

# PS 343: Hibbs, *The American Political Economy*

## I. The Costs of Unemployment (Chapter 2)

### A. Definition, measurement, & interpretation:

1. UE widely recognized key indicator macroecon health & also individual hardship, so define, measure, interpret always controversial & political

### 2. **Official Definition:**

a. From BLS CPS: # 16+ who had no work in last wk, were available for job, & actively sought work during preceding 4 wks) as % total civilian labor force.

b. [BLS website claims “substantially unchanged” though “much modified” (e.g., 1994 “major redesign” of CPS) since 1940 inception...]

3. Reasons believe UE overstates [a. (p.44)] & understates [b. (p.45)], but, for comparisons over time, which alternative use hardly matters (**Fig. 2.1**)

a. About 1/3 ( $\pm$ , it fluctuates) are between jobs or b/w lab-mrkt entry & first job.

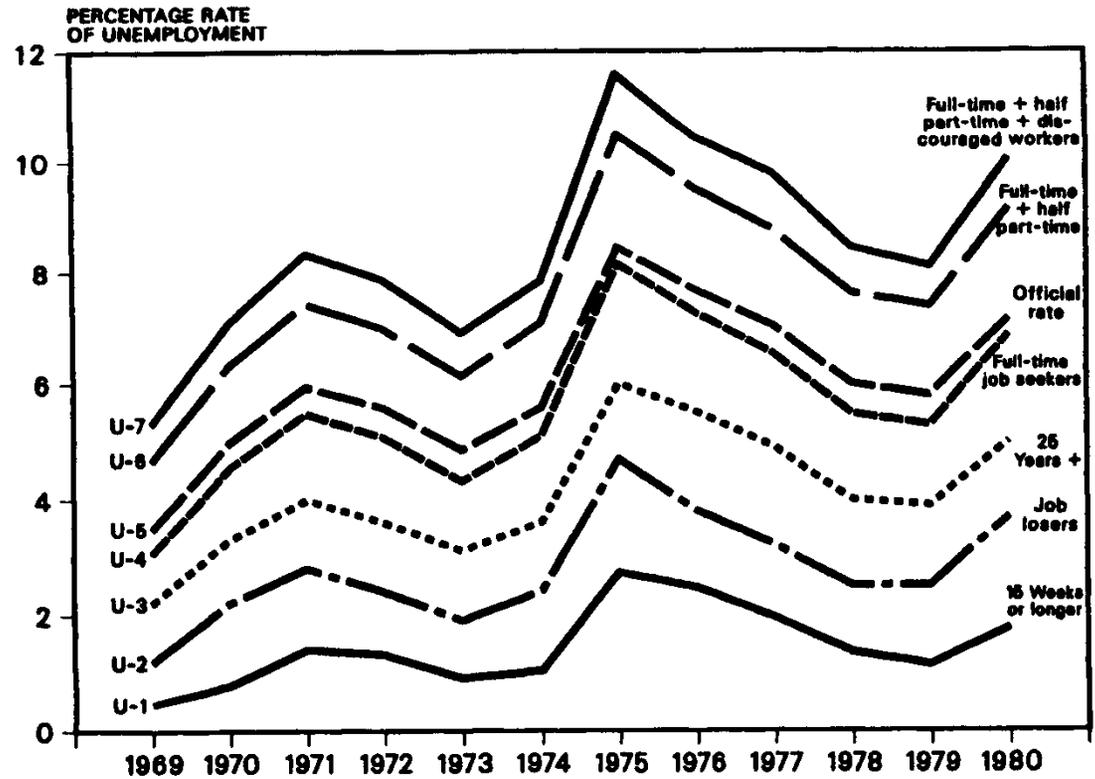
b. *Discouraged* jobless & underemployed not counted; & it's a snapshot.

**Table 2.1** Components of the official unemployment rate, 1967–1983

Year	Total official unemployment rate (percent)	Percentage of those unemployed who are—					
		On layoff <sup>a</sup>	Job losers	Job leavers	Seeking temporary work	School leavers	Other
1967	3.8	13.2	29.0	15.8	15.8	7.9	23.7
1968	3.6	11.1	25.0	16.7	19.4	5.6	22.2
1969	3.5	11.4	22.9	14.3	20.0	5.7	22.9
1970	4.9	16.3	28.6	14.3	16.3	6.12	28.6
1971	5.9	15.3	32.2	11.9	15.3	6.8	32.2
1972	5.6	8.9	25.0	14.3	14.3	8.2	19.6
1973	4.9	10.2	28.6	16.2	16.2	8.2	22.5
1974	5.6	14.3	28.6	14.3	18.1	8.9	19.6
1975	8.5	21.2	34.1	10.6	12.9	5.9	15.3
1976	7.7	14.3	35.1	11.7	13.0	6.5	19.5
1977	7.0	12.9	32.9	12.9	12.9	7.1	21.4
1978	6.1	11.5	30.0	14.1	NA	NA	
1979	5.8	14.0	28.8	14.3	NA	NA	
1980	7.1	19.8	32.1	11.6	NA	NA	
1981	7.6	17.5	34.2	11.1	NA	NA	
1982	9.7	19.9	38.8	7.9	NA	NA	
1983	9.6	16.6	41.8	7.7	NA	NA	

Sources: The figures for 1966–1977 are based on unpublished BLS data reported in Roberg "The Nature and Measurement of Unemployment," National Bureau of Economic Research Paper no. 252, July 1978. The figures for 1978–1983 are based on data from the Bureau of Labor Statistics, *Handbook of Labor Statistics*, December 1983, table 24; and idem, *Employment and Unemployment*, 1984, table 24.

Still, by any of various definitions, & w/ any groups (or estimates thereof) included or excluded, rates move together to very great extent. So, for purposes exploring whether goes  $\uparrow \downarrow$  w/partisanship L/R shift governments or in response to policy moves, or how public opinion & political behavior (voting) responds to UE, largely irrelevant which measure we use.



**Figure 2.1** Range of unemployment concepts, 1969–1980. Sources: Bureau of Labor Statistics

4. Reasons to be careful about over time comparisons nonetheless:
- a. Intro. or  $\uparrow$  UE insurance  $\Rightarrow$   $\uparrow$  benefit of registering as UE, likely  $\uparrow$  reporting
  - b. Some programs (food stamps, AFDC, *etc.*) explicitly require(d) work-register, likely  $\uparrow$  official labor pool w/ some not seeking employ. [So  $\downarrow$   $\uparrow$  value...]
  - c. Change in demographic composition of workforce. Two huge trends:
    - (1) Baby boomers as they moved through the age distribution;
    - (2) Female labor-force participation.
  - d. Estimates: these factors may have  $\uparrow$  official UE perhaps 2% from 1950s-today
  - e. Contrarily, redefinitions ‘seeking work’ etc. more than counteract; ranks of discouraged & underemployed also increasing; flow measure, stock  $\approx 3 \times$  flow.

**Table 2.2 Official unemployment experience, five-year averages of annual data for 1961–1980**

Period averages	Official unemployment rate (percent) (1)	Percentage of labor force experiencing one or more spells of unemployment during a calendar year (2)	Ratio of (2) to (1) (3)
1961–1965	5.5	16.1	2.9
1966–1970	3.9	13.2	3.4
1971–1975	6.1	16.8	2.8
1976–1980	6.7	17.3	2.6

*Sources:* Bureau of Labor Statistics, *Handbook of Labor Statistics*, December 1980, table 40; and *idem*, *The Employment Situation*, 1980.

## B. Aggregate Costs of Unemployment

1. Economically, obvious: *unemployment* means unused human resources means lost output/income [see Okun's Law, next slide...].
2. The political impact is even greater:
  - a. UE is a rate: since people get & lose jobs,  $x\%$  UE usu. means about  $2.5-3 \times x\%$  (so 5% UE usu. means 12.5%-15%) labor force w/o work for some part of yr
  - b. Vicarious experience of those who know or see those actually UE'd (& recall, guy on street w/ hand or hat out or washing car wndw not unemp'd (offic'ly)).
  - c. Those who face increased risk of UE.
3. Even the estimated psychological, social, & even medical costs notable. National levels of all these have been found related to unemployment (in the obvious ways) by various researchers:
  - (1) Stress, mental health, suicides, cardiovascular & renal disease, crime...
  - (2) Summary estimate (in '70s): 1% more UE/yr  $\Rightarrow$  30,000 $\pm$  more deaths in that yr.

4. **Okun's Law:** tight *empirical relationship* between output growth-rate & change in UE: (+/-1% UE to -/+2% growth & v.v. +/-1% grow to -/+0.5% UE)

a. Using 1950-1983 Annual Data (equation 2.1, p. 50):

$$\begin{array}{rcl}
 (\ln Q_t - \ln Q_{t-1}) & = & +0.036 - 0.021 (U_t - U_{t-1}) \\
 \text{Std. Errs.:} & & (0.002) \quad (0.002) \qquad R^2 = 0.82
 \end{array}$$

b.  $\Rightarrow$  each 1% UE for 1 year associates with 2.1% slower growth of real GNP in that year; in 2010 that would translate to about \$2,000/household per %-point UE per year [Hibbs reports \$880 from 1984 $\mp$ , CPI 1/84 to 12/10  $\approx$  225  $\Rightarrow$  2.25 $\times$ \$880 = \$1980].

c. (Obviously, this not a causal association in the sense that movements in UE arise exogenously and movements in  $Q$  are effects of that exogenous cause. Output & employment both measures of real economic performance.)

d. [Aside on formal analysis *welfare-economics* cost of unemployment:

- (1) Value of extra "leisure" added by that amount of UE should be netted out.
- (2) Best estimates suggest that value  $\leq 25\%$  of total lost value.
- (3) (Can't be 100% or UE'd would have preferred leisure to their possible earnings, & so would not have been seeking work & so would not have been officially UE.)]

## C. Unemployment Incidence:

### 1. UE by soc-ec demog. grp (T2.3,p.53)

a. **Occupational divide** dramatic: *esp* white/blue-collar; gap is cyclical; had shrunk somewhat.

b. **Gender gap** also, but relatively small (disappears controlling gender diff's in occupation, i.e. gender gap in UE directly reflects gap in type of jobs)

c. **Large race divide**, & showed little sign diminish. Also cyclical.

d. **Mammoth difference across age groups**. Again, cyclical.

e. Differences generally cumulate: minority, youth, blue-collar UE is *really high & really cyclical*.

