

# PS389/CICS301: Hibbs, *The American Political Economy*

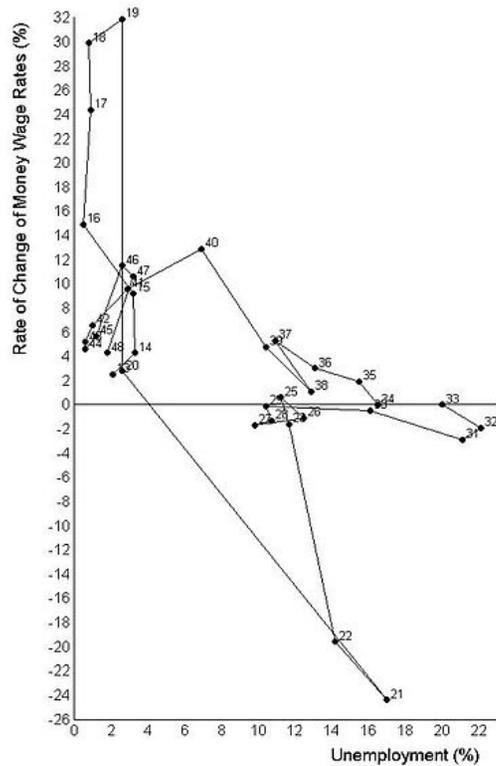
## I. (Intro) Motivation & Theme:

- A. “...avoidance of inflation & maintenance of full employment can be most usefully regarded as the conflicting class interests of bourgeoisie & proletariat...the conflict being resolvable only by test of relative political power in society & its resolution involving no reference to any overriding concept of social welfare” (H.G. Johnson)
  
- B. “This book deals with...connections b/w public opinion & electoral behavior, & macroeconomic policies & outcomes...macroeconomic policies & outcomes reflect intersections of both economic & political forces. This interdependence is usefully conceived in terms of demand for & supply of economic outcomes” (p. 1)

1. Perhaps no stable, long-run tradeoff INF v. UE (no std Phillips Curve), but achieve low UE (& high dY) & stabilize INF often conflicting goals:
2. “Faced w/ demand shifts, supply shocks, labor-cost push, & other inflationary events, political administrations repeatedly... forced to choose b/w accommodating inflationary pressures by pursuing expansive monetary & fiscal policies, thereby foregoing leverage on pace of price increases to preserve agg. demand & employ., & leaning against such pressures by tightening spending & supply of money & credit, thereby slowing inflation rate, at cost of higher UE & lower growth” (p. 2).

### C. *Main Themes:*

1. “...economic interests at stake during [booms & busts]...
2. ...ways...class-related political constituencies perceive their interests & respond in...polls & voting... to macroeconomic fluctuations...
3. & ways...econ. interests, pref.’s,& priorities of political constituencies transmit to macroecon. policies & outcomes observed under parties” (p2).

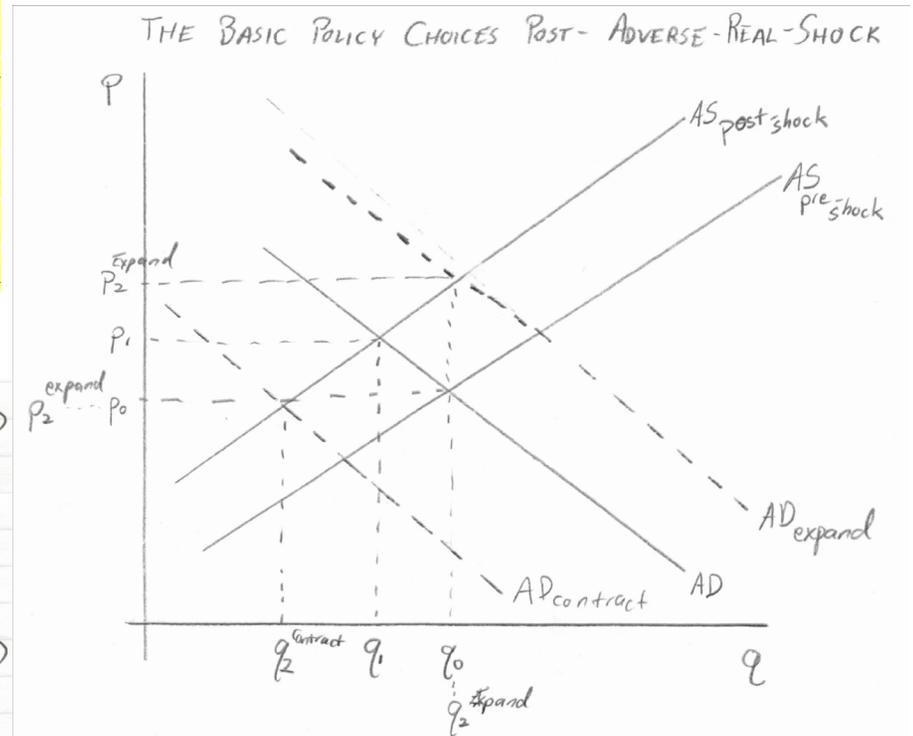
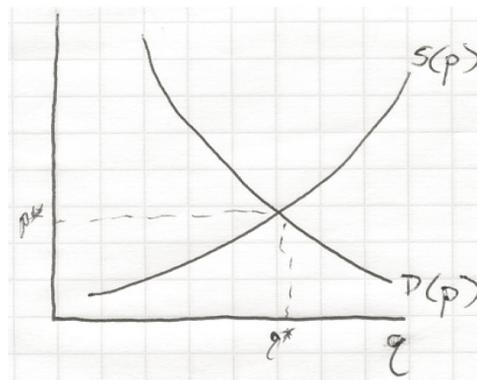
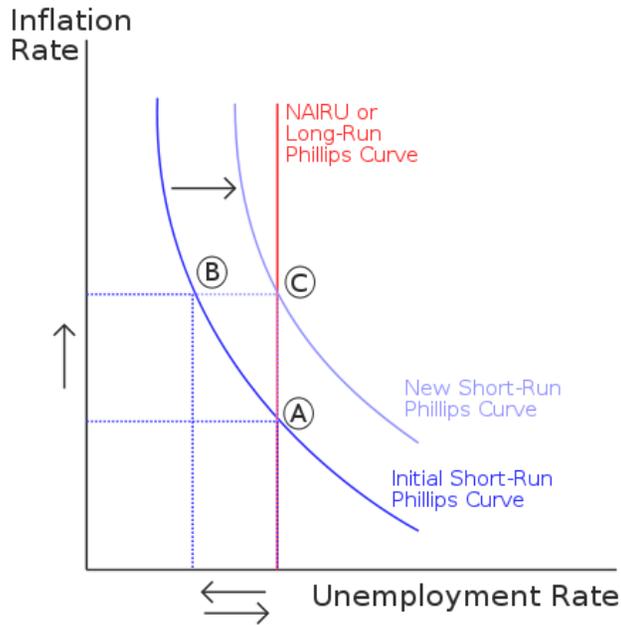


Original Phillips curve A.W Phillips (1958) *The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957* top-left.

Standard “Phillips Curve” referenced on preceding is like “Short-Run Curves” bottom-left, and just another instance of base law of economics, supply & demand, bot.-mid.

Idea of standard curve is that policymakers could spur aggregate demand by boosting public spending / cutting public taxes, i.e., increasing deficits: **fiscal stimulus**, and/or by increasing money supply = lowering interest-rates: i.e., **monetary expansion**, and achieve real benefit, here lower unemployment, at some nominal cost, higher inflation. Notice all just supply & demand: aggregate demand-management policy basically works as at bot.-rt.: expansionary / stimulatory (deflationary/contractionary) policy pushes demand curve right&up (left & down), w/ result that both real & nominal outcomes, quantity & prices, increase (decrease).

Later amendments noted that workers & firms would come to expect higher inflation if shift permanently to B, so same rate money grow not stimulatory any more; short-run curve shifts out so same real relations (output unemploy, etc.) hold as before, but now at C. Infl. & (un)employ not permanently tradeable; long-run curve is vertical. As Hibbs notes, though, even so, policy can affect short-run nominal/real tradeoffs.



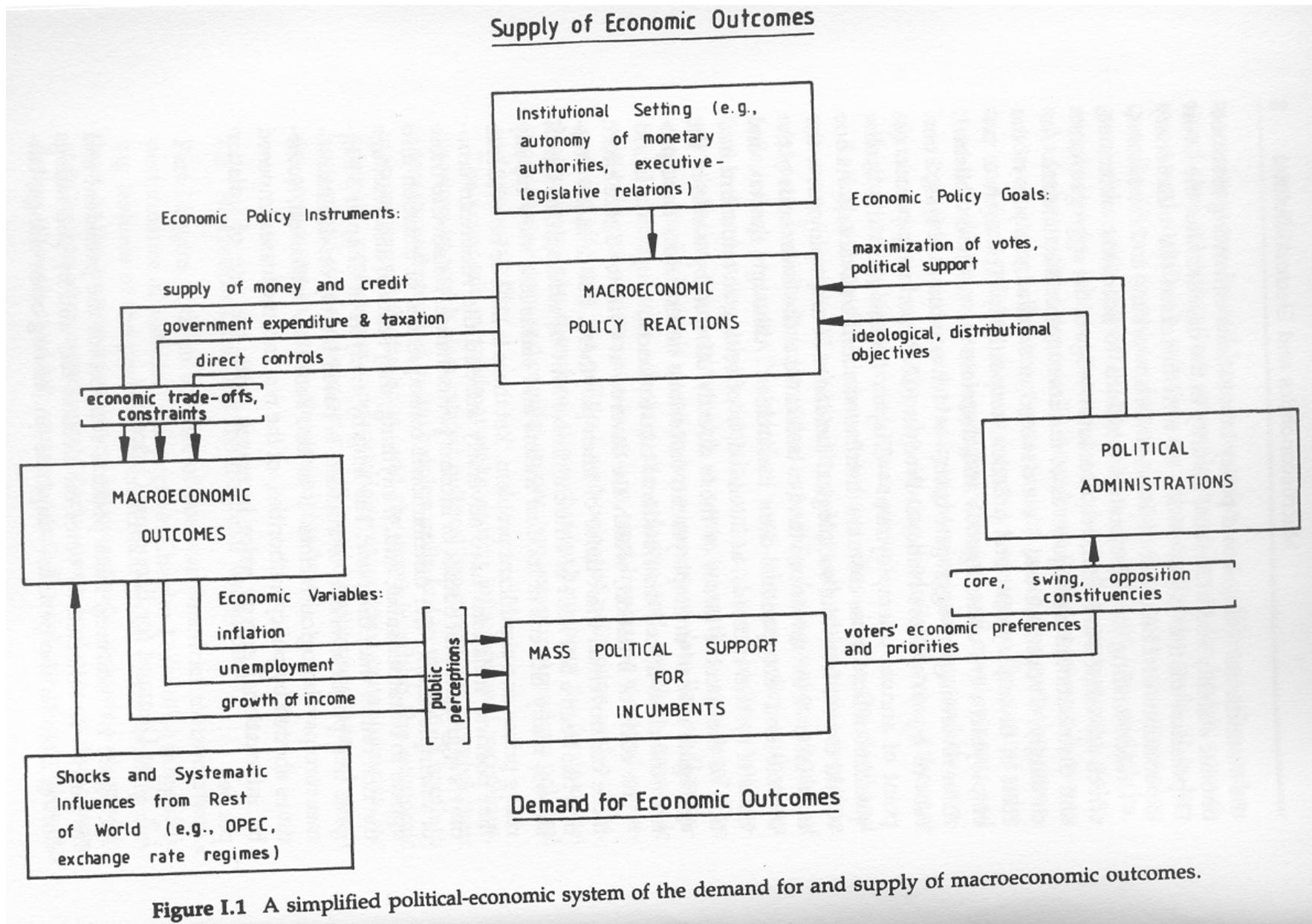
## II. Preview of the Book:

- A. Striking features postwar (thru mid-80s) US macroec. performance in historical perspective [using it also to intro thrys macroec. policy]
  1. Three notable features compared to prewar eras:
    - a. Comparatively high real growth (absolutely & *per capita*)
    - b. Comparatively stable macroeconomy: fluctuations quite muted
    - c. Near-continuous INF: price level rises steadily postwar; long-run flat before
  2. H stresses several important institutional & policy changes since Great Depression as underlying these changes:
    - a. Enhanced macroeconomic stability, & so growth, and individual security through *Keynesian- (demand-management) & Welfare- (saftey net) State*, and related important institutional changes (esp. deposit insure & ctrl-bank law)
    - b. But also  $\Rightarrow$  altered private-sector (firms', workers') expectations  $\Rightarrow$   $\uparrow$  INF expectations & inflationary pressure;
    - c. Monetary policy & institutional changes (off gold standard, then off Bretton Woods) allowed these pressures to produce sustained inflation.

3. Understanding electorate's reaction to these & other economic outcomes requires knowledge **outcomes' aggregate costs/benefits & distribution thereof, or at least perceptions of these costs/benefits & distribution.**
- a. **Costs of Unemployment (Ch.2):** Main losers from unemploy. & recessions [real-side economy] are those at low end occupational & income hierarchies; this only partly mitigated by tax-&-transfer (T&T) system [& less so now].
  - b. **Costs of Inflation (Ch. 3) [nominal side]:** [first we will have to be sure we know what it is...]
    - (1) little evidence that inflation (at least moderate) hurts aggregate, real output;
    - (2) distributional consequences also generally small compared to unemployment's;
    - (3) if anything, its distributional implications are noticeably notably adverse only for the very wealthy (being asset holders);
    - (4) ⇒ (Hibbs' conclusion) public's strong inflation aversion must stem largely from psychological factors &/or confusion b/w nominal inflation & relative (real) price moves, which confusion policymakers may abet.
  - c. **Public Concern about Inflation & Unemployment (Ch.4):**
    - (1) Follows objective conditions;
    - (2) Is differentially distributed across population, with left & lower ends socioeconomic hierarchies more UE rel. to Infl. than right & upper ends.

## B. Demand for & Supply of Economic Outcomes

1. See & ponder Figure I.1 (p. 4) [might start @ *macroeconomic outcomes*]



## 2. Some questions addressed regarding the “demand side”:

a. How does support for president & her party depend on current, past, & perhaps E(future) performance?

(1) Public response (polls & votes) reveals info about its priorities & relative pref's;

(2) and constitutes voter's demand for economic outcomes.

b. How relative concern over INF & UE varies across electoral groups: Dem's, blue collar, lower income more UE-averse, less infl-averse than Rep's, white collar, & higher income; **n.b., the key, relevant comparison is:**

$\left[ \frac{\text{UE Aversion}}{\text{INF Aversion}} \right]_i$  relative to  $\left[ \frac{\text{UE Aversion}}{\text{INF Aversion}} \right]_j$

c. Also addresses a set of very precise questions regarding electorate's reaction to economic outcomes:

(1) Rate at which past performance is discounted,

(2) wt on cumulative party performance relative to that of particular admin's & pres's,

(3) relative weights on unemployment & inflation.

