded-sector bargainers are especially disposed toward restraint and to respond to monetary threats. Thus, **CWB** operates differently depending on the sectoral composition of those coordinated (Franzese 1994, 1996b:ch.4; Garrett and Way 1995b, 1999ab). **CWB** is most beneficial, both *per se* and in interaction with monetary authorities, when traded sectors dominate bargaining and public sectors follow.
 - (2) In fact, provided traded sectors continue to dominate, **CWB** is more beneficial the larger the public sectors brought under traded-sector bargain. Traded-sector bargainers deliver restraint relatively easily and require little monetary threat to enforce that restraint, so the rest of the economy need suffer less to control aggregate nominal increases when **CWB** coordinates traded-sector bargains across the economy.
 - (3) On the other hand, should public sectors dominate, **CWB** is less beneficial on both accounts and may even be costly since it then coordinated the public-sector *lack* of incentives toward restraint across the economy.
 - (4) Public-sector bargainers do not easily deliver restraint but rather require large monetary threats to force it upon them, so the whole economy must suffer more to control aggregate nominal increases when **CWB** coordinates public-sector bargains across the economy.
 - (5) Indeed, provided public sectors continue to lead, **CWB** is more costly (less beneficial) the larger the traded sector because the latter most directly and painfully bears the costs of public-sector lack of restraint and conservative monetary responses thereto.

8. So, empirical implications:

- a. **(a1) Monetary conservatism, even if credible, has interactive real effects:** less costly (more beneficial) when wage-price bargaining is coordinated & traded-sector led and more costly when bargaining is uncoordinated or public-sector led.
- b. **(a2) Monetary conservatism, credible or not, has interactive nominal effects:** it reduces inflation, though less when bargaining is coordinated & traded-sector led and more when bargaining is uncoordinated or public-sector led.
- c. **(b1) Coordinated wage/price-bargaining has interactive real effects:** if traded-sector led, it is more beneficial the higher *CBI*; if public-sector led, it is less beneficial (more costly) as *CBI* increases.
- d. **(b2) Coordinated wage/price-bargaining has interactive nominal effects:** it reduces INF more when traded-sector led and less (perhaps increasing it) when public-sector led. *CBI* dampens the magnitude of these effects.
- e. **(c) Sectoral structure has interactive real and nominal effects:** Traded-sector dominance reduces inflation & unemployment by improving efficacy of *CWB* in delivering wage-price restraint & so has more beneficial real effects the higher *CWB* & *CBI* and larger (smaller) beneficial inflation effects the higher *CWB* (*CBI*). The public sector operates oppositely and the sheltered sector intermediately.

F. Empirical Results: Broadly support these claims

Table I.2: The Estimated Inflation Equation

$$\pi = \dots b_c C + b_s S + b_{s2} S^2 + b_{cs} C \cdot S + b_{cs2} C \cdot S^2 + b_{i1} I + b_{i2} I \cdot [b_c C + b_s S + b_{s2} S^2 + b_{cs} C \cdot S + b_{cs2} C \cdot S^2]$$

<i>Coefficient (Cofactor)</i>	<i>Estimate</i>	<i>Std. Err.</i>	<i>t-Statistic</i>	<i>p-Level</i>
CONTROLS				
			...	
b_{cwb} (C ≡ CWB)	-28.150	5.818	-4.838	0.000
b_s (S ≡ G/M)	-34.834	9.968	-3.495	0.001
b_{s2} (S²)	16.000	5.301	3.018	0.003
b_{cs} (C·S)	43.699	11.734	3.724	0.000
b_{cs2} (C·S²)	-19.267	5.955	-3.235	0.001
b_{i1} (I ≡ CBI)	-8.954	11.748	-0.762	0.447
b_{i2} (I·[·])	-0.691	0.157	-4.413	0.000
Number of Observations	347	Degrees of Freedom	323	
R²	0.523	Std. Err. of Regression	1.960	
Adjusted R²	0.489	Durbin-Watson Stat.	1.976	

Table I.3: The Estimated Unemployment Equation

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Err.</i>	<i>t-Statistic</i>	<i>p-Level</i>
CONTROLS				
(a) C=CWB	11.826	3.847	3.074	0.002
(b) I=CBI	20.314	6.885	2.951	0.003
(c) S=G/M	14.921	7.132	2.092	0.037
(d) S ²	-4.924	4.372	-1.126	0.261
(e) I•C	-29.423	9.204	-3.197	0.002
(f) I•S	-35.596	15.317	-2.324	0.021
(g) I•S ²	14.163	8.753	1.618	0.107
(h) C•S	-22.523	8.465	-2.661	0.008
(i) C•S ²	8.385	4.740	1.769	0.078
(j) I•C•S	54.697	20.051	2.728	0.007
(k) I•C•S ²	-22.201	10.651	-2.084	0.038
Number of Observations	347	Degrees of Freedom		320
R²	0.907	Std. Err. of Regression		0.637
Adjusted R²	0.899	Durbin-Watson Stat.		2.082