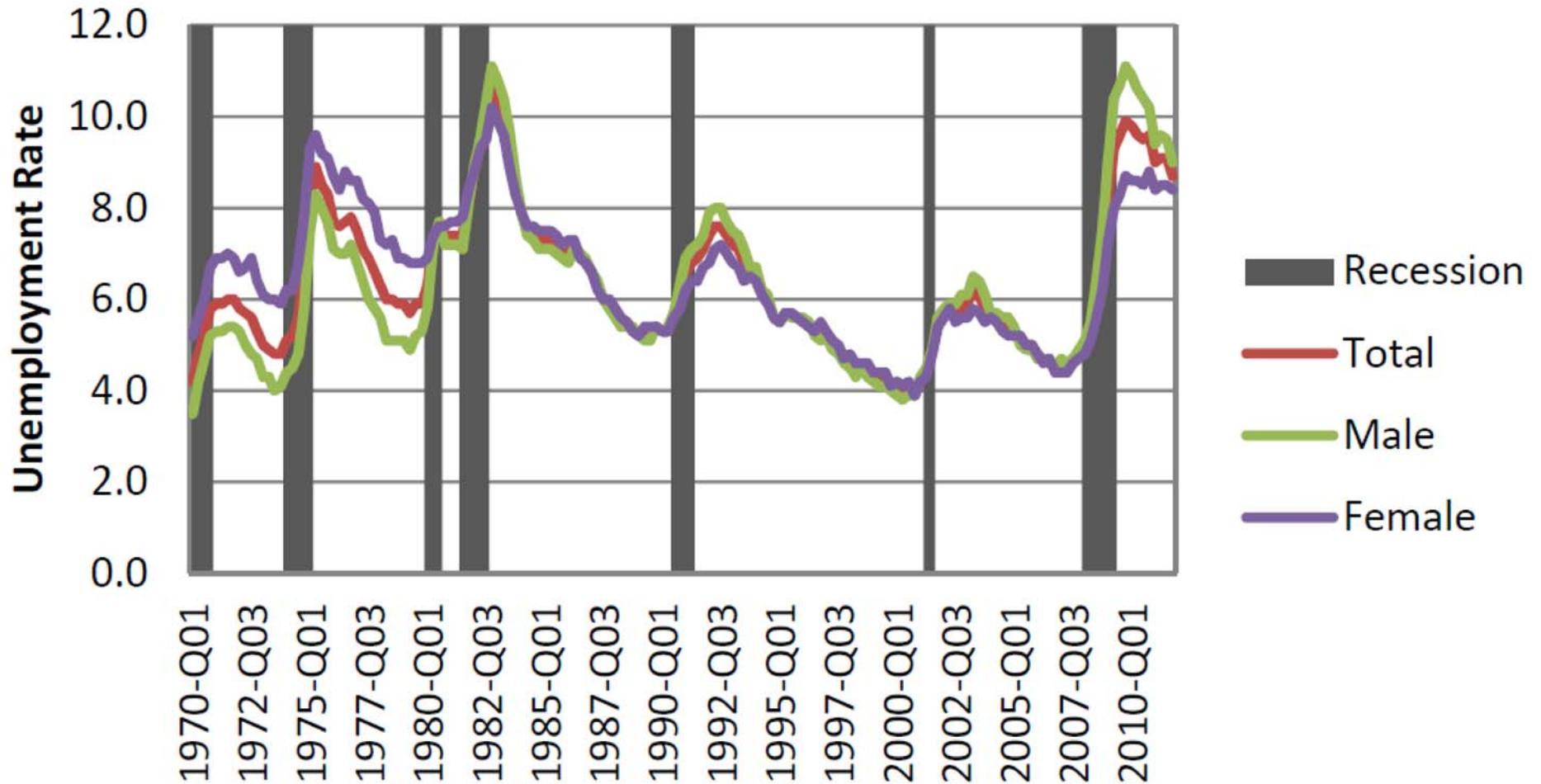
(a) Note: above statements apply to Hibbs' analysis period; 1960, 70, 80, as per T2.3. Figures below show how UE breakdowns by socioeconomic group have developed 1970-2010.

Table 2.3 Unemployment rates for demographic groups in selected years (percent)

Demographic group	1960	1970	1980
<b>Total labor force</b>	5.5	4.9	7.1
<b>Occupation</b>			
<b>Total white collar</b>	2.7	2.8	3.7
Professional and technical	1.7	2.0	2.5
Managers and administrators	1.4	1.3	2.4
Sales workers	3.8	3.9	4.4
Clerical workers	3.8	4.0	5.3
<b>Total blue collar</b>	7.8	6.2	10.0
Craftspeople and kindred	5.3	3.8	6.6
Operatives	8.0	7.1	11.4
Laborers (excluding farm)	12.6	9.5	14.6
Service workers	5.8	5.3	7.9
Farmers and farm laborers	2.7	2.6	4.4
<b>Gender</b>			
Males	5.4	4.4	6.9
Females	5.9	5.9	7.4
<b>Race</b>			
Whites	4.9	4.5	6.3
Nonwhites	10.2	8.2	13.2
<b>Age</b>			
16 to 19	14.7	15.3	17.7
20 to 24	8.7	8.2	11.5
25 to 54	4.5	3.4	5.4
55 and older	4.1	2.9	3.3