3. Some questions addressed regarding the “supply side”:
- a. Policymakers seek to...
    - (1) ...maintain comfortable support level during term,
    - (2) ...maximize votes at election time,
    - (3) ...serve ideological & distributional goals of their core constituencies,
  - b. ...using monetary, fiscal, and other policies...
  - c. ...as constrained by institutions such as...
    - (1) ...central-bank autonomy,
    - (2) ...executive-legislative relations, federalism, etc.
    - (3) ...international trade, exchange-rate, & other economic relations & commitments,
  - d. ...and by economic reality & conditions such as...
    - (1) ...*e.g.*, the shape of the Phillips curve, *etc.*,
    - (2) ...international conditions, influences, and institutions:
      - (a) Trade openness,
      - (b) Capital mobility,
      - (c) Etc.

## C. Policy options, economic theory, & policy effectiveness:

1. **Four basic policy options:** monetary, fiscal, direct controls, rhetoric & persuasion. (3<sup>rd</sup> rarely used in dev'd dems; 4<sup>th</sup> often/always but prob'ly weak) Regardless which stress, must have theory how econ works (*i.e.*, how responds to these policies)⇒
2. **Monetarism:** most economists concur sustained INF cannot occur w/o money-supply expansion accompanying (still debate whether/how money is *only cause* INF and INF may occur for 'unsustained' periods w/o...).
  - a. **Monetarism version 1** (one to which Hibbs refers):
    - (1) Many economists skeptical discretionary tax & spending manipulations can influence real economy much w/o cooperative monetary policy. I.e., monetary policy is the powerful instrument; fiscal policy, not so much.
  - b. **Monetarism version 2** (a.k.a., classical (or extreme neoclassical) econ.):
    - (1) Some economists now seriously doubt whether even money has much if any effect on real economy; at least not beyond very short-run responses unexpected moves.  
⇒ So-called classical divide: nothing nominal, or at least certainly nothing expected & nominal, affects anything real & *v.v.*
  - c. **Either way**, monetarist views see Keynesian activist position that govt can & should stabilize economy at very least to rely heavily on supportive monetary.

### 3. Keynesianism:

- a. **Old Keynesianism:** large fiscal policy effect on real economy; monetary-policy primarily to provide liquidity (*i.e.*, keep money-supply growth at least sufficient for constant prices).
  - (1) Govt can & should work to stabilize economy by adjusting budgets counter-cyclically. (Larger) deficits, *i.e.*,  $\uparrow G \downarrow T$ , in busts; surplus (less deficits) in booms
  - (2) Little or no distinction between short run & long run; issue not much analyzed.
  - (3) Keynes famously: “In the long run, we’re all dead.”
- b. **New Keynesianism:** both fiscal & monetary policy can & do have sizable short-run impacts, but doubtful govt can do much about long-run conditions (except *via* public invest., esp. in edu. *etc.*). New-Keynesian-type results supported by economic models w/ following features:
  - (1) Nominal contracting/bargaining (“sticky” wages and/or prices) or other nominal rigidities: debate about how important these are, how short the short run, *etc.*
  - (2) Multiple non-competitive markets, *i.e.*, monopoly power: *e.g.* non-competitive labor & product markets. *Combo of 1 & 2 produces esp. effective policy.*
  - (3) Limited rationality of actors

4. **Neoclassical Economics** (some, imperfect, not full overlap neoconserv.)
- a. Ricardian Equivalence: debt, *if sustainable [define]*—& if everyone rational & foresighted it must be, actually—is virtually irrelevant. Merely shifts timing of revenue collection relative to expenditure, which, because...
  - b. ...Rational Expectations & Rational Intertemporal Optimization ⇒ foreseeable counter-cyclical policies are at best powerless & at worst counterproductive.
  - c. ⇒ some optimum level of govt activity (mostly public-goods production & public investment): policy should be fixed at those levels.
5. ⇒ **Modern political economists face formidable challenge: must be economists *and* political scientists.**
- a. Quite difficult to get very far relying on “economic consensus” b/c, if such ever existed, not much now. Although...
  - b. May be near consensus has (re)emerged around a neoclassical/neo-Keynesian synthesis: short-run effectiveness of demand-management policy, especially insofar as unforeseen, but “long-run neutrality” (real-nominal divide).
    - (1) (But how short/long is short/long run?)
  - c. I’ll offer here a suggested intro-level set of macroeconomic understandings that should help, or at least should suffice for our purposes.

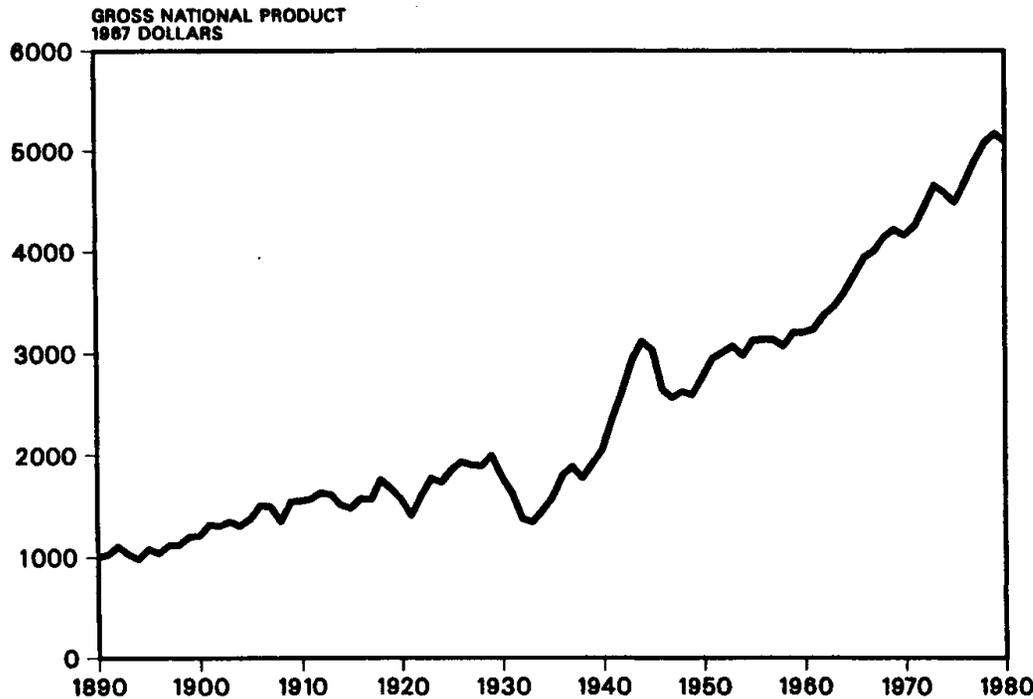
6. Working roughly in New Keynesian mode, one of H's core arguments:
- a. **Two central political influences on macroeconomic policy = partisanship & electoral incentives.** (As with Tufte, but with emphases reversed.)
    - (1) Dem's (left) seeks lower UE, higher  $dY$ , & will accept higher INF to get them.
    - (2) Rep's (right) seek lower INF & will accept higher UE & somewhat lower  $dY$ ...
    - (3) Also, Dem's will exhibit greater efforts at equalization & Rep's less.
  - b. [Recall: we should think "parties of left/right..." *Republicans & Democrats* are only US examples. This book is on US case, but hopefully its insights will have broader worth. (I'd say have proven to have; Clark may disagree.)]
  - c. Hibbs argues that partisan influences decidedly more potent, at least in US context (& elsewhere Hibbs has found this across democracies also), than electoral. [Clark would disagree.]
  - d. [Interesting Question: what might explain relative prominence of electoral (Tuftean) and partisan (Hibbsean) motivated policy in different contexts?]

### III. (Chapter 1) Postwar Macroeconomic Performance:

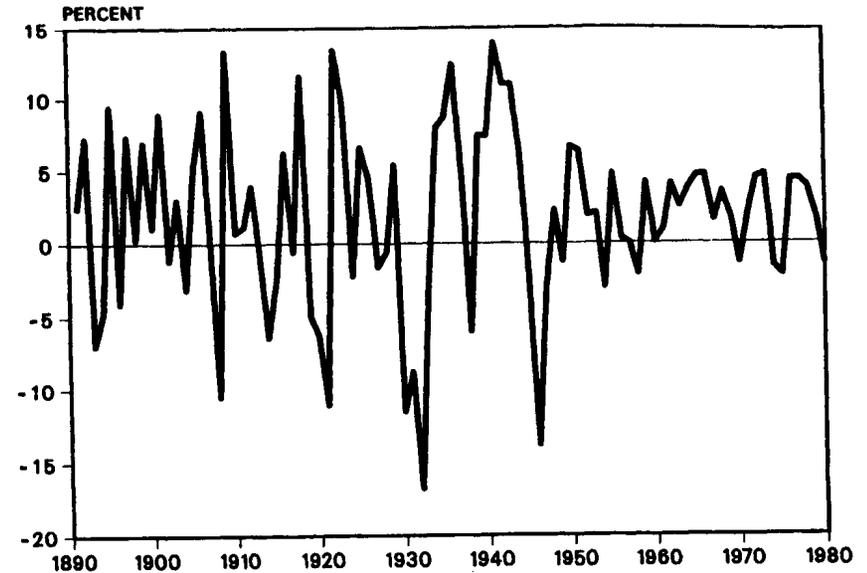
#### A. In Historical Perspective: Figures 1.1-1.6 tell the tale

##### 1. Figures 1.1 & 1.2: Real Growth

- a. Relatively greater postwar growth (Fig. 1.1)
- b. Relatively greater stability of postwar growth rates (Fig. 1.2 & Table)



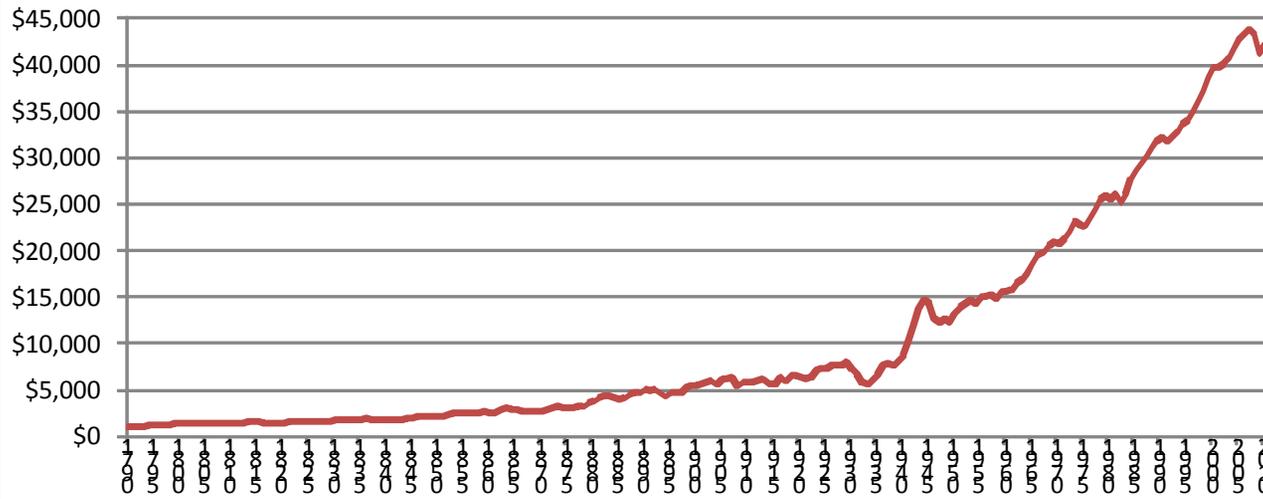
**Figure 1.1** Gross National Product per capita 1890–1980 (1967 dollars).  
Sources: U.S. Department of Commerce, *Historical Statistics of the United States, Colonial Times to 1970, Series F 1-5, 1971*; and TROLL-Citibank Economic Database, Series NBER-GNPP72.



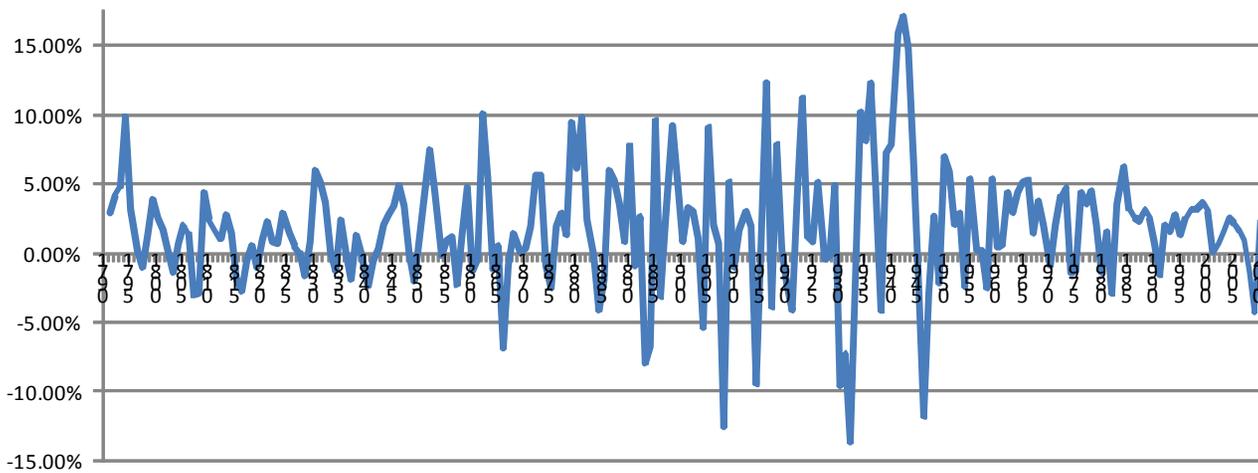
**Figure 1.2** Real output stability over time: real GNP per capita growth rates (percent per annum), 1891–1980. Sources: U.S. Department of Commerce, *Historical Statistics of the United States, Colonial Times to 1970, Series F 1-5, 1971*; and TROLL-Citibank Economic Database, Series NBER-GNPP72.

	1891–1929	1930–1949	1950–1980
Mean ( $\bar{x}$ )	1.78	1.32	2.17
Standard deviation ( $\sigma$ )	6.28	9.22	2.65
Coefficient of variation ( $\sigma/\bar{x}$ )	3.54	6.99	1.22

**U.S Real GDP per cap. (2005 \$)** (source: "Measuring Worth" website)



**U.S Real GDP per cap. Growth Rate** (source: "Measuring Worth" website)



These revised, and longer, series of data show:

\* Even lower, though less volatile 1790-1840 period (before Hibbs' data). Coeff of var still about twice the 1950-84 "Golden Age" though.