Table I.4: Inflation Effect of Credible Monetary Conservatism as Function of Bargaining Coordination and Sectoral-Structure

<i>Estimated Impact of 0.1 Increase in CBI</i>						
<i>S=G/M</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>
	<i>0.00</i>	<i>0.25</i>	<i>0.50</i>	<i>0.75</i>	<i>1.00</i>	<i>1.00</i>
<i>0.25</i>	-1.20	-0.88	-0.57	-0.25		0.07
<i>0.50</i>	-0.81	-0.62	-0.42	-0.23		-0.04
<i>0.75</i>	-0.55	-0.44	-0.34	-0.23		-0.12
<i>1.00</i>	-0.43	-0.37	-0.30	-0.24		-0.18
<i>1.25</i>	-0.45	-0.39	-0.33	-0.27		-0.20

Table I.5: Unemployment Effect of Credible Monetary Conservatism as Function of Bargaining Coordination and Sectoral-Structure

<i>Estimated Impact of 0.1 Increase in CBI</i>						
<i>S=G/M</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>	<i>CWB</i>
	<i>0.00</i>	<i>0.25</i>	<i>0.50</i>	<i>0.75</i>	<i>1.00</i>	<i>1.00</i>
<i>0.25</i>	1.23	0.80	0.37	-0.06		-0.48
<i>0.50</i>	0.61	0.42	0.22	0.03		-0.16
<i>0.75</i>	0.16	0.14	0.11	0.09		0.07
<i>1.00</i>	-0.11	-0.04	0.04	0.12		0.20
<i>1.25</i>	-0.21	-0.10	0.01	0.11		0.22

G. Empirical Implications:

1. European Monetary Union under conservative ECB...

- a. For all countries, shift to EU level \Rightarrow decline effective **CWB**.
- b. For each country, accompanied by different shift in **CBI** & Sectoral Structure.

2. Collapse of Corporatism/CWB

- a. Not quite universal. Where & insofar as CWB accompanied strong wage equalization, sowed seeds of own collapse in fostering public-sector employment growth