Sources: Bureau of Labor Statistics, *Handbook of Labor Statistics*, De-

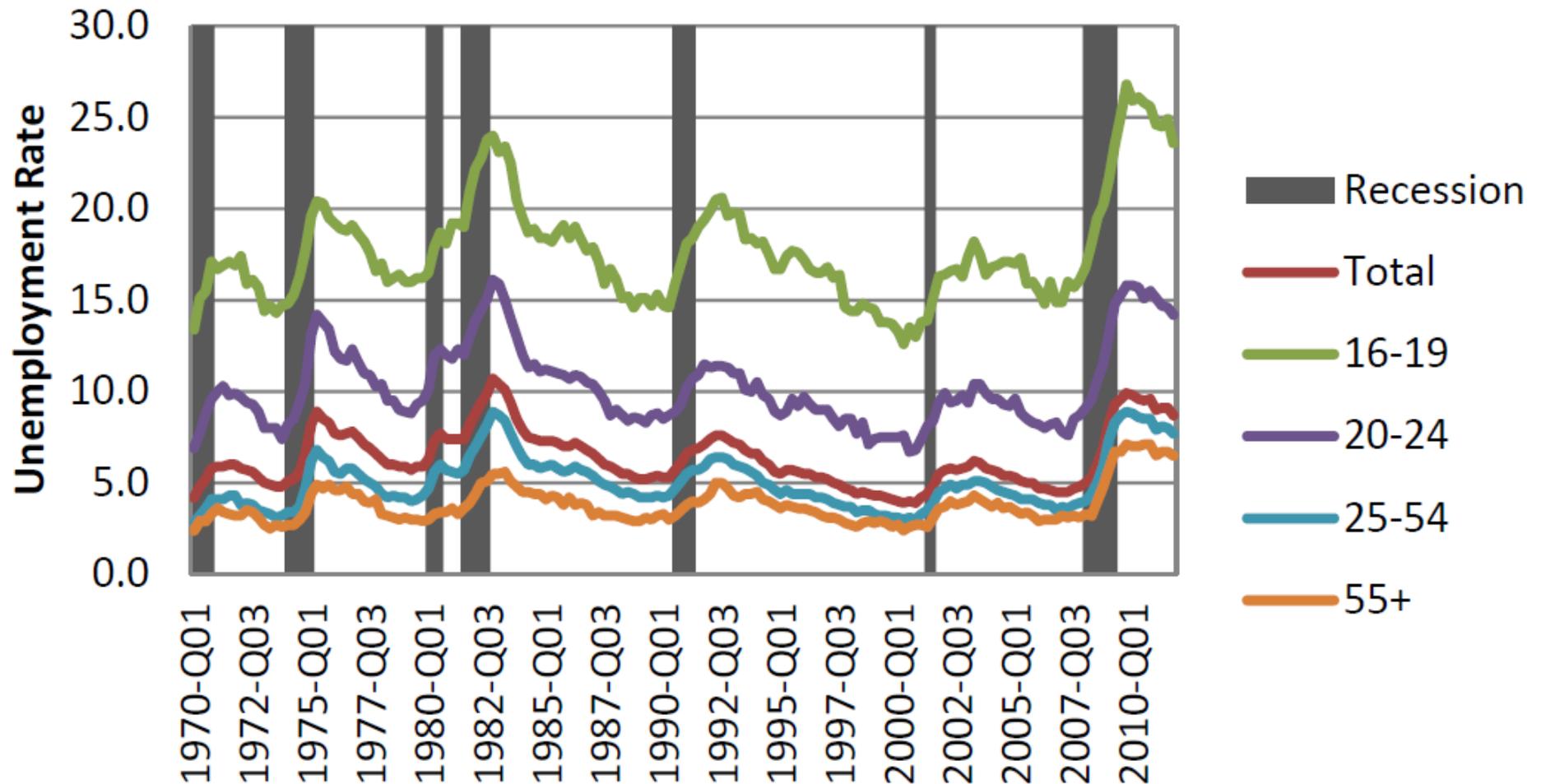
# Unemployment by Gender



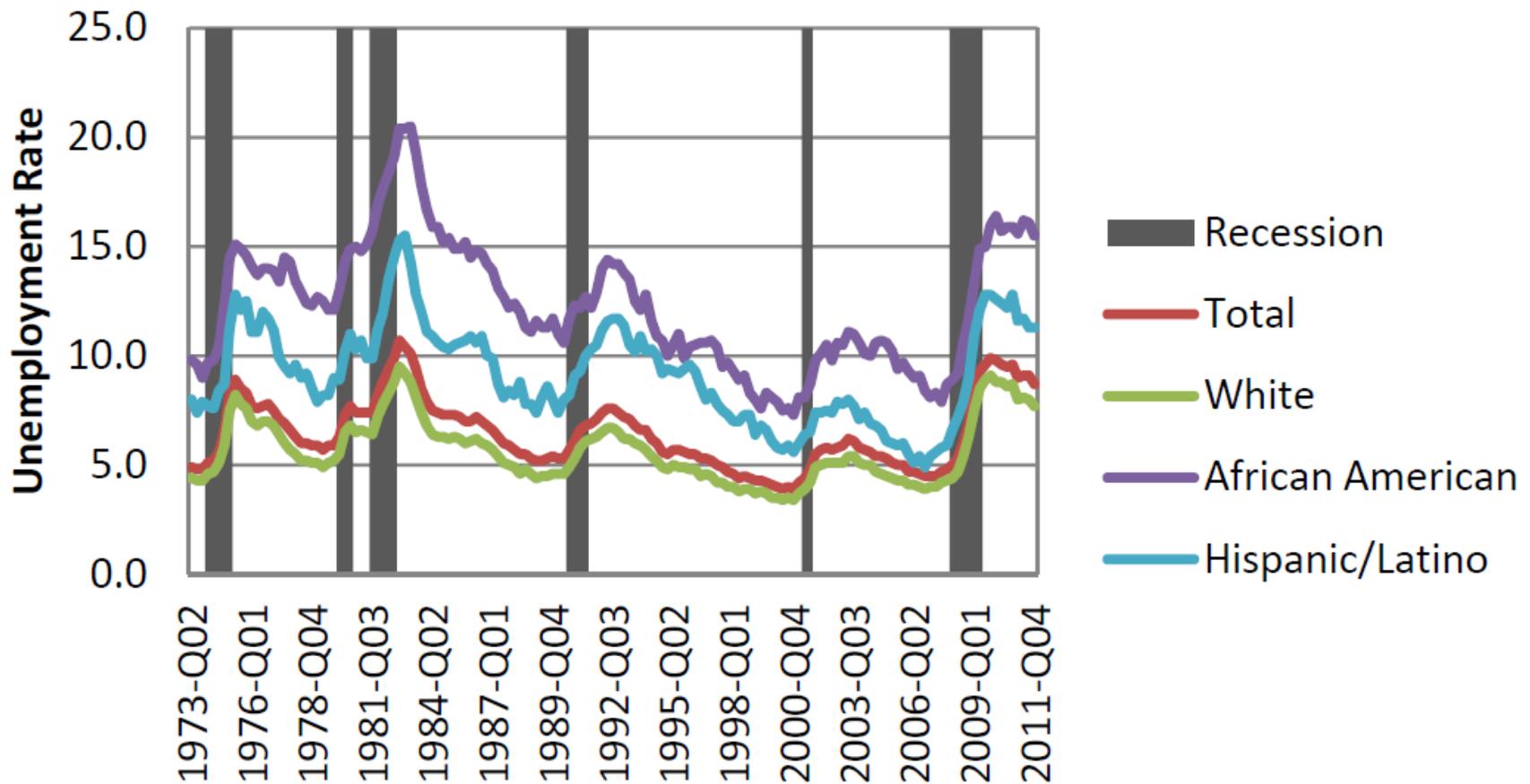
Interestingly, since the early eighties, male unemployment same or higher average and more cyclical than female unemployment.

But age & other sociodem.-group unemployment breakdowns seem preserved their relations as Hibbs found them then, though maybe magnitudes of differences changing: widening by age and educational attainment, narrowing appreciably (but still large gap) after first widening bit by race.

## Unemployment by Age



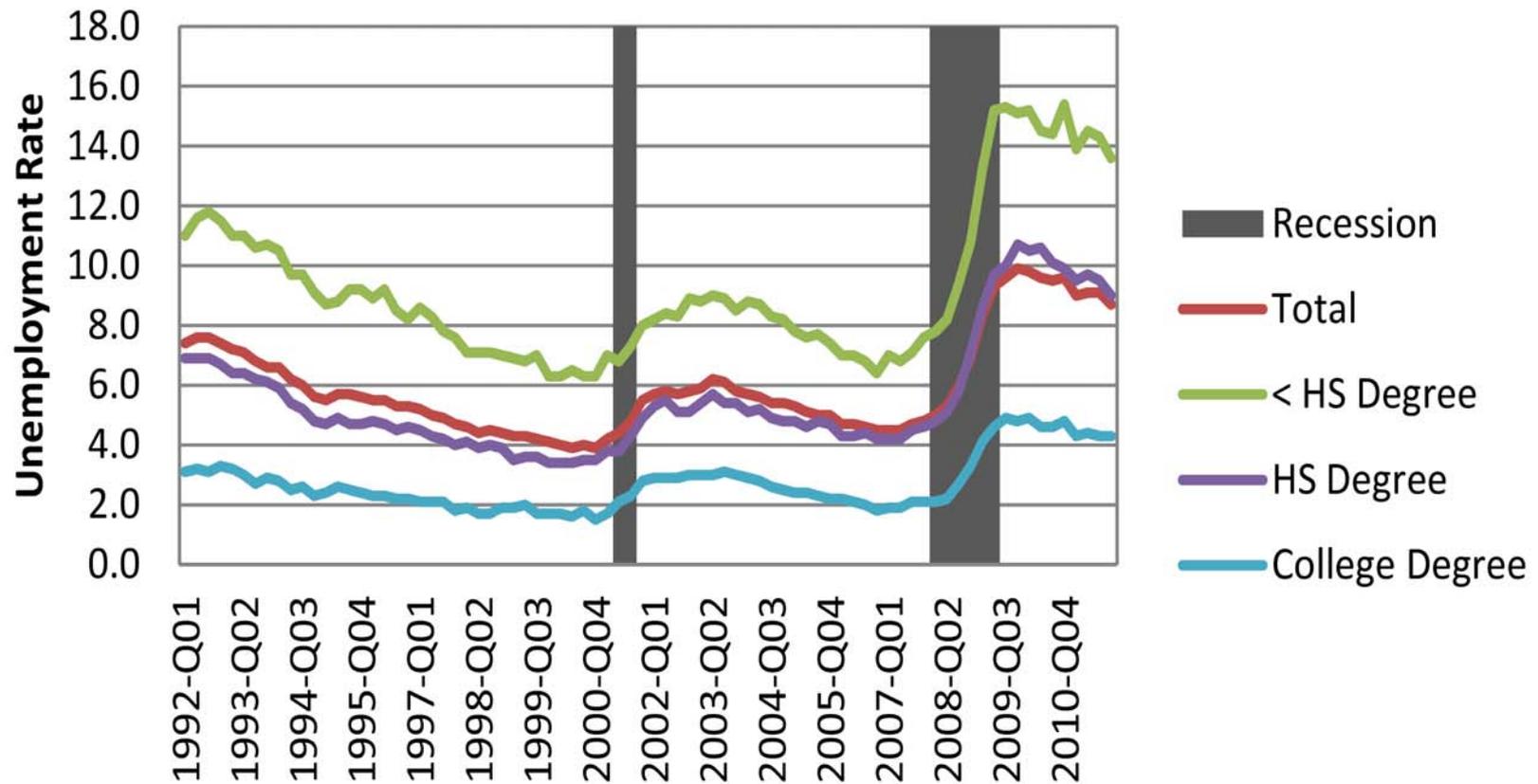
# Unemployment by Race



## African-American Unemployment Regressed on Total Unemployment:

	<i>Coefficient</i>	<i>Std Err</i>	<i>t Stat</i>	<i>P-value</i>	<i>R2</i>
<b>1972.1-2011.4:</b>	1.733	0.050	34.547	0.000	0.883
<b>1972.1-1984.4:</b>	1.883	0.086	21.879	0.000	0.905
<b>1985.1-2011.4:</b>	1.540	0.058	26.484	0.000	0.869

# Unemployment by Education



**Edu. Attain-Status Group Unemploy. Regressed on Total Unemp., 1992q1-2011q4 :**

	<i>Coefficient</i>	<i>Std Err</i>	<i>t Stat</i>	<i>P-value</i>	<i>R2</i>
< High School	1.556	0.023	68.408	0.000	0.992
High School	1.184	0.021	55.444	0.000	0.988
College	0.529	0.013	39.422	0.000	0.976

2. **(T2.5; next slide):** changes pre- & post-tax-&-transfer income due to 1% rise in UE (assesses effectiveness T&T reducing individual hardship UE)

a. **Conclusion 1:** T&T system does (*or did?*\*) exactly what supposed to do:

- (1) reduced the private impact of UE, [\* need study post-“ $\Delta$  welfare as we know it]
- (2) did so (proportionately) more for the very poor than the relatively well-off,
- (3) may well have had undesirable side-effects [like what?], but certainly seems accomplished primary task (i.e., claims that not do 1&2 would be/have been false).

b. **Conclusion 2:** T&T seems to have worked almost equally across racial groups an average, but worked increasingly less well for minorities compared to non-as income declined (though some help to both; no analysis why disparity).

c. **Conclusion 3:** T&T offset losses of female heads of households less well than male, but also true that 1% UE created less income losses for female HoH's to start (b/c lrgr share female HoH income on avg from non-mrkt activities).

#### D. Summary:

1. However you measure, UE has massive aggregate costs, and
2. Markedly different impact across demographic, occupational, & income grps: **'lower' ends socioec hierarchies more & more-cyclical UE (risk)**
3. The T&T system offsets some but not-near-all of these two facts.

**Table 2.5 Changes in pre- and post-tax-and-transfer income due to a 1-percentage-point rise in the aggregate unemployment rate**

Average normal family income as multiple of poverty line (1967-1980)	Average probability that primary earner will experience unemployment during a year (1967-1980)	Pre-tax-and-transfer income loss as percent of normal income	Post-tax-and-transfer income loss as percent of normal income	Replacement rate of tax-and-transfer system as percent of pre-tax-and-transfer loss
<b>Families in which primary earner is a white male</b>				
<1.0	0.32	-5.8	-2.6	56
1.5-2.0	0.23	-2.1	-1.3	40
2.5-3.0	0.16	-1.4	-0.9	37
>5.0	0.04	-0.7	-0.5	31
<b>Overall weighted average</b>	<b>0.13</b>	<b>-1.2</b>	<b>-0.8</b>	<b>37</b>
<b>Families in which primary earner is a nonwhite male</b>				
<1.0	0.35	-5.9	-3.5	40
1.5-2.0	0.25	-2.1	-1.3	37
2.5-3.0	0.17	-1.4	-1.0	32
>5.0	0.04	-1.0	-0.7	31
<b>Overall weighted average</b>	<b>0.20</b>	<b>-2.0</b>	<b>-1.3</b>	<b>37</b>
<b>Families in which primary earner is a female</b>				
<1.0	0.27	-2.2	-1.6	27
1.5-2.0	0.21	-1.2	-0.7	20
2.5-3.0	0.14	-0.6	-0.5	22
>5.0	0.02	-0.6	-0.4	21
<b>Overall weighted average</b>	<b>0.13</b>	<b>-0.9</b>	<b>-0.7</b>	<b>22</b>

Source: Edward Gramlich and Deborah Laren, "How Widespread Are Income Losses in a Recession?" in D. Lee Bawden, ed., *The Social Contract* (Washington, D.C.: Urban Institute, 1984), tables 1, 3.