\* A higher average & less volatile next 50 yrs, 1840-90 (before H's data), but still .25 %pts. slower & about 33% more volatile than Golden Age.

\* About .4 %pts slower & .8 %pts less volatile 1890-1929 period than in Hibbs' data, but even larger c.v., & still way worse than G.A.

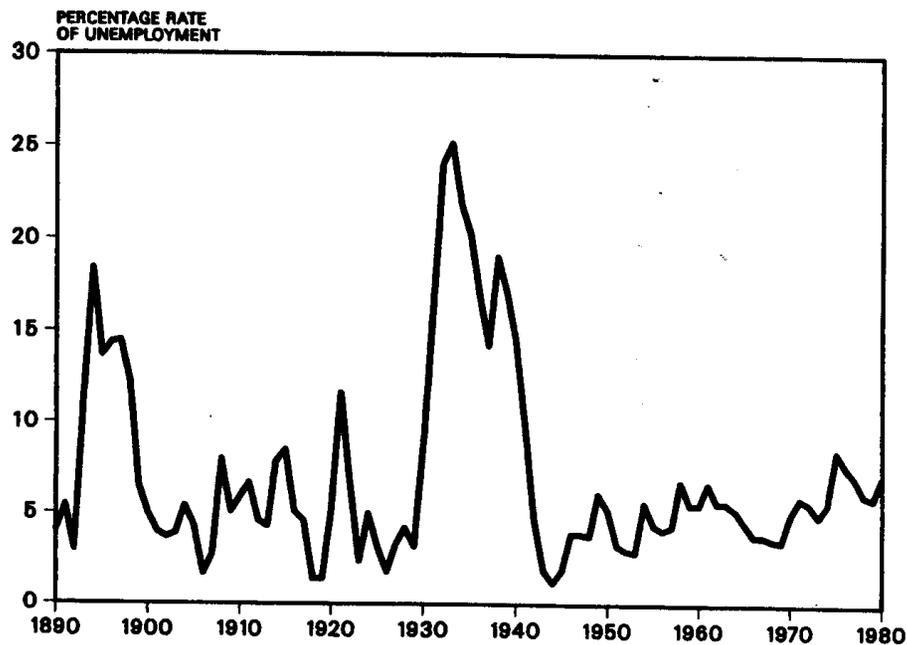
\* 1.3 %pts faster avg growth 1930-49, & now seen as fastest period, but even more tremendously volatile. (Big revision of mid-WWII years' growth.)

\* G.A. .21 %pts faster, .11 %pts more volatile, still easily & obv'ly best era. \* Last 25yrs, much slower, even more stable, for about same c.v.

	1790-1840	1841-1890	1891-1929	1930-1949	1950-1984	1985-2010
<b>Mean</b>	1.20%	2.11%	1.33%	2.60%	2.38%	1.63%
<b>Std Dev</b>	2.50%	3.59%	5.48%	9.32%	2.76%	1.79%
<b>Coeff Var</b>	2.08	1.70	4.11	3.59	1.16	1.10

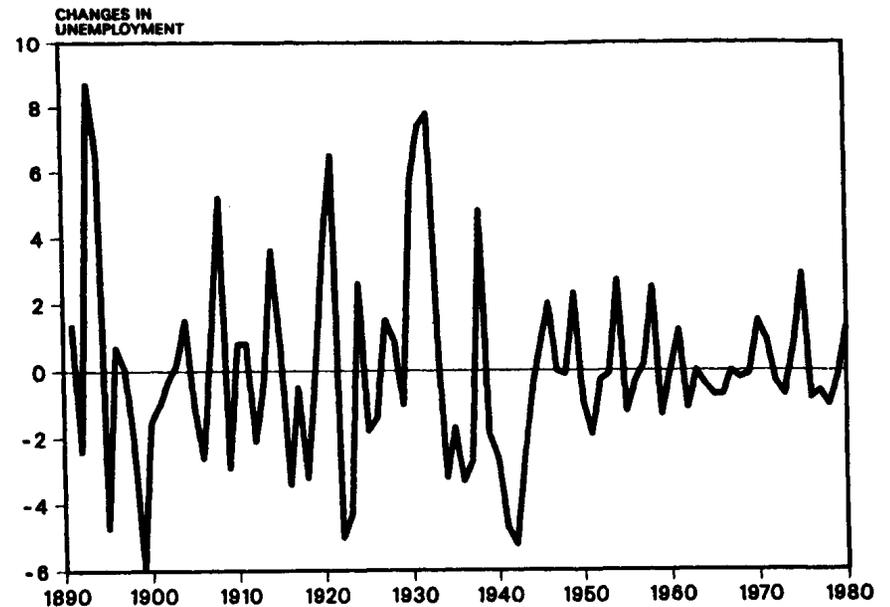
## 2. Figures 1.3 & 1.4: Unemployment

- a. Postwar UE is lower than pre-depression, but not dramatically (Fig. 1.3)
- b. Postwar stability: UE dramatically more stable (Table in F1.3; Fig. 1.4)



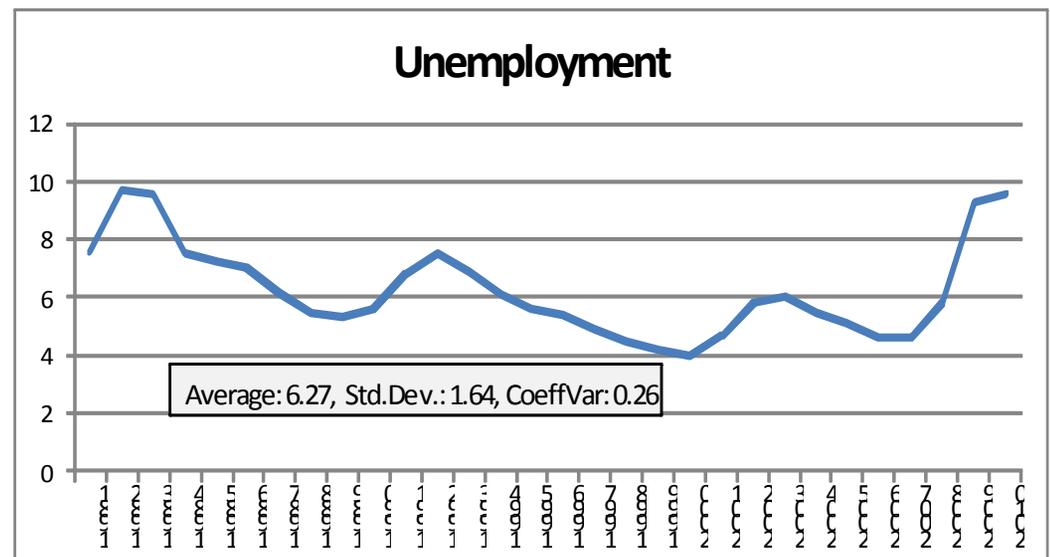
**Figure 1.3** The unemployment rate, 1890–1980. Sources: U.S. Department of Commerce, *Historical Statistics of the United States, Colonial Times to 1970*, Series D 1-10, 1971; and TROLL-Citibank Economic Database, Series NBER12-LHUR.

	1890–1929	1930–1949	1950–1980
Mean ( $\bar{x}$ )	6.12	11.81	5.23
Standard deviation ( $\sigma$ )	4.07	8.10	1.39
Coefficient of variation ( $\sigma/\bar{x}$ )	0.66	0.69	0.27



**Figure 1.4** Year-to-year changes in the unemployment rate, 1891–1980. Note: Standard deviation ( $\sigma$ ) for 1891–1929 is 3.24; 1930–1949, 3.85; 1950–1980, 1.18.

1981–2010 experience below: Avg back to prewar (even slightly higher); volatility still much lower.



### 3. Figures 1.5 & 1.6: Inflation

- a. Postwar steady  $\uparrow$  price-level in sharp contrast to flat prices Civil to WWI: prices stable in peace, rise in war, & return, but bit higher, true well b4 Civil War insofar as known (Fig 1.5).
- b. Postwar greater INF-rate stability not as obv. from fig's but there (F & T 1.6)

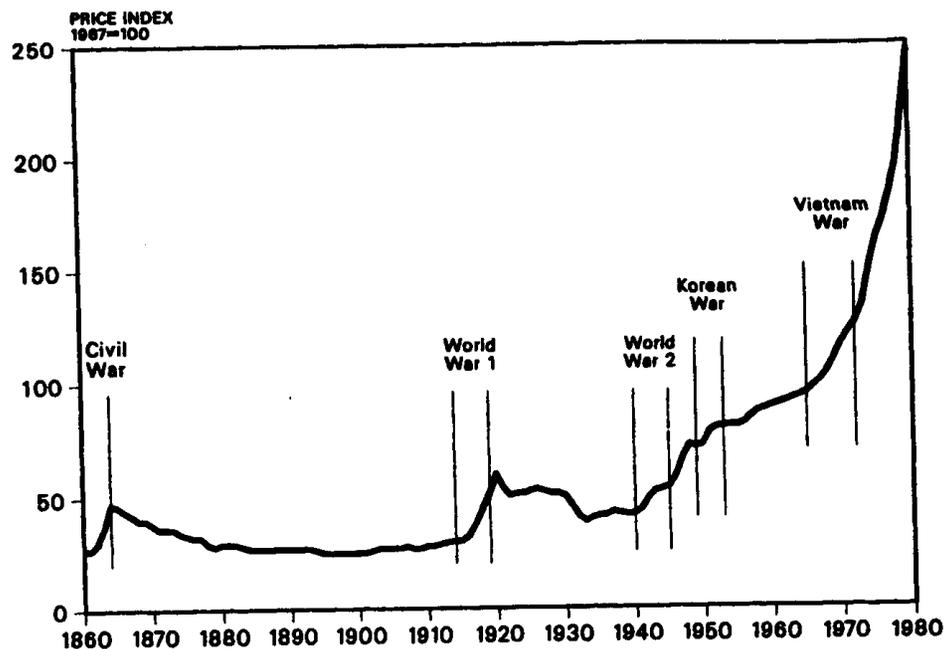


Figure 1.5 The Consumer Price Index, 1860-1980. Sources: U.S. Department of Labor, *Handbook of Labor Statistics*, 1978, Table 116; and TROLL-Citibank Economic Database, Series NBER12-PU.

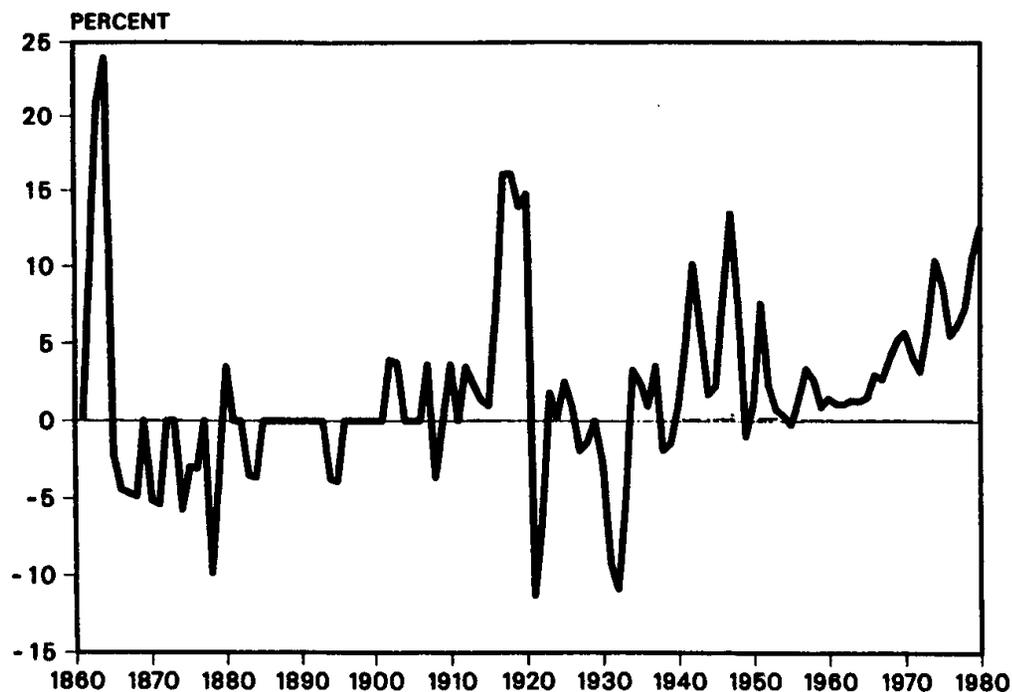
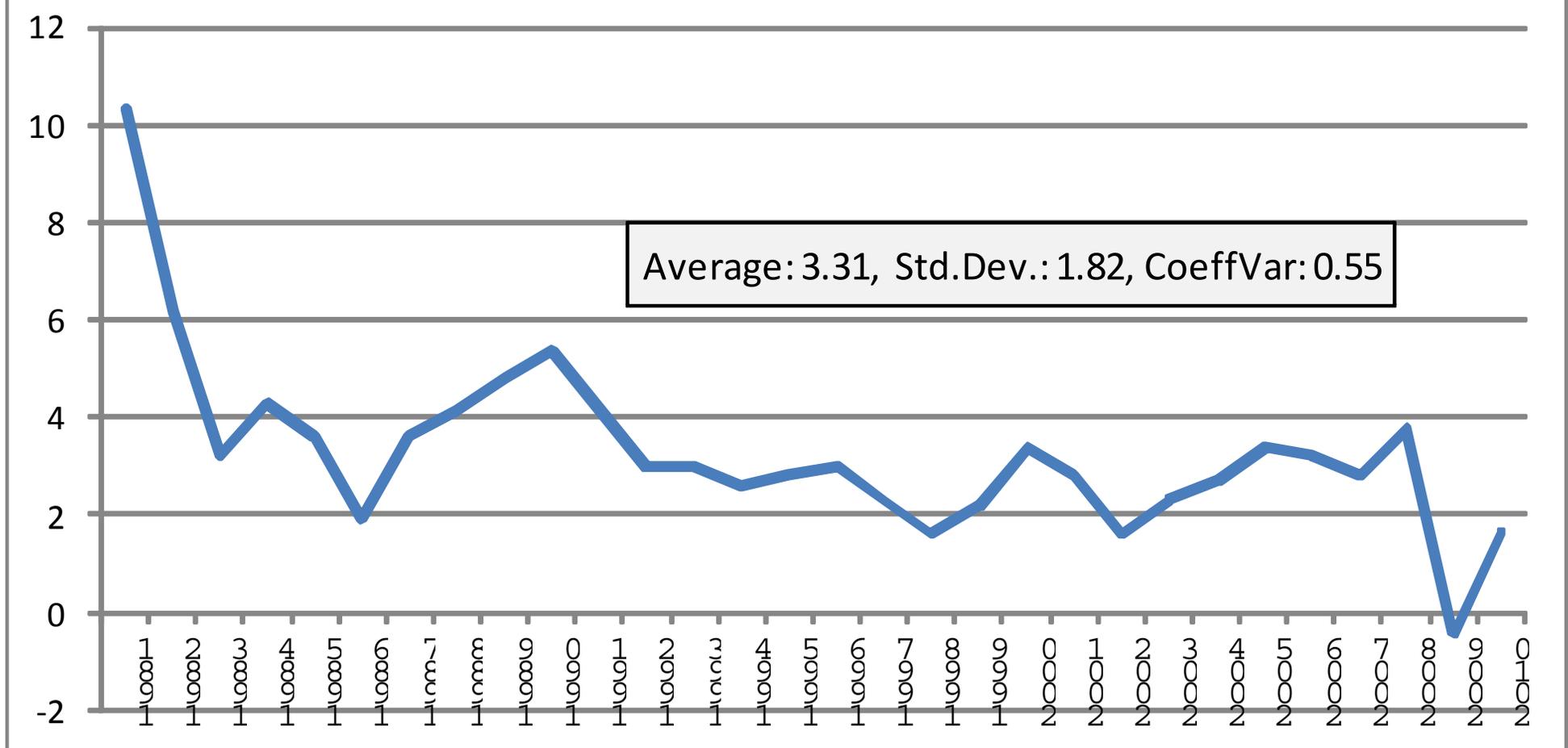


Figure 1.6 Consumer price inflation and deflation, annual rates, 1861-1980.