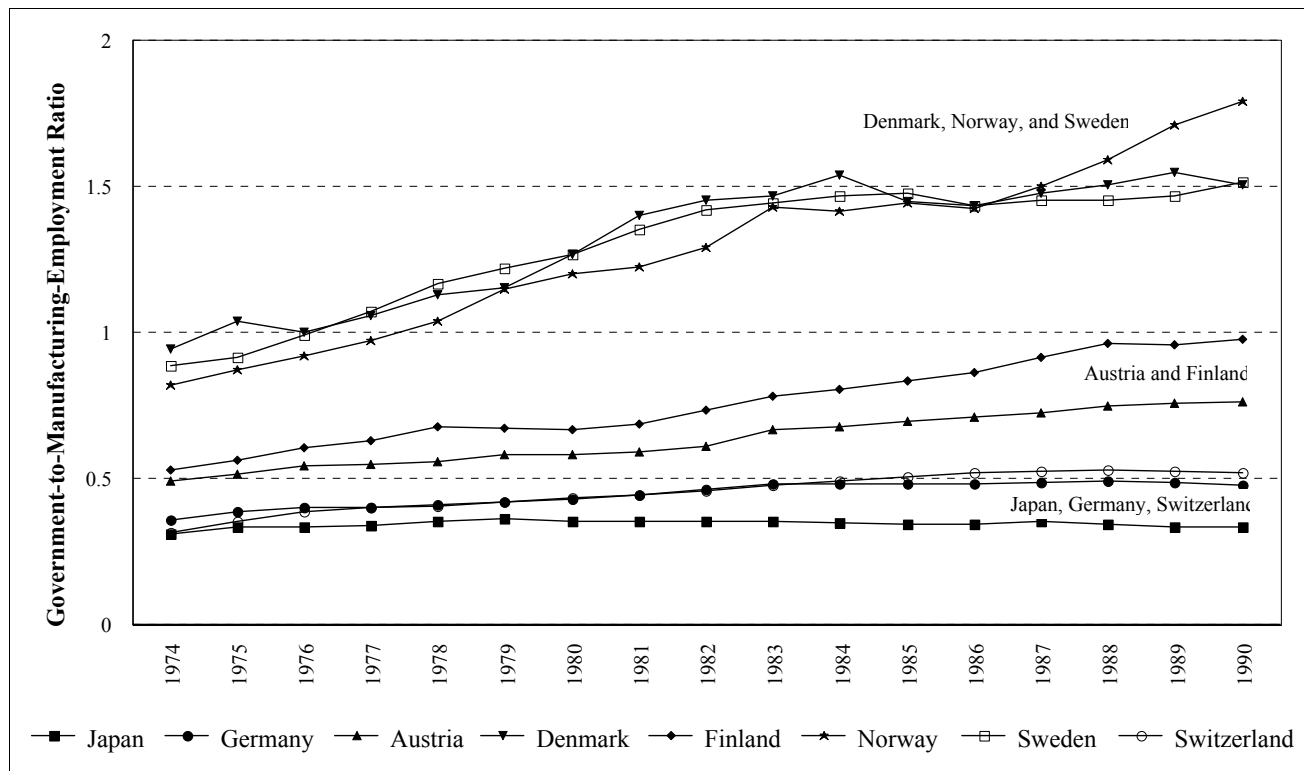


Figure I.8: Rising Public-to-Traded-Sector Dominance in Coordinated Economies

H. Political-Economic Implications

1. Main detrimental econ effect attrib'd pub-sect employ-grow is ↓ productivity grow (OLS+HAC, *decade*-frequency data, w/ or w/o time dummies or LDV, *etc.*

$$\Delta Y = \dots - 0.0125 \cdot G \dots$$

$$(0.0040) \quad \bar{R}^2 = .5854 ; s.e.e. = 0.1207 ; N = 84$$

2. Thus, 10% higher govt employ, see Fig I.10 for scale, induces $12.5 \pm \%$ lower productivity-growth (strictly, -12.5% GDP *per capita* growth) over a decade.
 - a. Ch. 3: slowed growth key impetus toward debt accumulation
 - b. Ch. 2: employ growth, which only productivity growth can reconcile with real-wage growth, essential for expanding social-insurance generosity not to produce massive rises in transfers and public spending.
 - c. Thus, while ↑ transfers spurred ↑ labor-market rigidity, limiting fiscal-policy efficacy, & debt growth increasingly constrained fiscal-policy maneuverability, public-employ growth dampened productivity & income growth, exacerbating both difficulties.

3. With fiscal policy increasingly ineffective & constrained by these developments, & by growing internationalization, govts turned toward monetary policy, once Bretton Woods collapse erased fixed-exchange requirements, to fulfill their commitments to macroeconomic management, & specifically to redress OPEC-triggered inflation of the seventies.
 - a. However, ↑ public employment also expanded constituency largely immune to international or even domestic competition and ill-disposed to provide wage-price restraint or to respond well to monetary threats intended to induce such.
 - b. Meanwhile, with the rest of the economy increasingly exposed to competition, govts' monetary efforts to restrain public-sector bargains created large real costs for aggregate economy, which fell especially heavily on expanding traded sector.
 - c. Helps explain why public-private cleavages have grown so prominent in developed democracies: large public-sector strikes in France, Italy, & elsewhere across the OECD; US govt shut-down/lock-out in winter-spring 1996 & several threatened since; similar troubles in Canada, especially Ontario, in 1995-96, etc.

4. Sum: in pub employ, as in transfers & pub debt, dem govts have tended become over-committed in public insurance, goods, & macro-management provision.
- a. Steady \uparrow payrolls, hinder not only productivity & employ grow, but also efficacy both wage-price bargaining institutions & monetary policy in regulate wage-price bargain.
 - b. In doing so, altered structure of interests in society, exacerbating pub.-priv. cleavages, and, in some cases, undermining what was a very successful system of institutions involving an autonomous and conservative central bank interacting with coordinated bargainers that have capabilities & incentives respond effectively to monetary policies.
 - c. Thus, as DD's turned from fiscal policies of KWS to new-orthodox monetary policies & institutional "reforms" in attempt rebuild broad postwar coalitions behind public management of macroeconomy, they hardly displaced familiar left-right battle lines.
 - (1) Hibbs' left-right partisan politics & dem govts' management Keynes-Phillips macroecon applies w/ little translation to modern *institutional-reform* & *supply-side* policy debates
 - (2) Hibbs' right/left were relatively skilled-workers-and-capitalists/unskilled-workers, who relatively dis/favor govt involvement in econ & relatively dislike UE less/more than INF.
 - (a) Same groups align on similarly opposing sides of debates over how & whether to restrain public employ, or to sustain coord barg, or to institutionalize the policy-shift toward monetary conservatism.
 - (b) Theory & evidence of this chapter show that, on each front, relatively unskilled have more to lose and less to gain on their sides of each debate & relatively skilled and capital-rich more to gain and less to lose on theirs (see also Boix 1998).