## II. The Costs of Inflation (Chapter 3)

A. **Definition:** pervasive increase in money prices of *all* goods & services (on average); i.e., decline in purchasing power of money

1. **Must distinguish from relative-price movements:** not some price or set prices, but *all* prices (incl. labor prices (=wages)), on avg, against value of money. Econ-theory: Relative-prices real; Agg. or avg. prices nominal.

(1) Keynes: “A change in the value of money, that is to say in the level of prices, is relevant only insofar as its incidence is unequal.”

(2) Arthur Burns: “There can be little doubt that poor people, or people of modest means generally, are the chief sufferers of inflation.” [Hibbs: well, actually...]

2. Technical measurement issues, which, of course, are inevitably political, as with UE, because resolution different ways benefits some, hurts others.

a. **Requires creation of an index of prices, but on which goods?**

(1) Some “representative” bundle of consumption goods  $\Rightarrow$  CPI;

(2) All goods & services produced in the economy  $\Rightarrow$  GDP (or GNP) deflator;

(3) Others: e.g., all goods & services purchased  $\Rightarrow$  GNI, PPI, WPI, PCE, etc.

- b. CPI by far most common publicly; CPI & GDP both prominent academically
    - (1) Various private & public *COLA*'s fixed to CPI
      - (a) Many government programs fixed to CPI
      - (b) Many bargained wage settlements include CPI adjustments
      - (c) Maybe 1/2 of Americans directly affected by it *via* public laws or private contracts
    - (2) Certainly the most commonly cited index in general news programs, *etc.*
  - c. As with UE, not much diff in over-time moves; highly correlated (T3.1: next).
3. Problems with Price Indices (& therefore Infl. measures), esp. with CPI
- a. CPI (& all others) **NOT “cost of living” indexes** because they do not & cannot allow for substitution. [Can you explain why the following:]
    - (1) Choice is either some fixed bundle  $\Rightarrow$  price index overstates cost-of-living increase;
    - (2) Or the current bundle  $\Rightarrow$  price index understates cost-of-living increase;
    - (3) [Avg seems logical, doesn't it? Wouldn't be perfect, but would probably help.]
  - b. CPI esp. egregious errors *re*: housing (pp. 68-9); known >10yrs b4 act ('83-5)
    - (1) Double counts by using both sale prices & mortgage costs in the index
    - (2) Bigger prob: Treats house-price  $\uparrow$  as *consumption*-price  $\uparrow$ , but for home-owners=*asset*-price  $\uparrow$ . This the problem with any (subset bundle) price-index.
    - (3) New CPI series now uses “rental equivalent” as consumption-price of housing.

- c. Another issue, somewhat recently in news occasionally as inflation rates have become typically so low, regards the difficulty incorporating quality increases; how compare prices 2009 & 2010 models? ... ⇒ Likely overstates.

Table 3.1 Annual inflation rates of various price indexes by period, 1950–1981

Time period	Traditional CPI (1)	Revised CPI (2)	PCE deflator (current weights) (3)	PCE deflator (fixed 1972 weights) (4)	GNP deflator (current weights) (5)	GNP deflator (fixed 1972 weights) (6)	Underlying consumer price rate (PCE nonfood, nonenergy, current-weights deflator) (7)
1950–1954	2.42	NA	2.68	NA	2.52	NA	NA
1955–1959	1.63	NA	2.03	NA	2.54	NA	NA
1960–1964	1.26	NA	1.46	1.09	1.47	1.20	1.48
1965–1969	3.33	NA	3.06	2.79	3.53	3.26	2.93
1970–1974	5.93	5.54	5.51	5.56	5.65	5.69	4.62
1975–1979	7.74	7.08	6.66	7.01	7.01	7.38	6.41
1980	12.67	10.59	9.78	10.59	8.92	9.43	8.61
1981	9.84	9.10	8.22	8.90	9.03	9.18	8.26
Statistics, 1960–1981							
Cumulative price rise	207%	NA	171%	173%	185%	185%	152%
Mean of annual compound rates	5.17	NA	4.61	4.62	4.83	4.83	4.28

Source: Computed from price index data in the Citibank Economic Database.

Notes: NA means not available; annual percentage rates of change are computed as  $\ln(X_t/X_{t-1}) \cdot 100$ ; cumulative inflation is computed as  $X_{81}/X_{60} - 1$ .

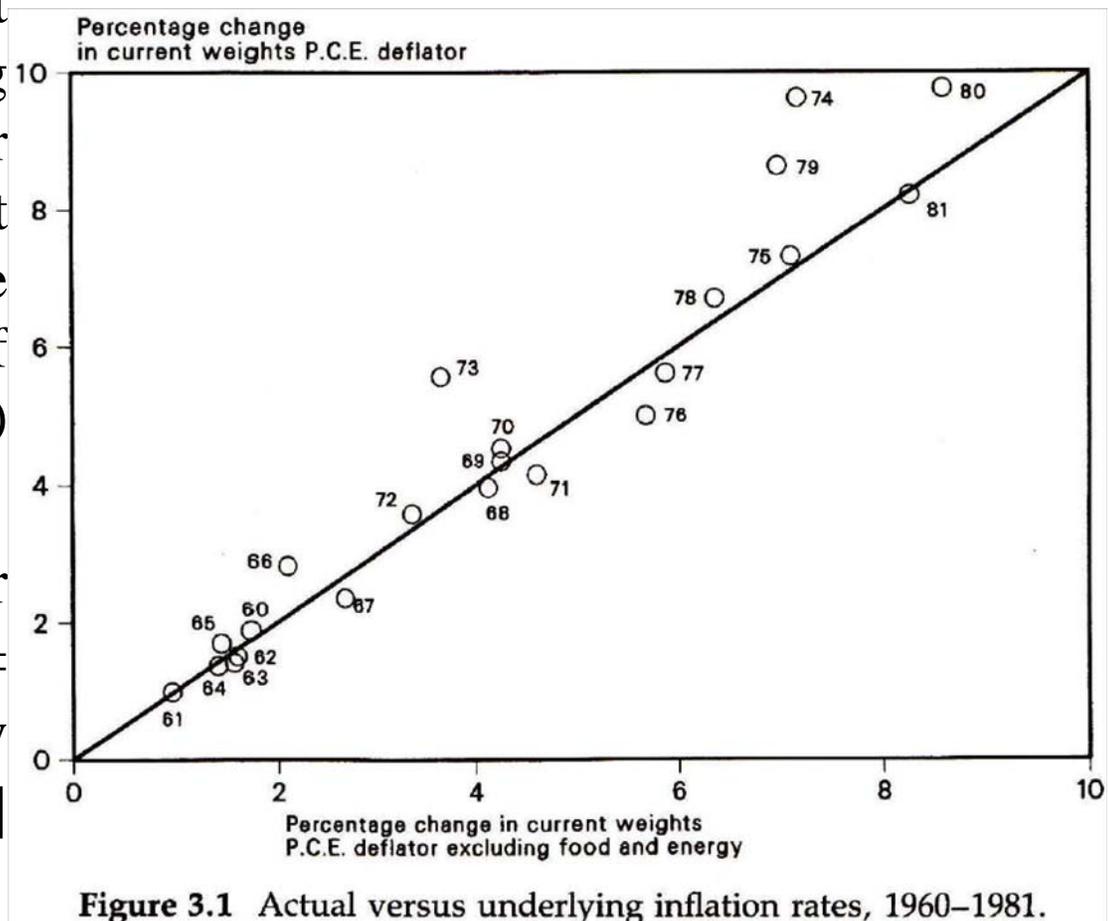
4. Because CPI overstates true INF (& more so true cost-of-living), and/but because built into so many contracts, it:

a. Fuels the “wage/price” spiral;

b. Increases living standards of those fully (or more) indexed to it (*e.g.*, SS recipients, unionized labor, labor w/ bargaining leverage) relative to those less or not (*eg*, disadvantaged labor, politically weak & unorganized)--*cet. par.*;

c. *N.b.:* Informal mech’s that keep others’ incomes rising w/ INF may compensate or more-than comp. [but cannot be so for *all* others because for full-index to overstate of true INF  $\Rightarrow$  some group(s) must be inflating slower]

5. Definition: *Core* or *underlying* INF = PCE–Food–Energy. [Why may want to separate them?]



## B. *Objective (measured actual not perceived) Costs of Inflation*

### 1. Inflation vs. Relative-Price Increases

- a. Rel. Prices: large aggregate & distributional effects; often confused w/ INF
- b. INF: little/no discernable agg. effects; some distrib effects at high-end income

### 2. *Distributional Impact of Inflation (& UE)*. Quintile-distribution data:

Table 3.2 The percentage distribution of money income among families by quintiles, five-year intervals, 1947–1980

Year	Lowest fifth	Second fifth	Third fifth	Fourth fifth	Highest fifth
1947	5.0	11.9	17.0	23.1	43.0
1952	4.9	12.3	17.4	23.4	41.6
1957	5.1	12.7	18.1	23.8	40.4
1962	5.0	12.1	17.6	24.0	41.3
1967	5.5	12.4	17.9	23.9	40.4
1972	5.4	11.9	17.5	23.9	41.4
1977	5.2	11.6	17.5	24.2	41.5
1980	5.1	11.6	17.5	24.3	41.6
Mean share (1947–1980)	5.1	12.1	17.6	23.8	41.3
Income range in 1980 (in thousands of 1980 dollars)	0–10.3	10.3–17.4	17.4–24.6	24.6–34.5	34.5–

Sources: U.S. Bureau of the Census, *Current Population Reports*, Series P-60, No. 123, table 13, June 1980; and No. 127, table 5, August 1981.

Notes: Families are households of two or more related people. Income includes employment income; interest, dividends, rents, and royalties; cash transfers from the government; private and government pension payments; and regular cash receipts from other private sources. Taxes are not deducted, and in-kind transfers are not included.