	1861-1929	1930-1949	1950-1980
Mean ( $\bar{x}$ )	0.93	1.65	4.00
Standard deviation ( $\sigma$ )	6.27	6.04	3.39
Coefficient of variation ( $\sigma/\bar{x}$ )	6.74	3.66	0.85

# CPI Inflation Rate, 1981-2010



After the Golden Age, inflation continued general decline and, by 1992 (end of Bush the Elder's term), seemed to stabilize at around 3.25%, with very low volatility (...until the recent financial collapse, that is...).

## B. In International Perspective:

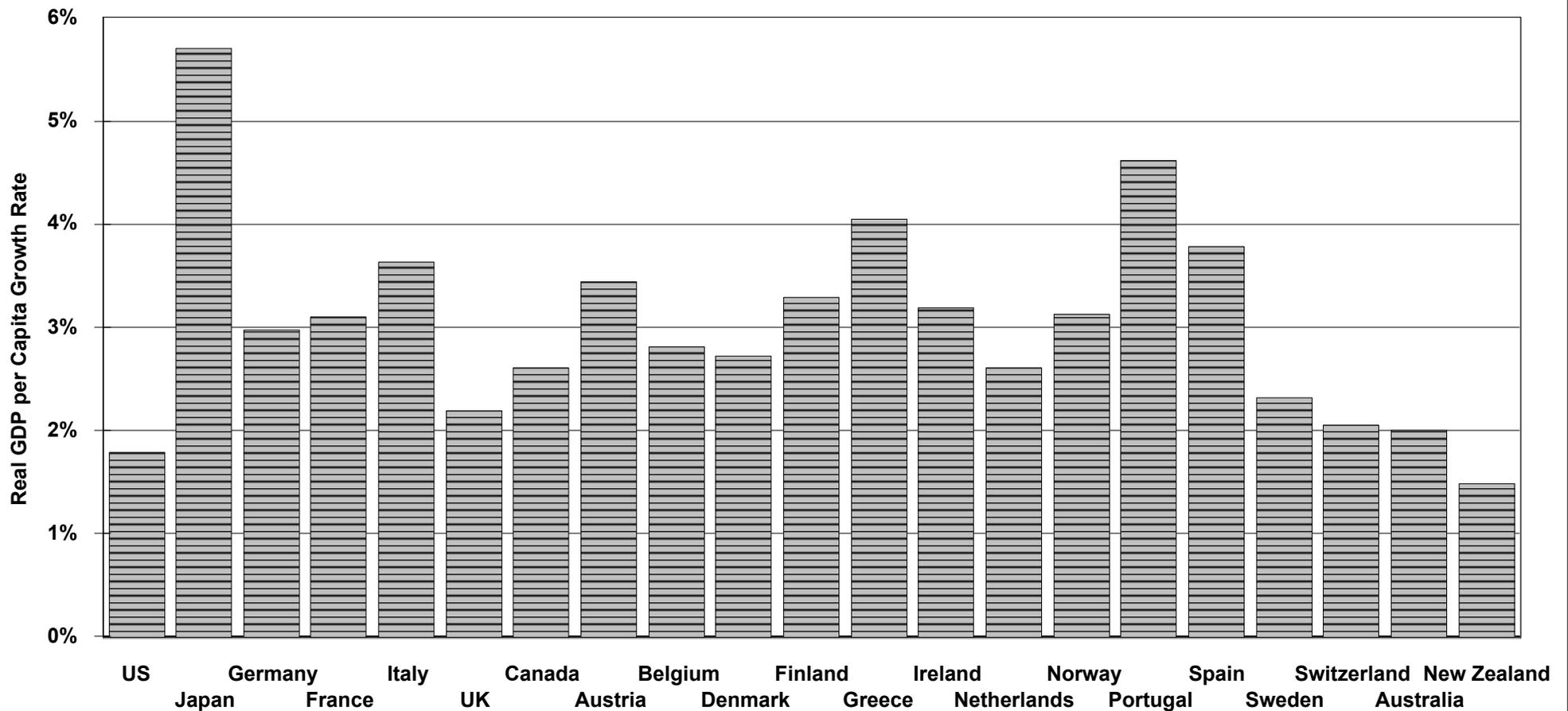
1. Little of US postwar experience unique. Growth & stability for Golden-Age gen'ly greatly higher than last half 19<sup>th</sup>C (also though last 25 years gen'ly both slower growth, & many w/ higher coeff.var. too) ⇒ Are H's arguments persuasive considering that effects to explain are not U.S.-unique? Are explanators stressed general enough to account these similar

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e l s e -  
w h e r e ?

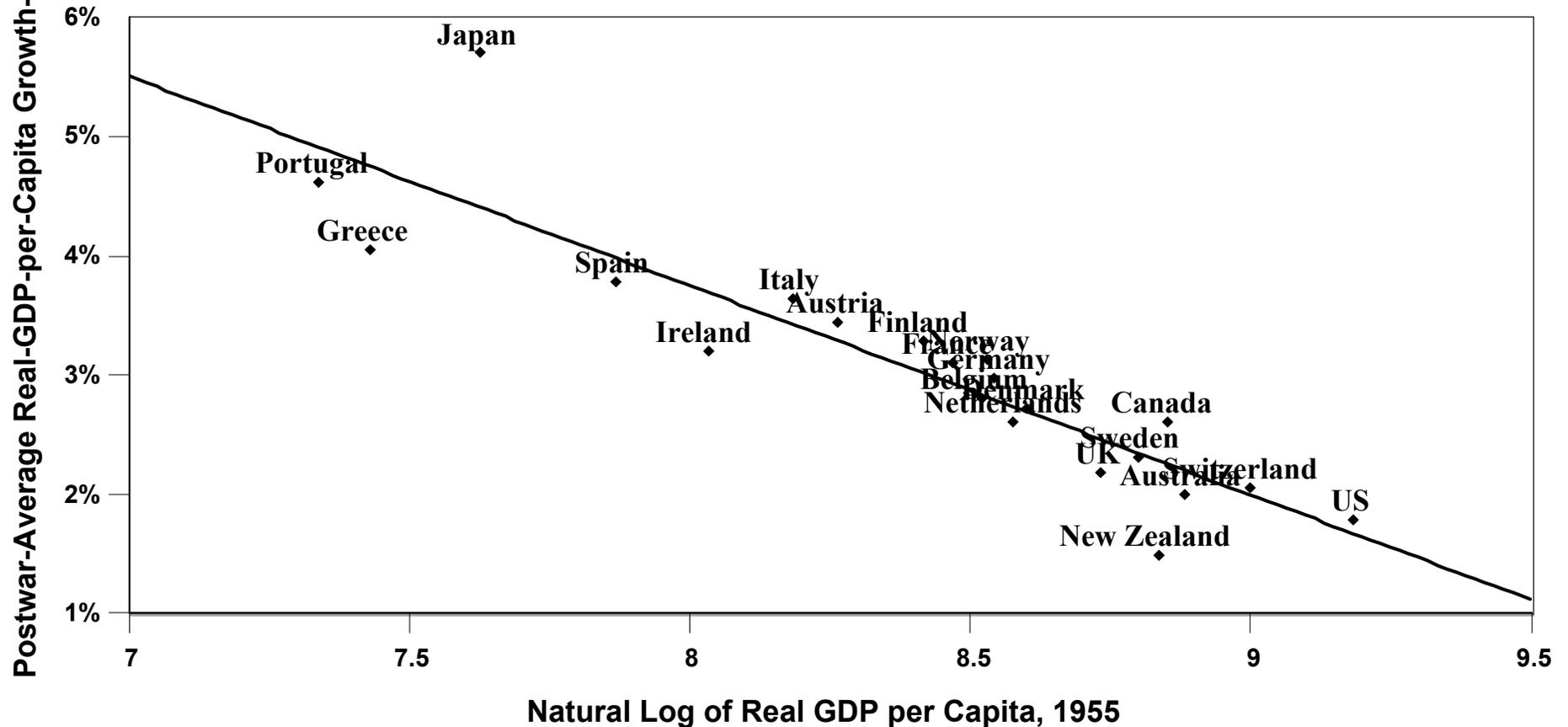
	Australia		Austria		Belgium		Canada		Denmark			
	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009		
<b>Avg.</b>	2.21%	2.31%	4.00%	1.89%	3.04%	1.87%	2.37%	1.57%	2.78%	1.51%		
<b>Std.Dev.</b>	3.12%	1.47%	2.92%	1.69%	2.37%	1.91%	2.52%	2.09%	2.85%	2.33%		
<b>C. of V.</b>	1.41	0.64	0.73	0.90	0.78	1.02	1.07	1.33	1.02	1.54		
	Finland		France		Germany		Greece		Ireland			
	1951-84	1985-2009	1951-84	1985-2009	1971-84	1985-2009	1952-84	1985-2009	1951-84	1985-2009		
<b>Avg.</b>	3.69%	1.82%	3.37%	1.40%	2.26%	1.56%	4.26%	2.00%	2.65%	3.63%		
<b>Std.Dev.</b>	3.14%	4.06%	1.98%	1.61%	2.01%	1.87%	4.36%	2.38%	2.99%	4.57%		
<b>C. of V.</b>	0.85	2.23	0.59	1.15	0.89	1.20	1.02	1.19	1.13	1.26		
	Italy		Japan		Netherlands		New Zealand		Norway			
	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009		
<b>Avg.</b>	4.10%	1.19%	5.98%	1.54%	2.68%	2.10%	1.62%	1.53%	3.31%	2.29%		
<b>Std.Dev.</b>	2.48%	2.16%	3.64%	2.50%	3.10%	1.56%	4.16%	1.86%	1.63%	1.95%		
<b>C. of V.</b>	0.61	1.82	0.61	1.63	1.16	0.74	2.57	1.22	0.49	0.85		
	Portugal		Spain		Sweden		Switzerland		United Kingdom		United States	
	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009	1951-84	1985-2009
<b>Avg.</b>	4.33%	2.59%	4.38%	2.30%	2.48%	1.65%	2.43%	1.08%	2.01%	2.03%	2.22%	1.64%
<b>Std.Dev.</b>	4.58%	2.93%	4.63%	2.25%	1.65%	2.41%	3.33%	1.76%	1.79%	2.20%	2.80%	2.01%
<b>C. of V.</b>	1.06	1.13	1.06	0.98	0.67	1.47	1.37	1.63	0.89	1.09	1.26	1.23

By the way, from a section of the introductory notes to which we never got...here are the real GDP per capita growth rates for the 1955-1990 period, and then a set of possible explanations...