- a. **Effect of Infl [& UE] on quintile distribution of income: none to slight shift from top 40% to bottom 40%. (Notice this as opposed UE's clear & sizable effects.)**

**Table 3.3 The impact of inflation and unemployment fluctuations on the distribution of money income among families by quintiles, 1947–1980**

Variable	Lowest fifth	Second fifth	Third fifth	Fourth fifth	Highest fifth
Constant ( $a_0$ )	5.04** (0.200)	12.20** (0.149)	17.14** (0.128)	23.00 (0.140)	42.44** (0.370)
Unemployment rate ( $U$ )	-0.114** (0.027)	-0.104** (0.020)	-0.026 (0.017)	0.049* (0.019)	0.201** (0.051)
Inflation rate (DCPI)	0.024 (0.013)	0.013 (0.010)	-0.000016 (0.008)	-0.010 (0.009)	-0.017 (0.024)
Dummy 1958–1980 (Dum58)	0.440 (0.246)	1.09** (0.184)	0.968** (0.157)	0.322 (0.173)	-2.58** (0.457)
Time	0.030 (0.020)	0.073** (0.015)	0.094** (0.012)	0.062** (0.014)	-0.241** (0.036)
Dum58 × Time	-0.016 (0.024)	-0.105** (0.018)	-0.108** (0.015)	-0.045** (0.017)	0.250** (0.044)
$R^2$	0.74	0.82	0.78	0.83	0.78
Standard error of regression	0.180	0.135	0.115	0.126	0.334
Durbin-Watson	0.89	1.00	1.95	1.48	1.40

*Note:* Standard errors appear in parentheses.

- (1) doesn't matter whether one continuously adjusts for potentially differential infl rates among products purchased by different groups [see next page];
- (2) again, if anything, luxury-good inflation exceeds necessity inflation in most times; likewise infl rates of consumption bundles by income group [page after next].

**Table 3.4** Distribution of household expenditures between necessities and nonnecessities in the 1972–1973 Consumer Expenditure Survey for selected income classes (percent)

Type of expenditure	All households (N = 67,477 reporting)	Low income (0–19.3%)		Middle income (39.4–58.5%)		High income (85.8–100%)	
		<\$3000	\$3000–\$4999	\$8000–\$9999	\$10,000–\$11,999	\$20,000–\$24,999	> \$25,000
Necessities	37.3	55.2	52.5	41.9	38.3	31.3	29.0
Nonnecessities	62.7	44.8	47.5	58.1	61.7	68.7	71.0

Source: Computed by the author from Bureau of Labor Statistics, *Consumer Bulletin* 1992, 1978.

Notes: Household incomes are for 1972–1973; sample percentiles appear in parentheses. "Necessities" include food at home, utilities, clothing, and medical care. "Nonnecessities" include food away from home, educational expenses, personal care, tobacco, and entertainment.

**Table 3.5** Price indexes and inflation rates for necessity and nonnecessity components of the Consumer Price Index, 1967–1981

Year	Necessities		Nonnecessities	
	Index	Year-on-year inflation rate	Index	Year-on-year inflation rate
1967	1.000	—	1.000	—
1968	1.037	3.7%	1.043	4.3%
1969	1.086	4.8	1.095	5.0
1970	1.139	4.8	1.157	5.6
1971	1.186	4.1	1.210	4.6
1972	1.228	3.6	1.243	2.7
1973	1.330	8.3	1.290	3.9
1974	1.480	11.3	1.423	10.3
1975	1.600	8.1	1.563	9.8
1976	1.680	5.0	1.672	7.0
1977	1.797	7.0	1.777	6.2
1978	1.939	7.9	1.893	6.5
1979	2.112	9.0	2.096	10.7
1980	2.318	9.7	2.370	13.1
1981	2.522	8.8	2.611	10.2
Cumulative inflation (1967–1981)		152.2%		161.1%

Source: Computed by the author from Bureau of Labor Statistics data, based on the most recently available Consumer Expenditure Survey, for 1972–1973.

Notes: "Necessities" include food at home, rented shelter, fuel and utilities, clothing, and medical care. "Nonnecessities" include food away from home, alcohol, home ownership, household furnishings, transportation, educational expenses, personal care, tobacco, and entertainment.

Adjusting for differences in necessity vs. luxury [DEF] share of consumption bundle:  
Inflation averages slightly higher for luxuries.

Table 3.6 Consumer Price Indexes and inflation rates experienced by selected income classes, 1967–1981

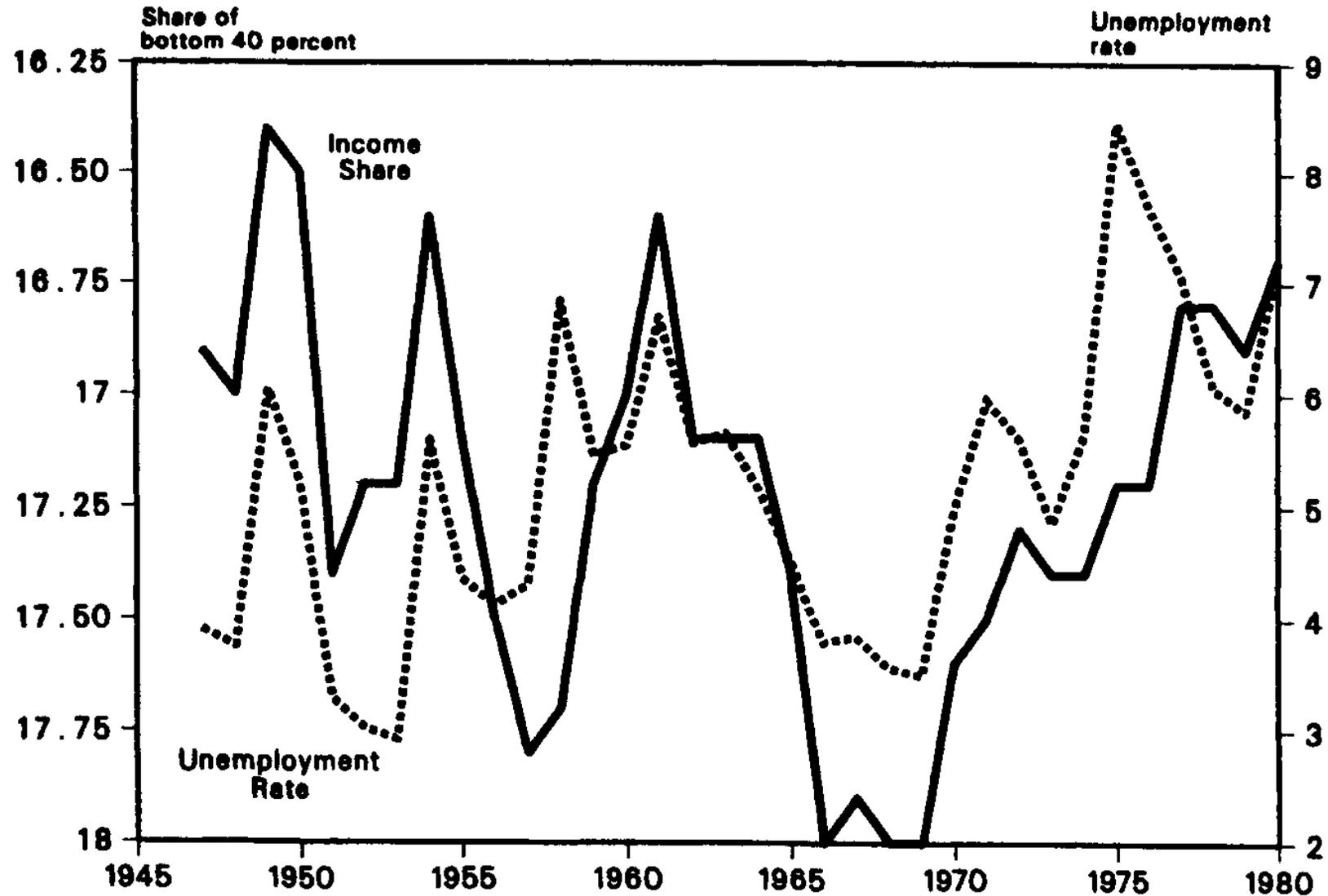
Year	Low income (0–19.3%)				Middle income (39.4–58.5%)				High income (85.8–100%)			
	<\$3000		\$3000–\$4999		\$8000–\$9999		\$10,000–11,999		\$20,000–24,999		>\$25,000	
	Index	Year-on-year inflation rate	Index	Year-on-year inflation rate	Index	Year-on-year inflation rate	Index	Year-on-year inflation rate	Index	Year-on-year inflation rate	Index	Year-on-year inflation rate
1967	1.000	—	1.000	—	1.000	—	1.000	—	1.000	—	1.000	—
1968	1.037	3.7	1.038	3.8	1.040	4.0	1.040	4.0	1.042	4.2	1.043	4.3
1969	1.085	4.6	1.087	4.7	1.090	4.8	1.090	4.8	1.095	5.0	1.097	5.1
1970	1.141	5.2	1.143	5.2	1.147	5.2	1.148	5.3	1.154	5.4	1.157	5.5
1971	1.191	4.4	1.193	4.4	1.197	4.4	1.198	4.4	1.205	4.4	1.209	4.5
1972	1.230	3.2	1.231	3.2	1.233	3.0	1.234	3.0	1.240	3.0	1.245	3.0
1973	1.306	6.2	1.306	6.1	1.303	5.7	1.302	5.5	1.306	5.3	1.308	5.1
1974	1.444	10.6	1.445	10.6	1.442	10.6	1.442	10.7	1.445	10.7	1.446	10.5
1975	1.571	8.8	1.563	8.9	1.572	9.1	1.574	9.1	1.580	9.3	1.580	9.3
1976	1.664	5.9	1.667	5.9	1.670	6.2	1.673	6.3	1.680	6.3	1.680	6.3
1977	1.774	6.6	1.776	6.5	1.779	6.5	1.782	6.5	1.788	6.5	1.788	6.4
1978	1.904	7.3	1.905	7.3	1.904	7.1	1.906	7.0	1.913	7.0	1.913	7.0
1979	2.090	9.8	2.092	9.8	2.095	10.0	2.099	10.1	2.107	10.1	2.105	10.0
1980	2.325	11.2	2.326	11.2	2.338	11.6	2.347	11.8	2.359	12.0	2.356	12.0
1981	2.546	9.5	2.545	9.4	2.562	9.6	2.574	9.7	2.588	9.7	2.585	9.7
Cumulative inflation (1967–1981)	154.6%		154.5%		156.2%		157.4%		158.8%		158.5%	

Source: Computed by the author from Bureau of Statistics data, based on the most recently available consumption bundles, for 1972–1973.

Notes: Household incomes are for 1972–1973; sample percentiles appear in parentheses.

Again, if anything, inflation slightly higher for consumption bundle of high-income than that of low-income consumers.

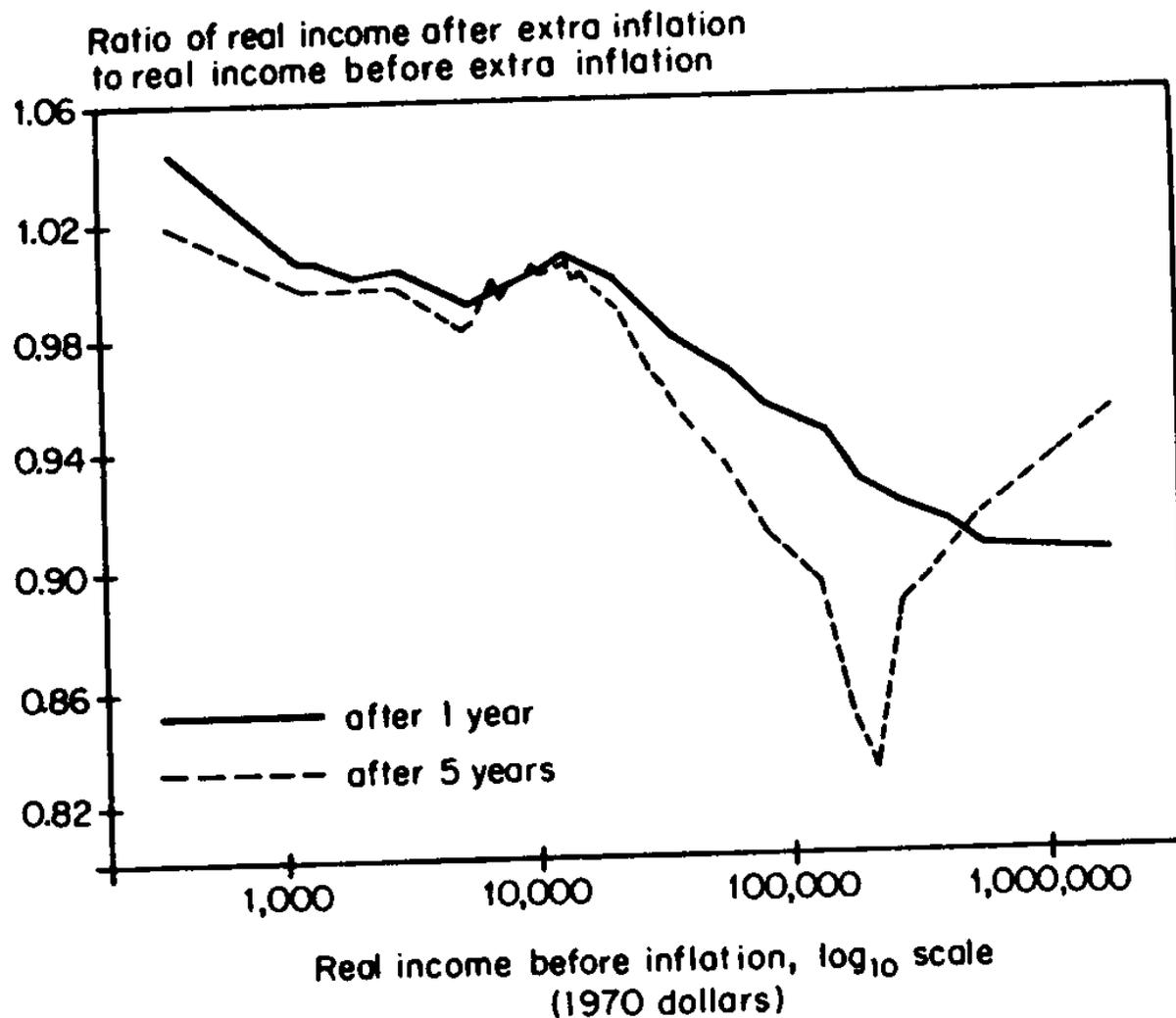
- b. UE [i.e., real boom/bust] on other hand: quite substantively & statistically significantly related to income distribution (see also Tab 3.3 above):



**Figure 3.2** Unemployment and the share of money income received by the bottom 40 percent of the family distribution, 1947–1980.

c. If distrib'l effect INF substantial anywhere: Simulations seem indicate INF cost sizable over time ( $\approx -15\%$  over 5-yr period) only for top 0.01% of income distribution:

distribution:



[Interestingly, simulations also suggest that very highest incomes better able adjust and mitigate real losses over medium term than “merely high” incomes.]

[..could be interesting (a paper?) explore whether / extent to which these aggregate & distributional relations have persisted or changed...]

**Figure 3.3** The impact on real income of a 2-percentage-point increase in the inflation rate. Source: J. Minarik, “The Size Distribution of Income during Inflation,” *Review of Income and Wealth* (December 1979), figure 4, reproduced

d. **Nor much/any *bracket creep*** [DEF] over years: even before automatic INF-adjustments to income-tax schedule, which means discretionary changes averaged  $>$  or  $\approx$  INF rate  $\Rightarrow$  INF seems avg real-income-tax-burden neutral.

(1)  **$\ln(\text{Tax Revenue}) = -10.9 + 1.017 \ln(\text{PQ}) + .432 \ln(\text{Q})$**  [p. 95]  
 [interpret...]

(2) Again, if anything, tendency is for INF to have  $\uparrow$  tax liabilities of upper end. [T 3.8]

Table 3.8 Changes in effective federal income tax rates with inflation, 1970–1979

Constant adjusted gross incomes		Percentile of 1970 income distribution (approximate)	Effective tax rate (percent) on 1970 adjusted gross income (actual)	Effective tax rate (percent) on 1979 adjusted gross income	
1970 dollars	1979 dollars			Under 1970 law (hypothetical)	Under 1979 law (actual)
5,000	9,500	28	9.8	13.2	6.5
10,000	19,000	60	13.3	13.7	12.6
25,000	47,500	96	15.3	21.2	19.7
50,000	95,000	99	21.8	29.9	29.0
100,000	190,000	—	30.9	38.3	37.9

Source: Richard A. Musgrave and Peggy E. Musgrave, *Public Finance in Theory and Practice*, 3rd ed. (New York: McGraw-Hill, 1980), table 17-9, p. 387. Income distribution percentiles are from Bureau of the Census, *Current Population Reports*, Series P-60, No. 80, October 4, 1971, table 19, p. 41 (two-person, husband-wife families).

Notes: Calculations are based on a joint return, with no dependents and with deductions in excess of the standard deduction amounting to 23 percent of adjusted gross income. Adjusted gross income is approximately equal to personal income plus employee Social Security contributions and capital gains less untaxed cash transfers and other income, indirect labor compensation, and other exclusions. 1979 income equals 190 percent of 1970 income, keeping real income constant over the period.

- e. **Factor distribution effects?** If adjustments labor pay lags capital return adjusts, then infl would worsen the “functional” distribution income  $\Rightarrow$  once again, if anything, slightly the opposite true. If anything, nominal payments to capital adjust more slowly than nominal payments to labor (compare cols 5&7).

3.7 Real income per capita growth rates, personal tax rates, the business cycle, and inflation by period, 1950–1981 (percent)

	Real personal disposable income per capita growth rate, $[\Delta \ln(\text{GYDPC}/\text{PU})] \cdot 100$ (1)	Personal taxes (including social insurance contributions) as a percentage of personal income, $[(\text{GPTX} + \text{GPSIN})/\text{GPY}] \cdot 100$ (2)	Personal taxes (including social insurance contributions) less transfers as a percentage of personal income less transfers, $[(\text{GPTX} + \text{GPSIN} - \text{GPT})/(\text{GPY} - \text{GPT})] \cdot 100$ (3)	GNP gap: percentage deviation of actual from natural real GNP, <sup>a</sup> $[\ln(\text{GNP72}/\text{RGNPPOT})] \cdot 100$ (4)	Labor share: compensation of employees as a percentage of domestic income of corporate business, $[(\text{GCOomp}/\text{GKY})] \cdot 100$ (5)	Shift in relative price of energy: energy price inflation rate less total consumer price inflation rate, <sup>b</sup> $(\Delta[\ln(\text{PU803}/\text{PU})]) \cdot 100$ (6)	Consumer Price Index inflation rate, $[\Delta(\ln \text{PU})] \cdot 100$ (7)
1954	2.15	12.7	7.7	1.39	78.0	0.03	2.42
1959	2.14	13.7	7.8	0.28	79.9	0.24	1.63
1964	2.41	14.9	7.9	-0.85	79.9	-0.67	1.26
1969	3.01	16.5	9.1	4.04	78.9	-1.39	3.33
1974	1.92	18.0	7.8	0.43	83.8	2.60	5.93
1979	1.29	18.5	5.9	-2.05	83.1	3.20	7.74
	-3.77	19.7	6.9	-3.12	85.1	14.9	12.7
	-0.15	20.3	7.5	-3.86		2.9	9.8

s: Computed from Citibank Economic Database unless otherwise indicated. Bracketed expressions give Citibank variable names.

natural real GNP, 1972 dollars, is from Robert G. Gordon, "Inflation, Flexible Exchange Rates and the Natural Rate of Unemployment," National Bureau of Economic Research, Discussion Paper No. 708, July 1981, plus ins.

<sup>a</sup> equal to PU821 for 1953–1956 and to PU for 1950–1952.

f. *In sum*: distributional effects small, anti- top-40% & pro bot-40% if any, & if large for anyone, it's anti- group around 0.01 percentile. This last because...