**Aggregate Economic Performance of Developed Democracies in the Postwar Period**



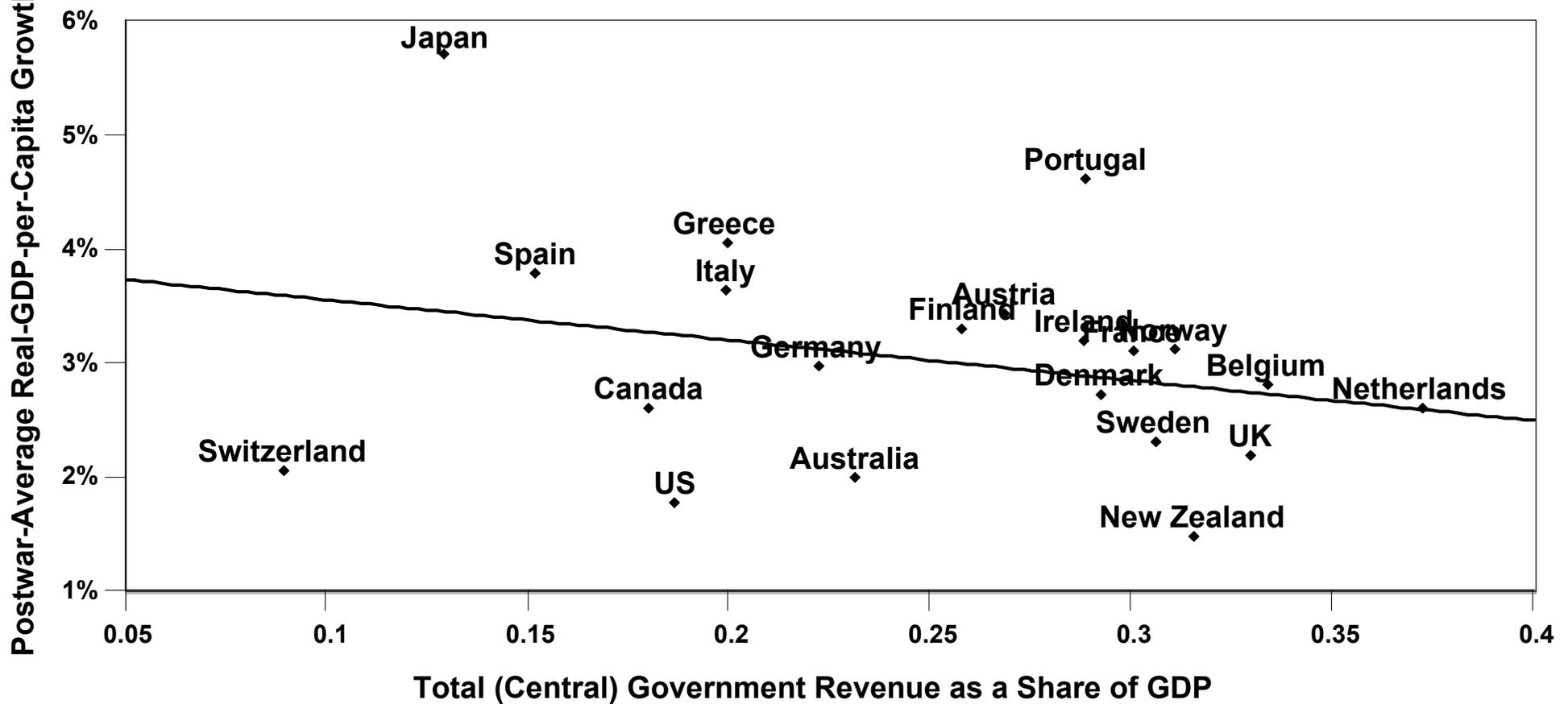
## The "Catch-Up" Hypothesis



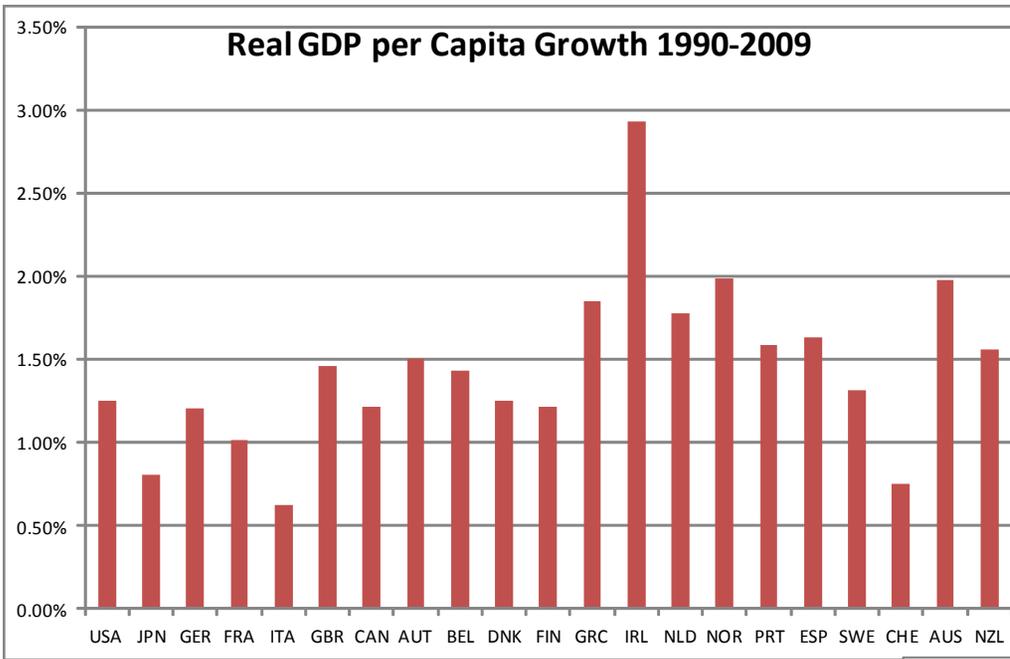
Correlation = 0.90 # pts = 21  
 $y = 0.178 + -0.0176x$   
 (0.0019)

Much of the differences across countries in growth rates accounted simply by the classical growth model and its catch-up or convergence hypothesis: at lower GDP/cap, also lower Capital/person, return on investment higher, so more investment & more growth in previously poorer countries...

# The "Small Government" Hypothesis



Might have seen also some, modest, empirical support for the small-government hypothesis in this Golden Age...

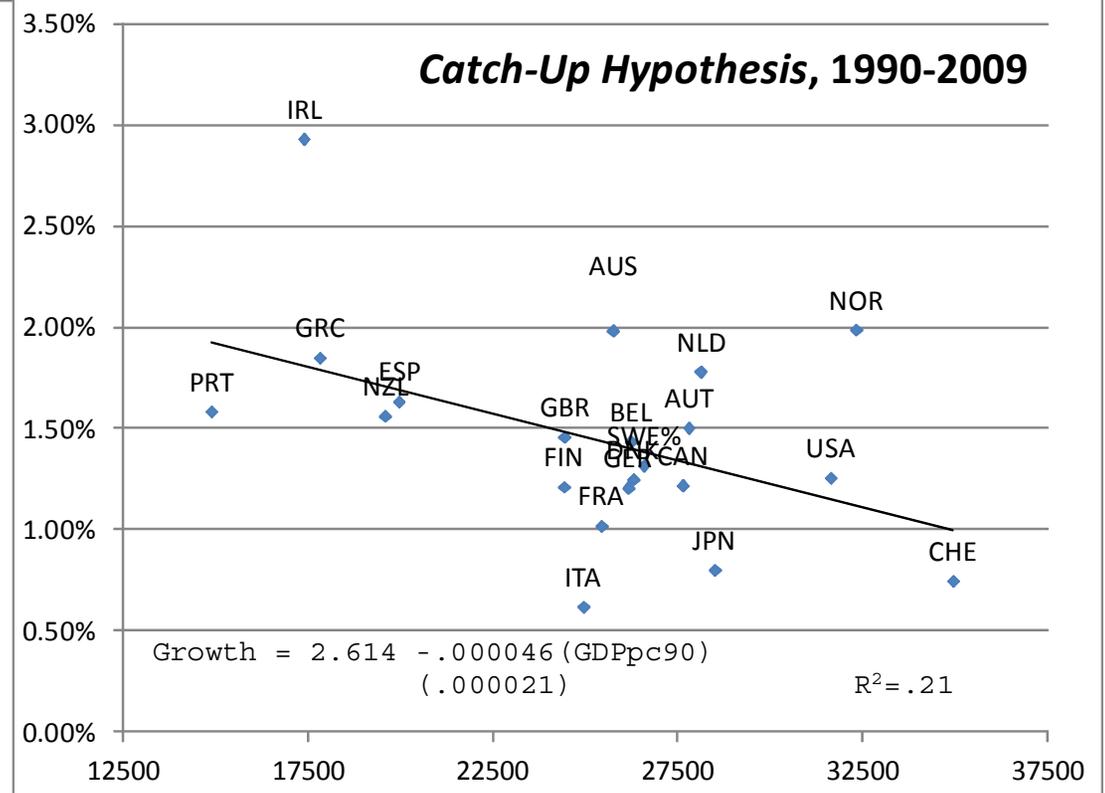
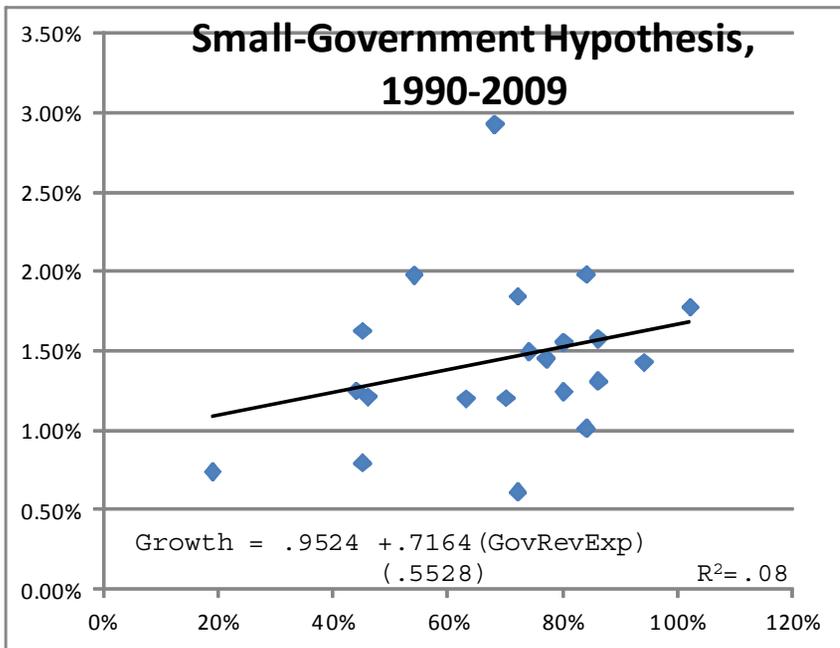


Underscoring the dangers of focusing on any specific period: the relative performances change radically comparing those first 35 years to the last 20.

Most notable thing, though, is how much slower growth has been across board since “Golden Age”.

The “catch-up hypothesis” (a.k.a., neoclassical growth model) still has some of the explanation, but it’s a lot less strong than before.

Small-gov’t hypothesis doesn’t fare well at all...



C. Returning to Hibbs' analysis underscoring the 3 striking features of postwar Golden Age to prewar eras, some interesting notes about these comparisons:

1. The postwar Golden Age saw historically high regulation, controls, cyclical intervention, taxes, & spending. It also saw historically high growth & stability though continuous inflation.
2. The decade of *stagflation* in early/mid-70s into 80s may have bolstered those calling for reversing trend of rising govt intervention. Era's worst recession, Volker/Reagan deflation of '82, slammed INF to halt, but at big macroeconomic cost (much debate on how avoidable).
  - a. [Notice, referring back to our previous basic-macroecon pedagogical slide how simple & broadly accurate Hibbs' AD-AS based explanation would be...]

D. How does Hibbs explain these prominent facts? [Again, the 3 striking differences of postwar Golden Age compared to prewar eras...]

## IV. Some background macroeconomics, a brief first introduction:

A.  $MV \equiv PQ$  (money supply times velocity of monetary exchange equals price level times quantity of output)

1. Just an accounting identity: true by definition...

a. ...even though sometimes called “Quantity *Theory* of Money”

2. Economic theory enters when deciding what endogenous & what exogenous; *for example*:

a. Strict Friedman-esque monetarism & classical quantity *theory* of money:

(1)  $Q$  &  $V$  exogenous (set, or fixed, by outside factors)  $\Rightarrow (dM)V = (dP)Q$ .

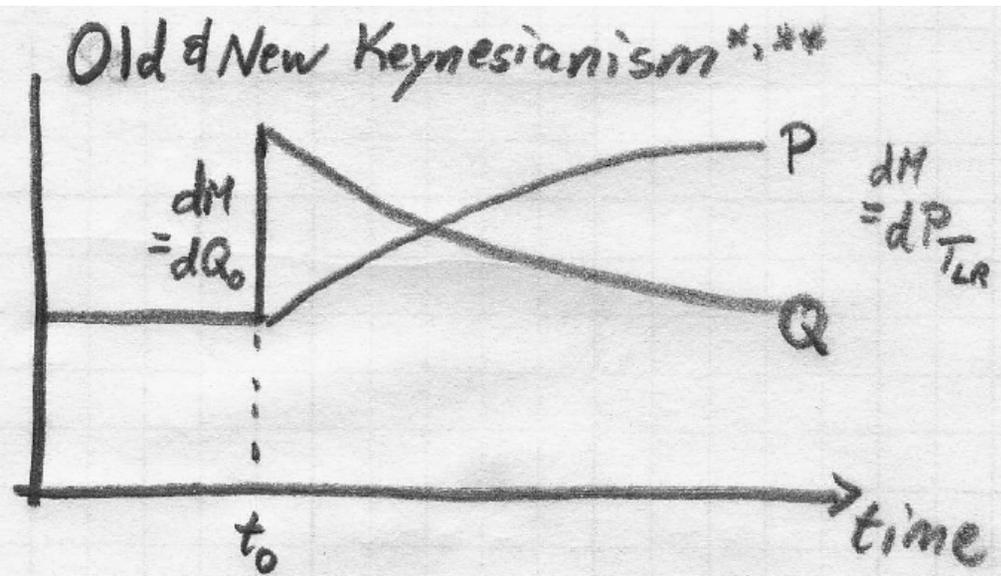
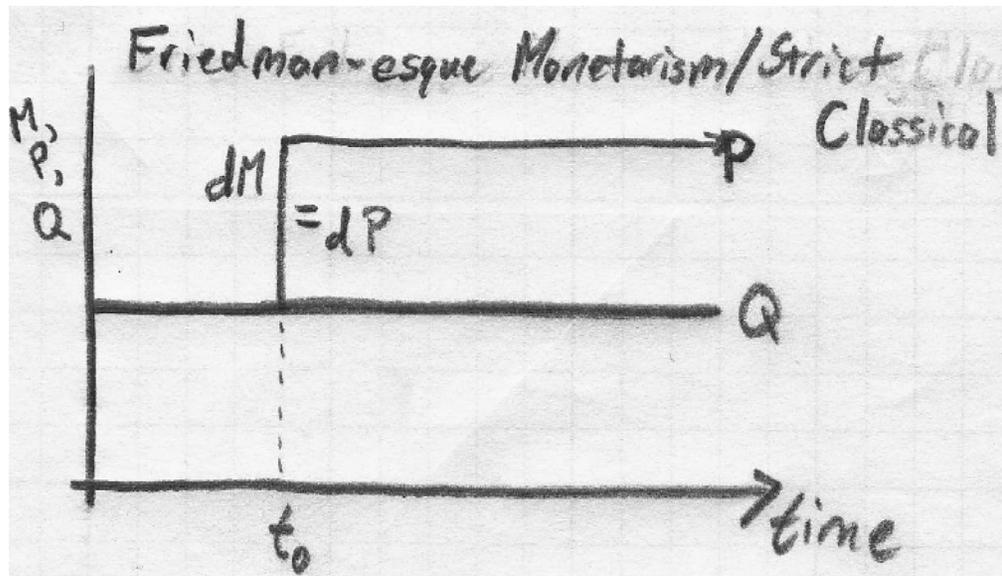
(2) Money growth = price growth, end of story; complete separation nominal from real.

b. Old & New Keynesian (& some neoclassical, via diff. mech'isms than neoK):

(1)  $V$  exogenous,  $P$  adjusts slowly  $\Rightarrow (dM)V = (dP)Q + P(dQ)$ .

(2) Money growth initially induces real growth, prices adjust slowly to absorb money. Long-run real-nominal divide, but short-run efficacy monetary policy.

c. [Can draw simple diagram to illustrate.]



\* Difference Old & New = basically how long/short the short/long run

\*\* Much New/Neoclassical may be similar, but via diff. mechanisms & different stances on long/short. runs.

$$B. Y \equiv C + I + (G-T) + (X-M)$$

(aggregate demand=consumption+investment+net govt spend+net exports)

1. This also an identity (it is an accounting identity; it is *not* “the Keynesian theory”): it also true by definition
  - a. Left-hand side (LHS),  $Y$ =total income in the economy;
  - b. Right-hand side (RHS) = all the different categories in which income may be expended: as defined, categories are exhaustive and exclusive: thus an *identity*
2. Theory enters in how/if **AD** equated to **AS** & thereby income determined; one key in this is what decide regarding incurrence of deficits, i.e., debt accumulation,  $(G-T)>0$ , or surpluses, i.e., public-asset accum.,  $(G-T)<0$ .
  - a. **Strict Neoclassical**: Supply,  $Y^s$ , exogenous to these factors  $\Rightarrow$  altering  $G-T$  only adjusts temporal allocation of government-revenue collection.  $C$  &  $I$ , & maybe  $X-M$ , adjust to counter  $G-T$  movements, leaving real econ unaffected. The exogenous supply is fully determinant:  $Y$ =some set  $Y^s$ ; policy irrelevant.
  - b. **New Keynesian**: for any or all of various reasons,  $G-T$  only partially offset by adjusts other variables, esp. in short run  $\Rightarrow$  supply,  $Y^s$ , endog.: policy effective.