### 3. Impact on Corporate Profitability

a. Inflation has negative effect on *after-tax* profitability of business or *after-tax* return on capital, & therefore on *after-tax* stock returns. (Tables 3.9-3.10)

b. ⇒ negative relation b/w INF & stock returns seems to have operated via INF effect on *after-tax net-profitability* (& perhaps monetary responses to INF)

Table 3.9 Profit shares, rates of return, corporate tax rates, real stock prices, and the business cycle by period, 1950–1981

Time period	Pretax profit share (profits with inventory valuation and capital consumption adjustments plus net interest as percentage of corporate domestic income), [(GKJVA + GKINT)/ GKY] · 100 (1)	After-tax profit share (profits with inventory valuation and capital consumption adjustments plus net interest less taxes as percentage of corporate domestic income), [(GKJVA + GKINT - GPTAX)/GKY] · 100 (2)	Pretax rate of return (profits with inventory valuation and capital consumption adjustments plus net interest as percentage of net stock of fixed nonresidential private corporate capital, [(GKJVA + GKINT)/ K2] · 100 (3)	After-tax rate of return (profits with inventory valuation and capital consumption adjustments plus net interest less taxes as a percentage of net stock of fixed nonresidential private corporate capital, [(GKJVA + GKINT - GPTAX)/K2] · 100 (4)	Corporate tax rate (percent), [GPTAX/(GKJVA + GKINT)] · 100 (5)	Percent idle capacity in manufacturing, Federal Reserve Board Index, 100 - IPXCA (6)	Real stock prices (500 common stocks, 1967 = 100) FPS6US/PU (7)
1950–1954	22.0	9.3	19.7	8.3	57.8	15.3	33.2
1955–1959	20.1	9.5	16.9	8.0	52.8	17.3	60.8
1960–1964	20.0	10.7	18.0	9.7	46.7	18.4	80.4
1965–1969	21.1	12.3	19.8	11.5	42.0	11.8	99.4
1970–1974	16.2	8.8	13.1	7.1	45.8	17.5	81.9
1975–1979	16.9	9.5	12.6	7.1	43.7	19.1	57.4
1980	14.7	8.2	NA	NA	44.3	20.9	52.3
1981	15.2	9.6	NA	NA	36.9	21.6	51.1

Sources: Computed from Citibank Economic Data Base unless otherwise indicated. Bracketed expressions give Citibank variable names. K2 (net capital stock) is from John P. Musgrave, "Fixed Capital Stock in the U.S.: Revised Estimates," *Survey of Current Business* 61 (February 1981), 58.

Table 3.10 Response of corporate profitability and real stock prices to inflation and the business cycle, annual 1949-1979/1981

Variable	Pretax profit share (1)	After-tax profit share (2)	Pretax rate of return (3)	After-tax rate of return (4)	In real stock prices (5)
Constant	23.247** (1.726)	10.707** (1.447)	22.173** (2.991)	10.377** (2.586)	-0.755* (0.290)
<b>Inflation rate</b>					
$t$	0.017 (0.107)	-0.298** (0.093)	-0.002 (0.153)	-0.302* (0.140)	-0.013 (0.010)
$t - 1$	-0.0101 (0.120)	0.037 (0.118)	0.029 (0.138)	0.057 (0.162)	-0.005 (0.009)
<b>Percent idle capacity</b>					
$t$	-0.162** (0.056)	-0.080 (0.050)	-0.239** (0.065)	-0.120* (0.059)	
$t - 1$	-0.056 (0.078)	-0.141* (0.068)	-0.076 (0.097)	-0.140 (0.104)	
<b>Labor productivity, percentage rate of change</b> [ $\ln(\text{LOUTB}_t/\text{LOUTB}_{t-1}) \cdot 100$ ]					
$t$	0.519** (0.180)	0.396* (0.171)	0.597** (0.200)	0.377 (0.194)	
$t - 1$	0.160 (0.123)	0.115 (0.114)	0.243 (0.141)	0.149 (0.122)	
Trend (1948 = 1, 1981 = 34)	-0.123 (0.069)	0.147 (0.051)	-0.163 (0.133)	0.107 (0.081)	
<b>After-tax rate of return</b>					
$t$					0.045* (0.019)
$t - 1$					0.020 (0.019)
<b>GLS autoregressive coefficients</b>					
$\rho_1$	0.588** (0.199)	0.469* (0.202)	0.760** (0.190)	0.636* (0.302)	0.811** (0.050)
$\bar{R}^2$	0.861	0.659	0.870	0.735	0.928
Standard error of regression	1.016	0.912	1.243	1.024	0.101
Durbin-Watson	1.638	1.635	1.608	1.607	1.944

Notes: See earlier tables for sources and definitions of variables. Standard errors appear in parentheses.

\* Significant at 0.05 level, two-tail test.

\*\* Significant at 0.01 level, two-tail test.

(1) Consider re: 1990s: “...recipe for high after-tax corporate profitability & swiftly rising equity share-prices realized during 1960s was conjunction of brisk growth, little idle capacity, & moderate INF that did not undermine pro-investment tax policies legislated by Congress...” (p. 107) [Sound familiar? Consider financial dereg. & ↑ retirement shareholding from PE view...]

#### 4. Aggregate, Average Real Effects of Inflation:

##### a. No evidence INF *per se* ↓ gross savings rates or investment (Tables 3.12-13)

(1) odd b/c does change relative price of present & future consume, so thry’ly sh/could

(2) INF has two effects; evidence suggests they roughly cancel:

(a) income effect: price of future goods higher so must save more to have same real \$ later;

(b) substitution effect: price of present goods lower relative to future goods so ↑C, ↓S now.

##### b. Evidence INF shifts composition invest from residential to non-resid.: odd!

(1) Mortgage tax-deductible (at nom  $i$ -rates) but inv.-inc. inc-tax liable (nominal); so, again, thry ⇒ INF shifts incentives to res. construct. from non-res. cap-formation

**Table 3.11 Interest costs and yields (percent) at various inflation rates for households facing a marginal tax rate,  $\tau$  of 0.3**

Inflation rate, $\dot{p}$	Nominal interest cost/yield, $i = \dot{p} + 3\%$	Real net-of-tax interest cost/yield, $i(1 - \tau) - \dot{p}$
2.5	5.5	1.35
5	8	0.60
7.5	10.5	-0.15
10	13	-0.90

(2) apparently this has been offset by

- (a) tendency for mortgage borrowing to be rationed rather than continuing rise nominal rates
- (b) convention of fixed nominal payments means that real mortgage costs will be heavily front-loaded in high INF periods, so not spur construction.
- (c) relative energy-prices rising in the two major inflations  $\Rightarrow$  smaller homes bought.

c. **In short, no discernible aggregate costs either. Tables 3.12-3.13**

Table 3.12 Personal saving rates and private investment rates, by period, 1950–1981

Time period	Personal saving as a percentage of personal disposable income, (GPSAV/GYD) · 100 (1)	Gross real private nonfarm residential investment as a percentage of real GNP, (GIRU72/GNP72) · 100 (2)	Net real private nonfarm residential investment as a percentage of real GNP, ([net investment/ (GDIRU/100)]/GNP72) · 100 (3)	Gross real private nonresidential fixed investment as a percentage of real GNP, (GIN72/GNP72) · 100 (4)	Net real private nonresidential fixed investment as a percentage of real GNP, ([net investment/ (GDIN/100)]/GNP72) · 100 (5)
1950–1954	6.80	4.66	3.06	9.04	2.83
1955–1959	6.81	4.56	2.88	9.25	2.52
1960–1964	6.00	4.60	2.88	9.07	2.46
1965–1969	7.12	3.88	2.25	10.6	4.14
1970–1974	7.95	4.36	2.65	10.5	3.36
1975–1979	6.67	3.83	2.10	10.4	2.61
1980	5.82	3.01	1.27	11.3	3.00
1981	6.42	2.80	1.05	11.4	3.14

Sources: Computed from Citibank Economic Database, unless otherwise indicated. Bracketed expressions give Citibank variable names. Net investment data are from *Economic Report of the President*, February 1982 and February 1984, table B-16; and *Survey of Current Business* 62 (July 1982), table 5.2.

Table 3.13 Response of savings and investment rates to inflation and the business cycle, Annual 1949–1981

Variable	Personal savings as a percentage of disposable personal income (1)	Gross real private nonfarm residential investment as a percentage of real GNP (2)	Net real private nonfarm resi- dential invest- ment as a per- centage of real GNP (3)	Gross real private nonfarm nonresidential fixed investment as a per- centage of real GNP (4)	Net real private nonfarm non- residential fixed investment as a percentage of real GNP (5)	Ratio of net investment in nonfarm resi- dential capital to net investment in plants and equipment [(column 3/ column 5) · 100] (6)
Constant	6.670** (0.356)	4.796** (0.344)	3.137** (0.352)	8.227** (0.135)	2.041** (0.131)	136.0** (8.46)
Inflation rate						
<i>t</i>	0.034 (0.067)	-0.083* (0.034)	-0.084* (0.034)	0.073* (0.027)	0.028 (0.020)	-5.36** (1.64)
<i>t</i> - 1	0.013 (0.069)	-0.102** (0.030)	-0.099** (0.030)	0.037 (0.026)	-0.012 (0.022)	-1.68 (1.48)
Percentage GNP gap						
<i>t</i>	-0.023 (0.076)	0.031 (0.030)	0.051 (0.029)	0.148** (0.021)	0.228** (0.017)	-6.00** (1.45)
<i>t</i> - 1	0.122 (0.072)	-0.093** (0.029)	-0.094** (0.029)	0.056* (0.021)	0.080** (0.017)	-3.82* (1.39)
Trend (1948 = 1, 1981 = 34)		0.0086 (0.021)	0.0064 (0.021)	0.063** (0.012)	0.040** (0.010)	-0.75 (0.63)
GLS autoregres- sive coefficients						
ρ <sub>1</sub>	0.350 (0.192)	0.574** (0.196)	0.585** (0.198)	0.600** (0.139)	0.640** (0.124)	0.491* (0.20)
ρ <sub>2</sub>				-0.499** (0.107)	-0.362** (0.089)	-0.353* (0.14)
R <sup>2</sup>	0.257	0.766	0.784	0.933	0.948	0.852
Standard error of regression	0.790	0.317	0.313	0.230	0.171	14.1
Durbin-Watson	1.765	1.725	1.765	1.306	1.749	1.83

Notes: See earlier tables for sources and definitions of variables. Standard errors appear in parentheses. Percentage GNP gap is positive during expansions, negative during contractions.

## C. Summary:

1. (Moderate) INF seems to have little aggregate or distributional costs,
  - a. [U.S. experience <15% inflation. Clear evidence very high & hyper-inflation (>25% & >100%) costly & extremely costly in real + distributional terms.]
  - b. What little effects emerge seem on net to hurt higher-end of inc. distrib. relative to lower, perhaps appreciably so only for small % near quite-high end.
  - c. More notable effects cap/asset-holders v. labor interests via *after-tax* returns
  - d. ⇒ puzzle as to why population as whole weighs INF so heavily.
2. *True* costs of INF, according to Hibbs, are those associated w/ policy-maker reactions to it: Aiming [too aggressively in Hibbs' view] to reduce INF, 'policymakers have induced or abetted every postwar contraction.'
  - (1) ⇒ Question: what explains different degree to which policymakers opted to stifle real economy to tackle inflation? Hibbs answer: a major key is partisanship of those policymakers & differential relative cost real v nominal bads for core constituencies
  - (2) Along way, will need address how so many misunderstand impact of INF. Hibbs & our answer: a major key is confusion of relative-price increases (real), *price of stuff I buy*, w/ agg-price-level increases (nominal), *all prices (incl. stuff I sell)*. E.g., oil-price shocks real, also associated with (contributed to) average-price inflation.