## V. Longer intro, & Hibbs' explanation for 3 big facts of postwar macroeconomic experience [Again, these are...]:

### A. Three striking facts about postwar compared to prewar econ history:

#### 1. *Postwar:*

- a. High & sustained real income growth;
- b. Relatively stable macroeconomy (& higher individual security);
- c. Sustained inflation.

#### 2. *Prewar:*

- a. Growth averaged lower;
- b. Economy far more unstable, w/ far more severe depressions & more erratic boom-bust cycle; individual insecurity tremendously greater;
- c. & prices almost perfectly stable long-run (inflation & deflation averaged quite nearly zero over decades).

#### 3. All these strikingly different, recall Figs 1.1-1.6, why? *[At least, all were diff as of 25yrs ago. 2 deep recessions (early 80s, & '08/'09-), & 2 modest booms (late 80s; mid-90s-to-late-00s), w/ smaller recession b/w, & political-economic responses to these, may have changed things...]*

## B. A first important macroeconomic identity:

### 1. $MV \equiv PQ$

#### a. *Accounting identity:*

- (1) Amount of money in circulation times velocity with which it circulates through economy = price level of goods times quantity of goods (produced &) exchanged.
- (2) Essentially, with this definition of  $V$ , the identity must hold by pure accounting.

#### b. Becomes theory (e.g., *quantity theory of money*) when we add assumptions about which elements in equation are exogenous (given outside the equation, i.e., model) & which endogenous (caused within the equation, i.e., the model) and how these endogenous variables are determined.

#### c. [Can show simple diagram that illustrates (down 3 slides)...]

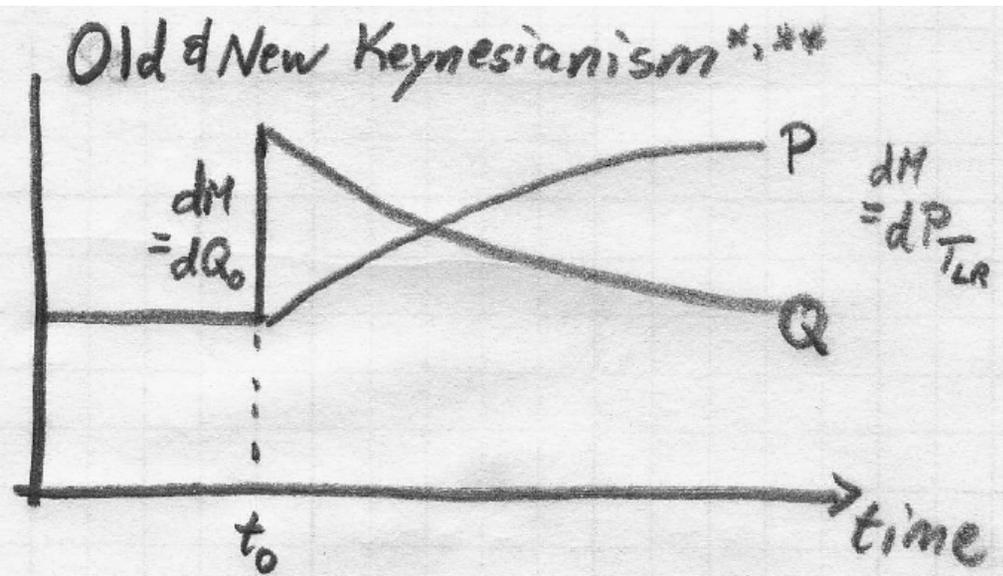
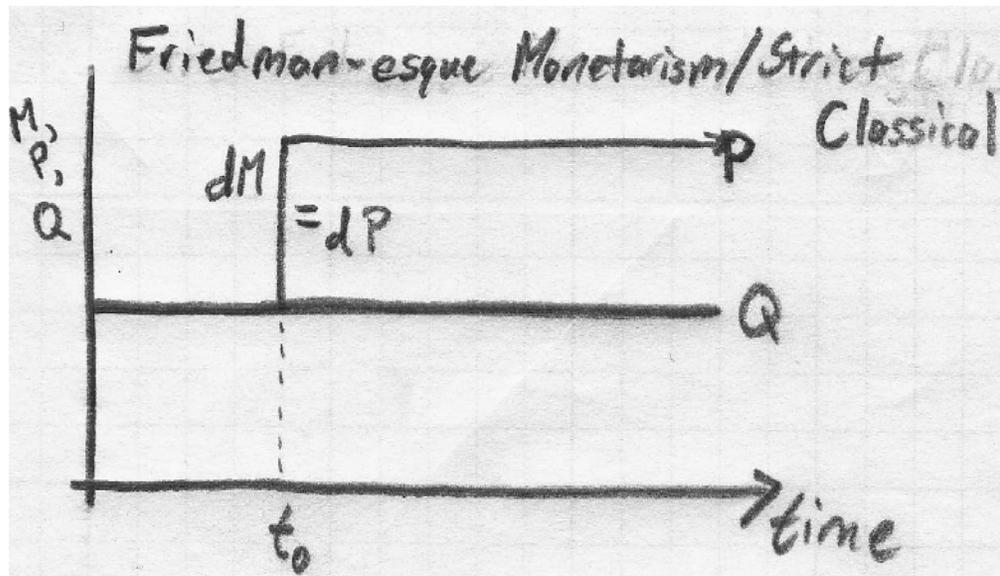
2. **New monetarism or new classical theory** (strict version) argues that
- a. **Velocity (V) determined by outside technology.** Financial-technical changes (ATM's, checking accounts, credit cards, internet banking, 24/7 worldwide...)
  - b. **Real quantity of output (Q) also determined outside the system by real factors** like existent labor-supply & capital, people's relative preferences for labor & leisure, people's 'time-preference' (how patient in waiting for the returns to investment & how much they favor spending today over tomorrow), *etc.*
  - c. **With V & Q exogenous, i.e., fixed with respect to the moveable, endogenous, parts (like policy), the growth rate of the money supply directly & fully determines the growth of prices (inflation)  $\Rightarrow (dM)V = (dP)Q$ .**
  - d. From this standpoint, **nothing nominal (money, prices) affects anything real (velocity, quantity); this is the so-called *classical* or *real-nominal divide*.**
  - e. **Money determines inflation; real economy exogenously given; end of story.**
  - f. [Can show simple diagram that illustrates (down 2 slides)...]

### 3. **Old Keynesianism [& Monetarism I, where \$ super-potent]**, contrarily,

- a. Less sanguine re: quickness prices & wages (P) adjust to monetary moves.
- b. Agree that velocity is rather exogenous, but prices do not necessarily adjust smoothly & quickly to monetary changes, so  $\Rightarrow (dM)V = (dP)Q + P(dQ)$
- c.  $\Rightarrow$  money growth partly met by price & partly by quantity increases (INF & real dY). So, money has some real effect, at least short run, and, for Old Keynesians: “in the long run, we’re all dead.”

### 4. **New Keynesianism (& some new classical, in some ways):**

- a. Likewise convinced that, for one reason or another, prices &/or wages do not adjust fluidly in short run, so money growth can have short-run effects on real.
- b. In long-run, though, accepts that prices may well adjust completely to return real output to some “natural” level.
  - (1) NAIRU: “Non-Accelerating-Inflation Rate of Unemployment”, self-explanatory
  - (2) Or “Natural Rate of Unemployment (or Output)”, that rate obtained at equilibrium labor (output) supply & demand, absent stimulus or deflationary policy.
  - (3) Closely related. Perhaps identical (though derive from different parts gen’l theory)
- c. Note: Some Neo-Keynesian & Neo-Classical synthesis over past 15yrs or so [Simple diagram on next slide illustrates...]



- \* Difference Old & New = basically how long/short the short/long run
- \*\* Much New/Neoclassical may be similar, but via diff. mechanisms & different stances on long/short. runs.

5. **General agreement:** inflation cannot be sustained w/o accommodating money growth.

- a. If prices continue trend upward & money does not follow suit, reviewing  $MV=PQ$  shows that ( $V$  fixed,  $M$  not follow, so) output must fall continuously
- b. This is unsustainable. So, first part of puzzle regarding inflation must be sought in explaining how money could, would, & was expected to follow suit.

C.  $\Rightarrow$  Hibbs' first point: one key factor was removal of gold standard.

1. Under gold standard, money supply fixed to amount of gold.

- a. Thus, money can't grow to keep pace any swifter than gold supply.
- b. Which, only by mining *etc.*, so, absent technological or financial innovation (moving  $V$ ), money growth (or growth whole LHS of eqtn) was slow at best.
- c. Thus, prices kept in tight line under Gold Standard  $\Rightarrow$  expectations  $dM$  would not or could not accommodate expansionary policy or wage-price settlements.

2. Once gold standard removed, *opportunity* for steady inflation present

- a. New-classical stops there: seek incentives for continual  $\uparrow M$  in post-gold era.
- b. Hibbs' new-Keynesian story is a bit more revealing.

## D. Second important accounting identity:

1.  $Y = C + I + (G - T) + (X - M)$

- a. Aggregate income ( $Y$ ) equals private consumption ( $C$ ) + investment ( $I$ ) + net government spending ( $G - T$ ) + net exports ( $X - M$ , exports – imports).
- b. Again, the categories defined so RHS = all possible ways LHS, income, could be spent
- c. Thus, this is just an accounting identity—it becomes a theory when we start specifying how the various quantities in the equation derive (& whether & how  $Y^d$  &  $Y^s$  equate, i.e., how  $Y$  generated, determined).

VI. A simple Keynesian model, ignoring government & ignoring the international economy. (Also a crude picture of what roughly true for 1<sup>st</sup> half of 20<sup>th</sup> C: very small government by modern standards & high protection so little or no trade.)  $\Rightarrow Y \approx C + I$ .

$$Y \approx C+I$$

A. Now, the Keynesian parts of the theory are that:

1. Economy could very easily become stuck in position where demand insufficient & so output (supply) could be higher if demand boosted ( $\Rightarrow$  *output demand-constrained*);
  - a. Keynes' *animal spirits* of investors and *self-fulfilling prophecies*:
  - b. In brief: if think economy will grow, will invest, & so it will; &/but also *v.v.*
2. Individuals' *consumption behavior is relatively exogenous*; people follow simple "rules" for savings & consumption rates: e.g., "put aside" or save 20% of income. (Incidentally, aggregate consumption rates have/had averaged fairly constantly around 80% in the US pre & postwar G.A.)
  - a. (*s* has generally decreased, *c* has generally increased, in last 25 years or so).

B. These imply two things:

1. In equilibrium,  $Y^d = \text{aggregate demand} = \text{income} = \text{output} = Y^s$ , with demand determinant of the level at which this occurs; and
2.  $C = cY^{\text{disp}}$  where  $c$  is “marginal propensity to consume” from income, say 80%, and  $Y^{\text{disp}}$  is disposable (after-tax-&-transfer) income, then:

C. With small T&T (0 for convenience):  $Y = cY + I$  [substituting  $C=cY$  into  $Y=C+I$ ]

1.  $\implies Y - cY = I$
2.  $\implies (1-c)Y = I$
3.  $\implies Y = [1/(1-c)]I$

D.  $[1/(1-c)]$  here is the so-called *Keynesian multiplier*.

1. E.g., if  $c=.8$ , then  $dY = 5*(dI)$ . I.e., exogenous movements in investment create 5 times larger movements in output & income!
2. Generalizing, exogenous (outside) movements in anything in  $C + I + (G-T) + (X-M)$  are multiplied  $5X$  in their total effect on output ( $Y$ ).

## VII. What could have caused postwar economy to be so much more stable than prewar?

A. Govt's now tax & spend much more, & do so largely in manner tied *automatically* to income of individuals. Called *automatic stabilizers*...

1. *E.g.*, income taxes & income-related transfers create net income-tax rate of  $t$ . Say 20%.

2. This changes  $C = cY$  from above because now individuals can only consume from their disposable (after-tax)  $Y$ . Say  $c = .8$  like before, then:

a.  $Y = c(Y^{\text{disp}}) + I$  where  $Y^{\text{disp}} = Y - tY = \text{income after the net income-tax}$

b.  $\implies Y = cY - ctY + I$

c.  $\implies Y - cY + ctY = I$

d.  $\implies Y(1 - c + ct) = I$

e.  $\implies Y = [1/(1 - c + ct)]I$  or, equivalently,  $Y = [1/(1 - c\{1 - t\})]I$

3. So, if  $c = .8$  still &  $t = .2$  (roughly true of postwar era), then  $Y = I/(1 - .8 + .16) = I/.36 \approx 2.78 * I$

#### 4. Hibbs: Changing Multiplier Explains Much of Pre/Post-War Stability Difference

- a. Multiplier now  $\approx 2.78$ . Pre-war,  $\approx 5$ . [Back-of-envelope guesstimates.]
- b. Any random shocks that hit exogenous factors (fluctuations in those *animal spirits*, e.g.) were multiplied 5-fold pre-war, now, thanks to dampening effects of tax-and-transfer system, they are only multiplied 2.78-fold.
- c. To this, Hibbs will add (see below) that **policymakers have also used the discretionary [define] part of fiscal policy, G-T, more countercyclically and more predictably.**
- d. Thus, postwar stability is very easy to explain from Keynesian or New Keynesian viewpoint. Less obvious what classical explanation would be.

## B. What about the postwar inflation record?

### 1. H's arg simple:

- a. As already noted: Freeing from the Gold Standard made continual inflation *possible*, but that doesn't explain why occurred.
- b. H argues: exactly the success in macro & individual stability & security from postwar Keynesian policies also insulated wage & price setters (workers/consumers & firms/employers) from most disastrous effects of refusing to moderate wage/price-growth.
  - (1) **MV=PQ**: Under gold std, **M** relatively fixed by gold supply, **V** exogenous  $\Rightarrow$  any attempt to raise prices (including wages) beyond velocity increase results in  $\downarrow$  output ( $\uparrow$  UE,  $\downarrow$  profits, bankruptcy)
  - (2) **MV=PQ**: Now **M** free from gold supply  $\Rightarrow$  price & wage setters know that if demand/cede too-big raises ( $dP$ ), govt may/likely accommodate by  $\uparrow$  money ( $dM$ ), or real-demand if can (i.e., if fiscal policy effective).
- c. Wage & price setters therefore both (relatively) less afraid of excessive wage & price hikes, knowing policymakers (govt, bank (b/c govt leans on it), both) will bail-out by  $\uparrow$  demand &/or money. Therefore, wage-price bargains will routinely "err to the high side".

## VIII. Neoclassical Counters:

A. (As already noted: Long-run Phillips' Curve vertical, not exploitable.)

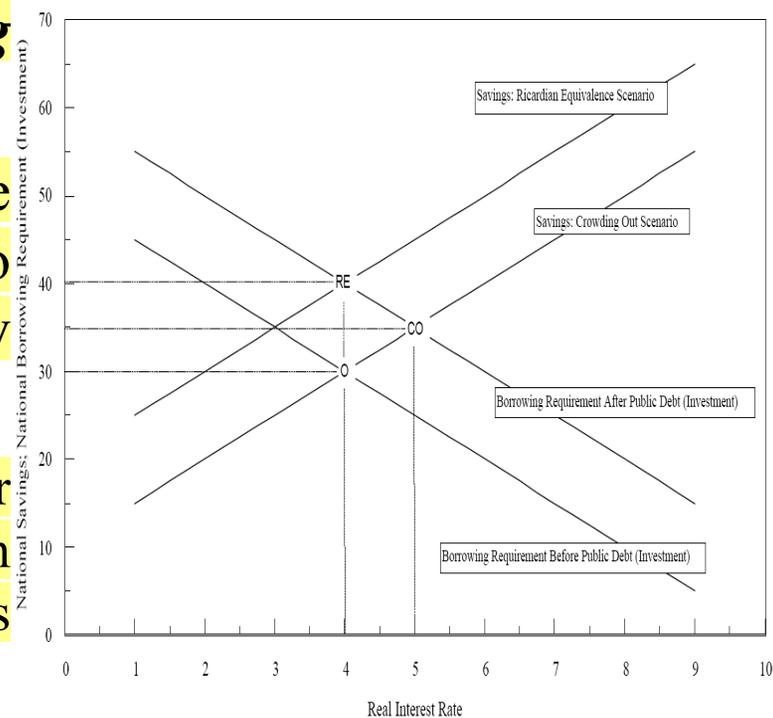
B.  $C=cY$  is *ad hoc*; in particular:  $c$  is endogenous, not exogenous:

1. People adjust spend, save, & invest decisions to  $E$ (econ situation), including  $E$ (policy)  $\Rightarrow$  if govt  $\uparrow$  ( $G-T$ ), no multiplier; private actors just  $\downarrow$  ( $C$  &  $I$ ) to cover  $E$ ( $\uparrow$  future taxes).

a. Std (neo-Keynesian) story: Govt borrows 10 extra  $\Rightarrow O \rightarrow CO$ , total borrow req  $\uparrow$  just 5,  $r \uparrow$  1pt, & “Govt borrowing ‘crowds out’ private investment” by 5.

b. Neoclassical counter:  $G-T \uparrow 10 \Rightarrow$  priv save  $\uparrow 10$ , so no  $\Delta$  demand & supply funds, so no multiplier but also no crowd-out or any other real effect (no  $\Delta r$ ).

(1) This is called *Ricardian equivalence*: whether govt borrows or taxes to finance a given amount of spending irrelevant. Just moves when the taxes collected.



C. Inflation is money-supply growth, “always & everywhere”:

1. The wage/price settlements Hibbs emphasizes are only proximate causes; root cause always  $dM \Rightarrow$  causes of INF must lie in incentives facing monetary policymakers, not in any new insensitivity of wage & price setters to possible negative repercussions of excessive wage-price hikes.

D. Neoclassical must provide some other set of explanations for facts 1, 2, & 3 about pre- v. post-war econ history. [We may see some parts...]

E. Hibbs’ argument, essentially a (new) Keynesian one, is simpler:

1. High, sustained real-income growth:

- a. Successful KWS implementation  $\Rightarrow$  stability & predictability real economy  $\Rightarrow$  growth.

- b. **KWS: Keynesian Welfare State = Keynesian macroeconomic policy + automatic stabilizers in tax-and-transfer & related systems (safety-net, welfare state).**

2. Macro stability & individual security stems very directly from KWS.

3. Removal Gold Std  $\Rightarrow$  opportunity for sustained INF; motive force behind the sustained INF is actually the stability & security achieved by KWS.

## IX. Direct evidence relating to these arguments:

### A. INF response to econ. booms & slumps (Table 1.2, p. 24)

1. Prices (i.e., inflation) relatively insensitive to (real) slumps post-war. Increasingly so over time.

2. Gen'ly, real slumps had induced (or were induced by) deflations or disinflation in pre-war.

3. More rigorously:

Table 1.1 Response of inflation to business cycle contractions, 1890–1980

Response to—	Change in the CPI inflation rate	Change in the gap between actual and trend log per capita Real GNP ( $\times 100$ )
Mild and moderate contractions		
1895–1896	+3.92	-5.46
1903–1904	-3.77	-4.56
1923–1924	-1.58	-3.67
1926–1927	-2.85	-3.05
1937–1938	-5.43	-7.51
1953–1954	-0.25	-5.19
1957–1958	-0.81	-3.95
1959–1961	+0.20	-3.09
1969–1970	+0.52	-3.47
1973–1975	+2.71	-8.29
1979–1980	+2.05	-4.37
Strong contractions		
1892–1894	-3.77	-14.6
1907–1908	-7.27	-12.0
1919–1921	-25.1	-20.4
1929–1933	-5.27	-45.4
(1929–1932)	(-10.9)	(-41.4)

*Note:* The gap between actual and trend log (base  $e$ ) real GNP per capita measures the severity of cyclical contractions. Trend values are the fitted values from the regression  $\ln Y_t = a + bT + \text{error}$ , where  $Y$  is real GNP per capita and  $T$  is a time index. Trend values are obtained from regressions applied to two separate time periods: 1890–1949 and 1950–1980. Mild contractions refer to cycles in which the change in the gap ( $\times 100$ ) between actual and trend real GNP per capita was less than 5.0; moderate contractions designate cycles in which the change in the gap fell between 5.0 and 10.0; strong contractions denote cycles where the change in the gap was greater than 10.0.

#### 4. Using Annual Data from 1890-1949:

$$\begin{array}{l} \text{DCPI}_t = +0.07 \quad +0.54 \sum_i \text{DCPI}_{t-i} \quad +30.4 [\ln Y - (\ln Y)^*] \\ \text{T-stats:} \quad (0.09) \quad (3.21) \quad (2.92) \quad R^2 = 0.38 \end{array}$$

#### 5. Using Annual Data from 1950-1980:

$$\begin{array}{l} \text{DCPI}_t = +0.32 \quad +1.01 \sum_i \text{DCPI}_{t-i} \quad +9.00 [\ln Y - (\ln Y)^*] \\ \text{T-stats:} \quad (0.51) \quad (5.97) \quad (0.83) \quad R^2 = 0.69 \end{array}$$

**Table 1.2 Regression of consumer price inflation rate on lagged inflation and deviations of ln per capita real GNP from trend, 1890-1929 and 1950-1980**

$$\text{Model: } \text{DCPI}_t = a_0 + \sum_{i=1}^3 a_i (\text{DCPI}_{t-i}) + a_4 [\ln Y_t - (\ln Y_t)^*] + u_t$$

Time period	Coefficients			$\bar{R}^2$
	$a_0$	$\sum a_i$	$a_4$	
1890-1949	0.07 (0.09)	0.54 (3.21)	30.4 (2.92)	0.38
1950-1980	0.32 (0.51)	1.01 (5.97)	9.00 (0.83)	0.69

Notes: The  $t$  statistics appear in parentheses;  $\text{DCPI}_t = \ln (\text{CPI}_t / \text{CPI}_{t-1}) \cdot 100$ , the annual percentage rate of change of the Consumer Price Index;  $\ln Y =$  natural logarithm of per capita real GNP; and  $\ln Y^* =$  trend  $\ln Y$  as predicted from regressions performed separately in each period of  $\ln Y$  on linear-time trend terms.

#### 6. Eqtns demonstrate 3 things:

- Price level mean-reverting pre-war but strongly trended post (seen in 2<sup>nd</sup> coefficients being  $<1$  or  $\approx 1$ , respectively) [expl.].
- Overall predictability of infl increased dramatically, nearly doubling (compare  $R^2$ ).
- Prices responded more & more certainly to output booms & slumps prewar than postwar period (see 3<sup>rd</sup> coeff's & s.e.'s).

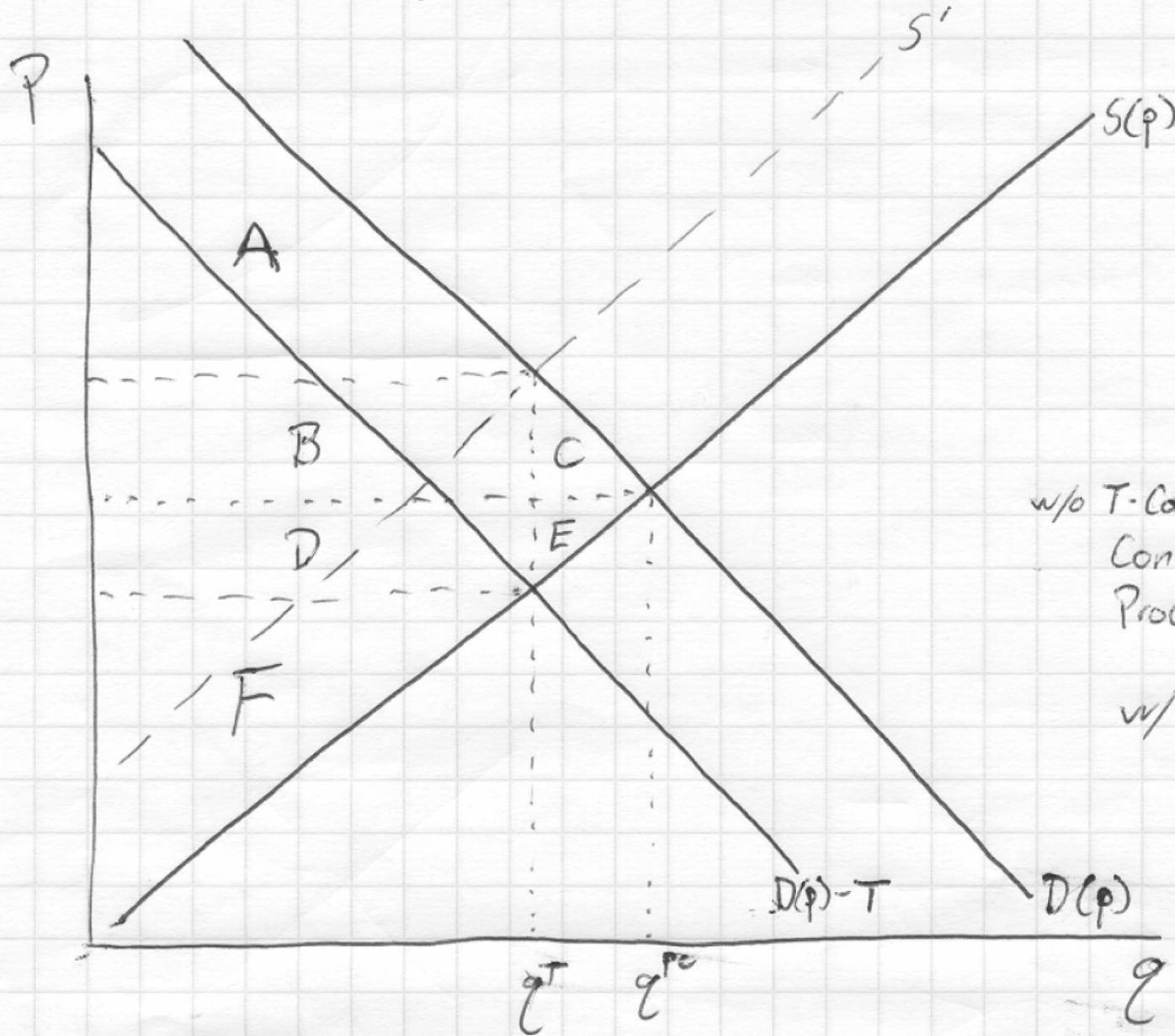
7. Hibbs already offered one important argument as to why; he now adds a more-proximate cause that wages increasingly set in staggered, long-term (3-yrs on average), nominal contracts in postwar period as unions became firmly established aspect of political-economic landscape.
  - a. Wages,  $\therefore$ , simply cannot adjust as swiftly & surely to output fluctuations. His point: such contracting practice would not have been sustainable if postwar KWS hadn't assured that cost of failure to adjust would be mitigated.
  - b. Firms, meanwhile, knew unions there to stay & that KWS operating, so could allow such wage rigidity to buy some labor peace (avoiding strikes & other disruptions, *etc.*).
    - (1) **Note: this one version of what sometimes called 'the historic (class) compromise' or 'the postwar settlement'**
8. This may all be changing or have changed to considerable degree:
  - a. Declining unionization & relative decline of unionized, mass, standardized production sectors
  - b. Increasing openness [Why would this matter?]
  - c. Back-to-back severe recessions '79-80 & '81-'82 may have changed political & economic landscape for long time to follow.