## D. From this view, *Hibbs' Brief History of Postwar US INF*:

1. Core INF about 1.5% in early 60s; took 3 big upward jumps since until early 80s; then plummeted back [fluct's in lower range, & trend ↓, since]

2. LBJ 1965-68:

a. Vietnam + Great Society + Little or No Tax Increase

(1) ⇒ Deficits (↑ Debt) & Inflation, and money-supply growth was fully supportive.

(2) ⇒ Real economic boom.

b. By early 1969, UE was 1.5% pts below (estimated) “natural rate” (NAIRU)

(1) ⇒ underlying inflation had risen to 4%

(2) ⇒ LBJ finally eased off a bit, introducing a 10% income-tax surcharge (↑ T ⇒ ↓ G-T).

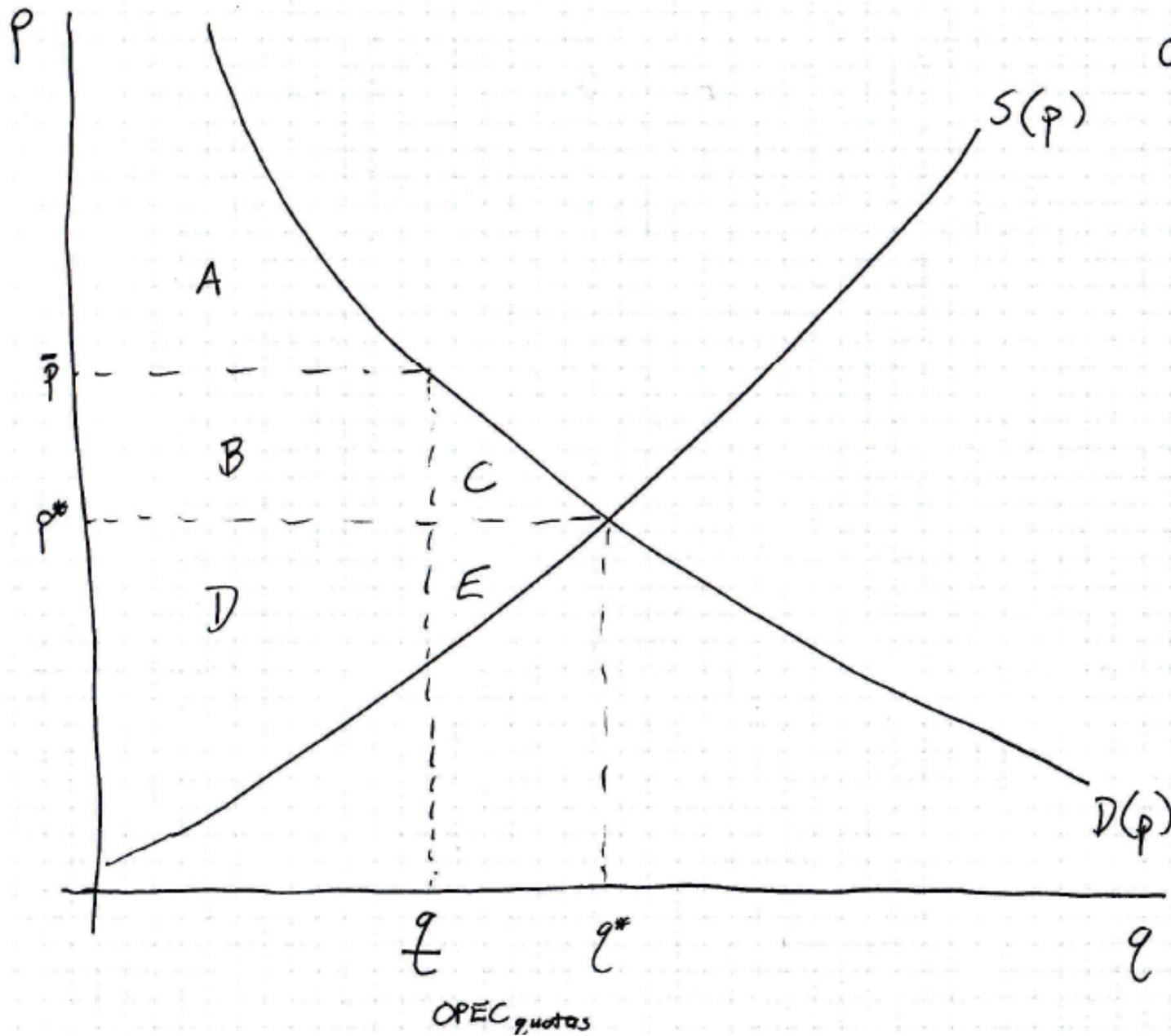
3. RMN I 1969-72:

a. “Standard conservative deflation”: Reduce deficit by 2%; Burns (Nixon's appointed Fed Chair) cut real money-growth first to .5% then -2%

b. ⇒ 1970-71 recession: UE rose to 6%; Only .75% above natural rate, so not much anti-inflation achieved in the early 70s

⇒ **Postwar Generality: Each 1% UE > ‘natural rate’ for 1 yr ⇒ .5% INF ↓. (Phillips)**

- c. In August 1971, Nixon & Burns reverse tack (we've heard this story in Tufte)
  - (1) 8/71 wage & price restraints imposed (only time in US history)
  - (2) "Gold Window" closed August 1971
  - (3) then goes for pre-election stimulus like never before [these big numbers at time:]
    - (a) 1.5% deficit in '71, then 1.7% in '72;
    - (b) Real money-supply growth of 2.4% & 3.7%.
  - (4) ⇒ boom, & then INF as price controls lifted [after elec. of course: late/early 73/74]
- 4. Then food-price shocks in late/early '72/73, followed by OPEC I in 10/73
  - a. ⇒ massive redistribution global wealth from consumers food (non-agricultural sector) & energy (US) to their producers (agr. sector, & OPEC) (see next)
  - b. = **relative  $p$  shock**: one key to INF political impact: how/why folk were/are confused by this [see Scheve on Oil Crises & national monetary illusion...]



FREE TRADE SURPLUS/WELFARE:

Consumer:  $A+B+C$

Producer:  $D+E$   
 eqbm:  $(p^*, q^*)$

OPEC QUOTAS:

Consumer:  $A$   
 ( $B+C$  poorer)

Producer:  $B+D$   
 ( $B-E$  richer)

eqbm:  $(\bar{p}, q)$

(World, deadweight loss:  $C+E$ )

(And, actually, demand for oil rather inelastic (steep  $D$  curve), esp. in short run, so  $B$  large)

## 5. GRF (Aug.) 1974-76:

### a. “Whip Inflation Now (WIN)”:

(1) Deficit cut 1% of GDP;

(2) Burns more than in-line monetary pol: real  $M^s$  growth -5.6% in '74 & -4.2% in '75.

### b. “Essentially same type ‘policy blunder’ made in early stages Grt Depression”:

(1) Problem = adverse relative-price shock on imported supply-item; fiscal & monetary contraction will predictably exacerbate unavoidably associated real losses. It did:

(a)  $\Rightarrow$  (then) worst recession since Grt Dep: UE to 8.5% & didn't come back down past 7.7%;

(b)  $\Rightarrow$  this was 2.5% over est'd NAIRU, so inflation did decelerate by 1.5% to less than 6%.

(2) GRF eases some as elect nears, but UE still all-time high: INF (partly) *whipped*, but

(3) Pol-econ issue that nothing domestic policy could do about real-price shock but decide who pays its price. Ford explicitly chose UE sufferers over INF:

(a) “UE affects 10% of population; INF affects all. [So] Whip Inflation Now.”

## 6. JEC 1977-80:

- a. Completely diff. set constituencies,  $\therefore$  comp'ly diff. set econ priorities. Early:
  - (1) Real money-growth +1.1% in '77, deficit +2%;
  - (2)  $\Rightarrow$  UE fell 2% from end of '76 to beginning of '79.
  - (3) Still above NAIRU, so inflation remained stable despite the stimulus & UE decline
- b. Beef-price  $\uparrow$  (a relative-price  $\uparrow$ ) (“Where’s the Beef?” ads) & CPI creeps  $\uparrow$  (general) in response, JEC began to ease accelerator some, then OPEC II hit:
  - (1) Oil prices  $\uparrow$  \$15 $\rightarrow$ \$35,  $\Rightarrow$  supply-induced initially relative, then general, INF...
  - (2) Carter, presumably to reassure fin. mrkts, had named Paul Volcker Fed Chair ('78)
    - (a) Volcker  $\uparrow$  discount rate (rare-ish act) twice in '78-'79, 1% (*large* amount) each time.
    - (b) No monetary accomm.: -3% real money-growth slow in '79, unprecedented -6.5% '80.
  - (3) Again, the results were predictable:
    - (a) domestic policy couldn't do anything about lost domestic income due to oil-price shock
    - (b) strong monetary anti-inf. work to stop gen. infl., but it works by creating recession & UE
    - (c)  $\Rightarrow$  Carter faced electorate with UE rising, inflation high, & growth falling  $\Rightarrow$  He lost.

7. RWR I 1981-84: (H. reserves thorough discussion of Reagan I for concl.)
  - a. Fiscal Deficits:
    - (1) Defense ↑ to replace soc spend (*winning Cold War* replaces *achieving Grt Society*)
    - (2) Tax cuts, esp. tax cuts on businesses & on marginal tax-rate at high end income dist
    - (3) **Supposed to pay for itself (Laffer Curve); didn't ("laughable [interp. of] curve"?)**
      - (a) [Elab. at board if time & inclination; also appears in notes for ch.9]
  - b. Monetary Contraction: great Volcker deflation allowed/continued because...
    - (1) RWR, constituency, & advisers ideologically & 'self-interestedly' committed to it;
    - (2) **New econ theory suggested: if deflation credible & announced, no real costs**
      - (a) [Elab. at board if time & inclination; also appears in notes for ch.9]
  - c. ⇒ '81-'82 (then) greatest recession since Great Depression. After 4 yrs tight money & 3 of postwar record UE, INF finally subsided by 1984. UE doesn't return to pre-recession levels for 6+ years.
8. N.b., after each inflationary episode deflated, INF did not return back to previous level but remained point or two higher. This also among costs anti-inflation hawks will reference.