## B. Other key changes in the institutional structure of American pol-econ

### 1. Financial System: government (& esp. central bank) as *lender of last resort* (part of FDR's *New Deal*)

- a. Federal deposit insurance (FDIC, FSLIC)  $\Rightarrow$  bank panics have vanished. Hard to over-estimate importance. Almost every prewar depression (which were massive by modern standards remember) began w/ bank panics.
  - (1) Bank collapses have occurred; but not general panics.
  - (2) (Spiking fears of sustainability of this system in 2008 started our most-recent, and most-severe bust since at least early 80s, probably since Depression.
    - (a) Note the strong Fed action and then, at least initially bipartisan, government rescue.
    - (b) From this perspective: lesson learned. Interesting that public not convinced necessary or that worked... and that lesson perhaps forgotten or unlearned as time on?)
- b. Large network of federal loan guarantees, subsidies, & agencies  $\Rightarrow$  socialization of risk, lowers effective interest rates facing many buyers (& investors) & so allows many more transactions to occur that o/w could not
  - (1) (review supply & demand curves, consumer & producer surplus, & Harberger triangles of lost exchanges... [next page])

# Distortions (Taxes, Externalities, T-Costs, Info Asymm., Quotas, Price Ceilings/Floors, Etc.)



T-Cost Example  
 ↳ T-costs open a wedge b/w what seller receives & buyer pays

w/o T-Cost:

Cons:  $A + B + C$

Prod:  $D + E + F$

w/ T-cost:

Cons:  $A$

Prod:  $F$

T-Costs:

Borne:  $B + D$

Unconsumed Trades:  $C + E$

(Harberger)

2. Introduction to central bank of legal capacity & responsibility to conduct monetary policy to manage nominal & real econ, & so e.g. to conduct counter-cyclical mon pol (**Treasury-Federal Reserve Accord of 1951**):

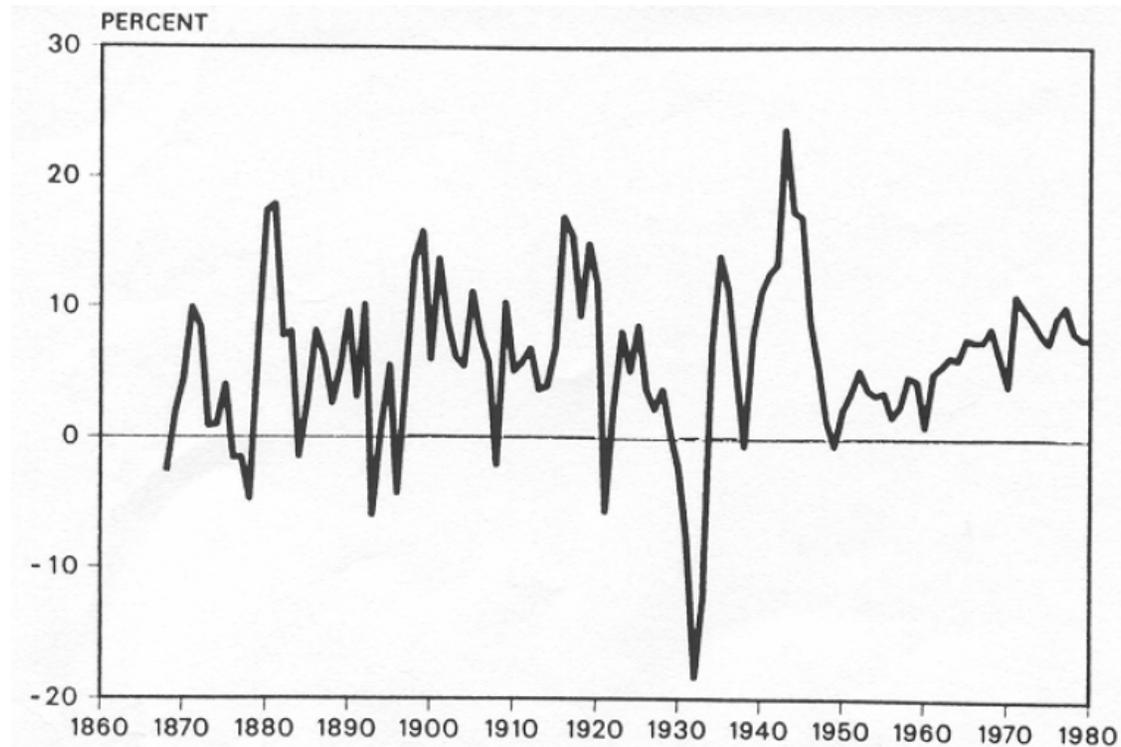


Figure 1.7 Monetary stability over time: M2 growth rates (percent per annum), 1868–1980. Sources: U.S. Department of Commerce, *Long Term Economic Growth 1860–1965*, Series B112, 1966; and TROLL-Citibank Economic Database, Series NBER12-FMM2X.

	1868–1929	1930–1949	1950–1980
Mean ( $\bar{x}$ )	5.78	5.80	6.08
Standard deviation ( $\sigma$ )	5.69	10.47	2.68
Coefficient of variation ( $\sigma/\bar{x}$ )	0.99	1.81	0.44

a. Using Annual Data from 1890-1929 (Table 1.3, p. 32):

$$DM2_t = +4.85 + 0.25DM2_{t-1} - 0.01DM2_{t-2} + 0.06DCPI_{t-1} - 10.9[\ln Y_{t-1} - (\ln Y_{t-1})^*]$$

T-stats: (2.43) (1.19) (-0.05) (0.24) (-0.72)  $R^2 = 0.00$

b. Using Annual Data from 1950-1980:

$$DM2_t = +1.62 + 0.52DM2_{t-1} + 0.07DM2_{t-2} + 0.29DCPI_{t-1} - 19.0[\ln Y_{t-1} - (\ln Y_{t-1})^*]$$

T-stats: (1.91) (2.88) (0.41) (2.01) (-1.79)  $R^2 = 0.55$

c. These equations demonstrate two things:

- (1) Monetary policy became much more predictable [what part tells you that?]
- (2) Monetary policy became much more counter-cyclical [what part tells you that?]

3. Whether this had large effect in achieving postwar stability much debated [I find evidence here & elsewhere pretty convincing (see, e.g., Galí in AER on continued empirical power of AD-AS model)—when policy actually conducted counter-cyclically.]

C. Plus the fiscal-policy changes & introduction &/or ↑T&T & other automatic stabilizers.

## X. Auerbach & G. Estimates of Multiplier over time:

# MEASURING THE OUTPUT RESPONSES TO FISCAL POLICY

Alan J. Auerbach

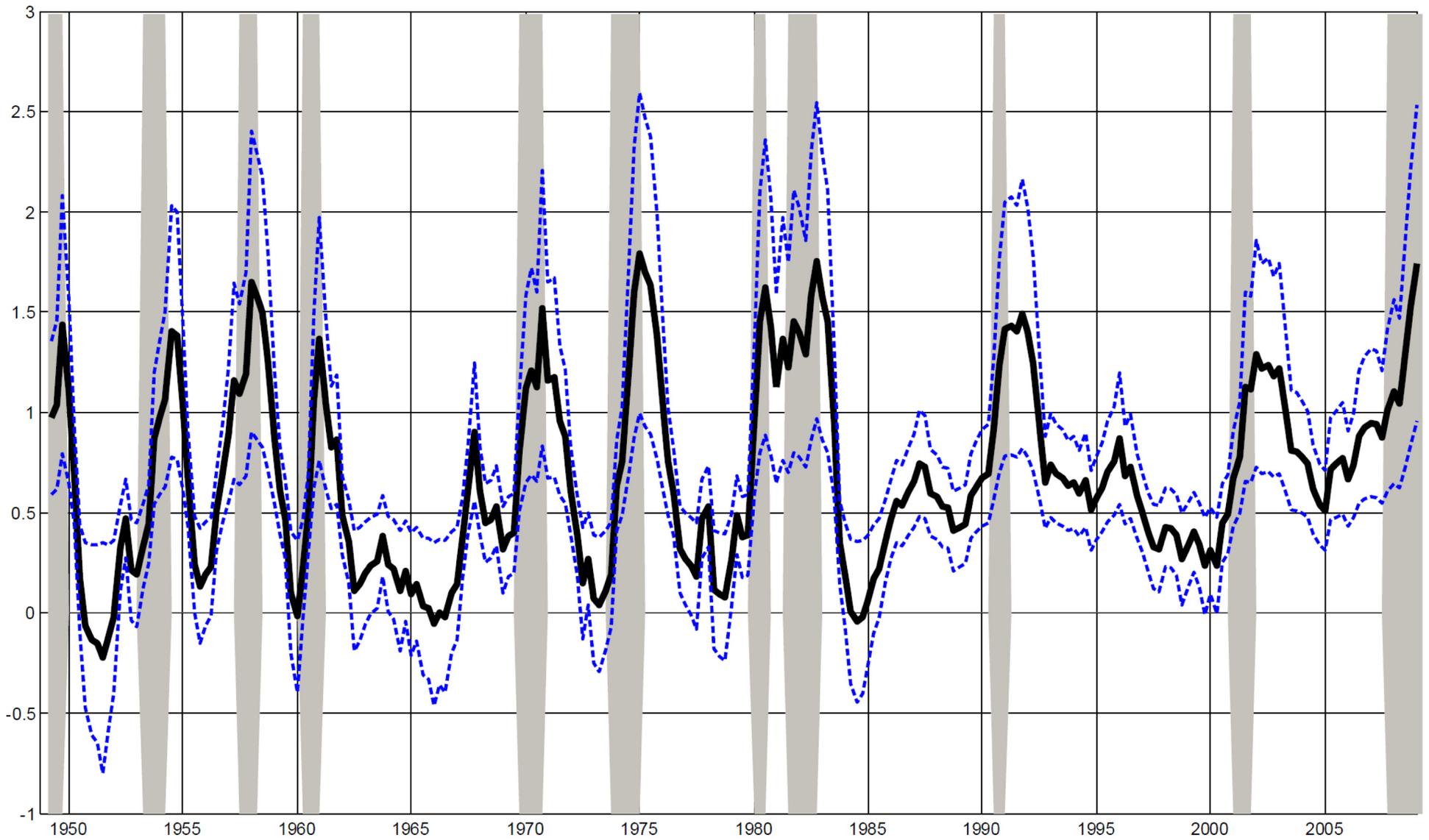
Yuriy Gorodnichenko

June 2011

### Abstract

A key issue in current research and policy is the size of fiscal multipliers when the economy is in recession. We provide three insights. First, using regime-switching models, we find large differences in the size of spending multipliers in recessions and expansions with fiscal policy being considerably more effective in recessions than in expansions. Second, we estimate multipliers for more disaggregate spending variables which behave differently relative to aggregate fiscal policy shocks, with military spending having the largest multiplier. Third, we show that controlling for predictable components of fiscal shocks tends to increase the size of the multipliers in recessions.

Figure 3. Historical multiplier for total government spending



**Notes:** shaded regions are recessions defined by the NBER. The solid black line is the cumulative multiplier computed as  $\sum_{h=1}^{20} Y_h / \sum_{h=1}^{20} G_h$ , where time index  $h$  is in quarters. Blue dashed lines are 90% confidence interval. The multiplier incorporates the feedback from  $G$  shock to the business cycle indicator  $z$ . In each instance, the shock is one percent increase in government spending.

**Table 1: Multipliers**

	$\max_{h=1,\dots,20} \{Y_h\}$		$\frac{\sum_{h=1}^{20} Y_h}{\sum_{h=1}^{20} G_h}$	
	Point estimate	Standard error	Point estimate	Standard error
Total spending				
Linear	1.00	0.32	0.57	0.25
Expansion	0.57	0.12	-0.33	0.20
Recession	2.48	0.28	2.24	0.24
Defense spending				
Linear	1.16	0.52	-0.21	0.27
Expansion	0.80	0.22	-0.43	0.24
Recession	3.56	0.74	1.67	0.72
Non-defense spending				
Linear	1.17	0.19	1.58	0.18
Expansion	1.26	0.14	1.03	0.15
Recession	1.12	0.27	1.09	0.31
Consumption spending				
Linear	1.21	0.27	1.20	0.31
Expansion	0.17	0.13	-0.25	0.10
Recession	2.11	0.54	1.47	0.31
Investment spending				
Linear	2.12	0.68	2.39	0.67
Expansion	3.02	0.25	2.27	0.15
Recession	2.85	0.36	3.42	0.38
Total spending; multipliers for alternative measures of normalized unanticipated shocks to government spending				
Baseline model, normalized shocks to government				
Expansion	0.63	0.13	-0.33	0.20
Recession	3.06	0.35	2.24	0.24
SPF/RSQE forecast errors as contemporaneous shocks (Panel A in Figure 7)				
Expansion	1.13	0.20	-1.23	0.65
Recession	3.85	0.29	2.99	0.27
Control for SPF/Greenbook forecast of government spending (Panel B in Figure 7)				
Expansion	0.82	0.12	0.40	0.15
Recession	3.27	0.73	2.58	0.59
Real-time SPF/Greenbook forecast error for $\Delta G$ as an unanticipated shock (Panel C in Figure 7)				
Expansion	0.46	0.27	-0.25	0.23
Recession	7.14	1.45	2.09	1.35
Ramey (2011) news shocks (Panel D in Figure 7)				
Expansion	0.66	0.12	-0.49	0.24
Recession	4.88	0.67	3.76	0.52

Note: The table shows output multipliers for a \$1 increase in government spending.

## Some additional work with the Keynesian Multiplier and Aggregate Demand in Closed and Open Economies with and without Automatic Stabilizers & Discretionary Fiscal Policy:

Closed Economy, No Government:

$$Y = C + I + \underbrace{(G - T)}_{\text{Net Discretionary Fiscal Policy, Stimulus, Deficit}} + \underbrace{(X - M)}_{\text{Net Exports, Trade Balance}}$$
$$= cY + I = \left( \frac{1}{1 - c} \right) I$$

⇒ Large multiplier, so volatile economy.

Closed Economy, Govt w/ Discretionary Fiscal Policy Only:

$$Y = cY + I + (G - T)$$
$$= \left( \frac{1}{1 - c} \right) [I + (G - T)]$$

⇒ Large multiplier, so volatile economy, but also highly effective discretionary fiscal policy.

Closed Economy, Govt w/ Automatic-Stabilizers Only:

$$Y = \underbrace{c(1-t)Y}_{C=cY^{disp}} + I, \text{ where } t = \text{net rate of income-linked tax \& transfer}$$

$$= \left( \frac{1}{1-c(1-t)} \right) I$$

⇒ Smaller multiplier, so less volatile economy.

Closed Economy, Govt w/ Automatic-Stabilizers & Discretionary Fiscal Policy:

$$Y = \underbrace{c(1-t)Y}_{C=cY^{disp}} + I + \underbrace{(G-T)}_{\text{Discretionary fiscal-policy}}$$

$$= \left( \frac{1}{1-c(1-t)} \right) [I + (G-T)]$$

⇒ Smaller multiplier, so less volatile economy, and/but effective discretionary policy, if less so than without automatic stabilizers also.

# The Open Economy with “Automatic” & Discretionary Government Policy

$$\begin{aligned} Y &= \underbrace{c(1-t)Y}_{C=cY^{disp}} + I + (G - T) + (X - M) \\ &= c(1-t)Y + I + (G - T) + (X - \underbrace{m}_{\substack{\text{marginal} \\ \text{propensity} \\ \text{to import}}} Y) \\ &= \frac{1}{[1 - c(1-t) + m]} \times [I + (G - T) + X] \end{aligned}$$

⇒ New source of exogenous AD  $\uparrow\downarrow$  in exports, X. Whether this adds instability or stability depends on how synchronized export-market economies are with domestic economy. If more than weakly positively correlated, then destabilizing; if weak to zero or negatively correlated, then stabilizing.

⇒ New source of multiplier dampening (AD-curve flattening), which is stabilizing but also fiscal-policy-efficacy weakening, in the marginal propensity to import,  $m$ , which is sometimes called the “leakage” rate because it represents demand “leaking” from the domestic economy (but I notice we don’t call foreign economies’ marginal propensity to consume our exports the “leech-age” rate...).