Consumer Spending and Housing

Lecture 9

Central Issues

- The Role of Income
  - Short- vs. Long-run MPC and APC
- The Role of Wealth
- Motivations to Save
  - Roles of Expectations and Reactions to Actual or Anticipated Policies
  - Responses to Interest Rates, Taxes

Short- vs. Long-run MPC and APC

- **Average Propensity to Consume:**
  - **Simply: Consumer Spending/ Disposable Income**
- **Marginal Propensity to Consume:**
  - **for any specific time interval = Change in Spending / Change in Income**
- **In the "Long-Run", both APC and MPC appear to be close to 95% for the US in the postwar period**
- **The LR Elasticity (ratio of MPC to APC) is thus 1.0**

Short- vs. Long-run MPC and APC, and the Role of Wealth

- **Life Cycle Hypothesis:**
  - **C= f (Labor Income, Wealth)**
- **Age distribution of population important**
- **So are factors determining need to save:**
  - **ease of financing for large purchases**
  - **"free" retirement income from employer or government**
  - **worry about health and life expectancy**
  - **desires for bequests**

Short- vs. Long-run MPC and APC, and the Role of Wealth

- Permanent Income Hypothesis:
  - C= f (Current and Expected Income)
  - Both labor and capital income are considered
- Age distribution of population still important because the annuity value differs
- So are other factors determining need to save

Short- vs. Long-run MPC and APC, and the Role of Wealth

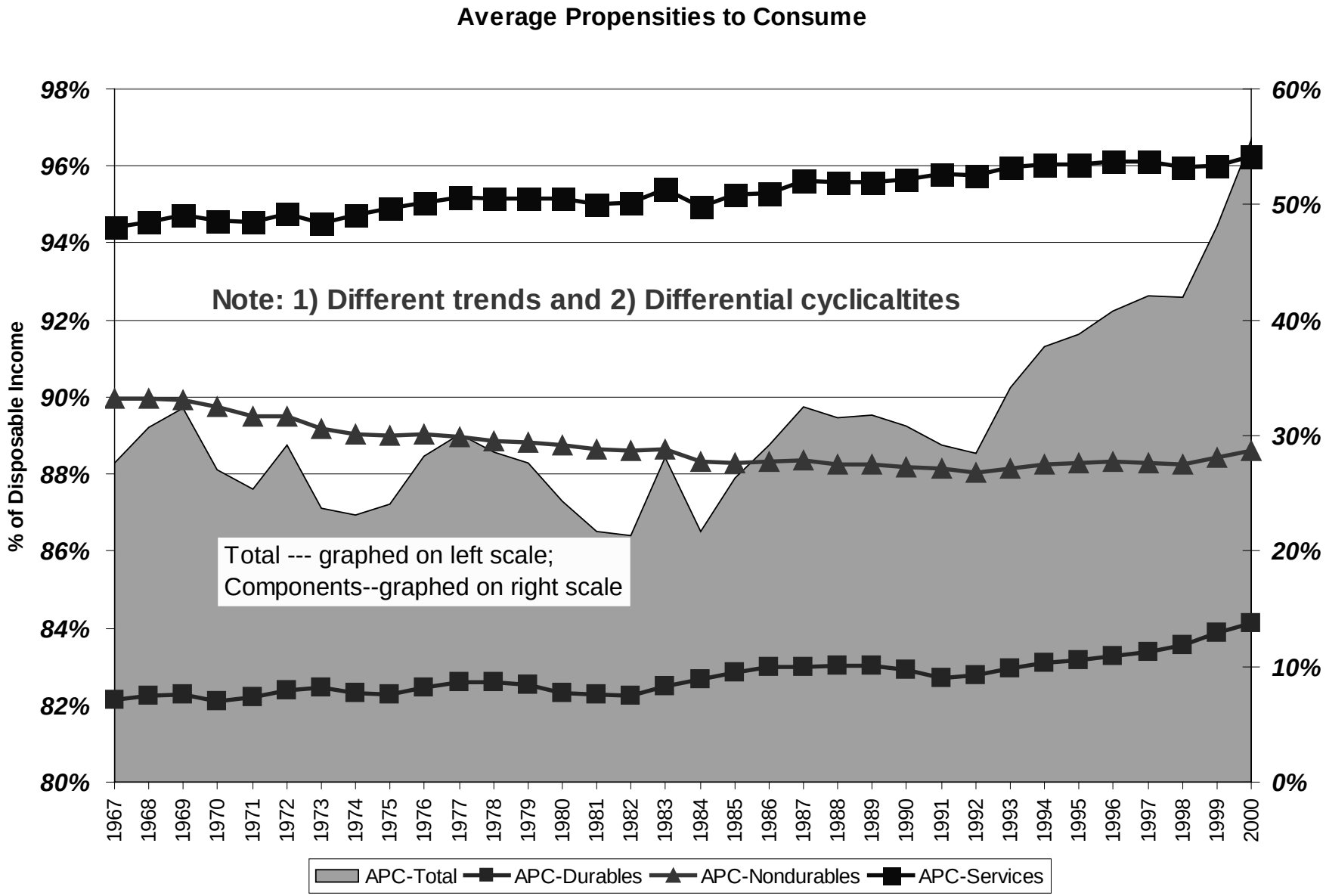
- **Life Cycle and Permanent Income Hypotheses both:**
  - **recognize current choices reflect thinking about lifetime income and spending**
  - **predict short-run MPC < APC**
  - **expect dissaving in retirement years**

The Basic Math

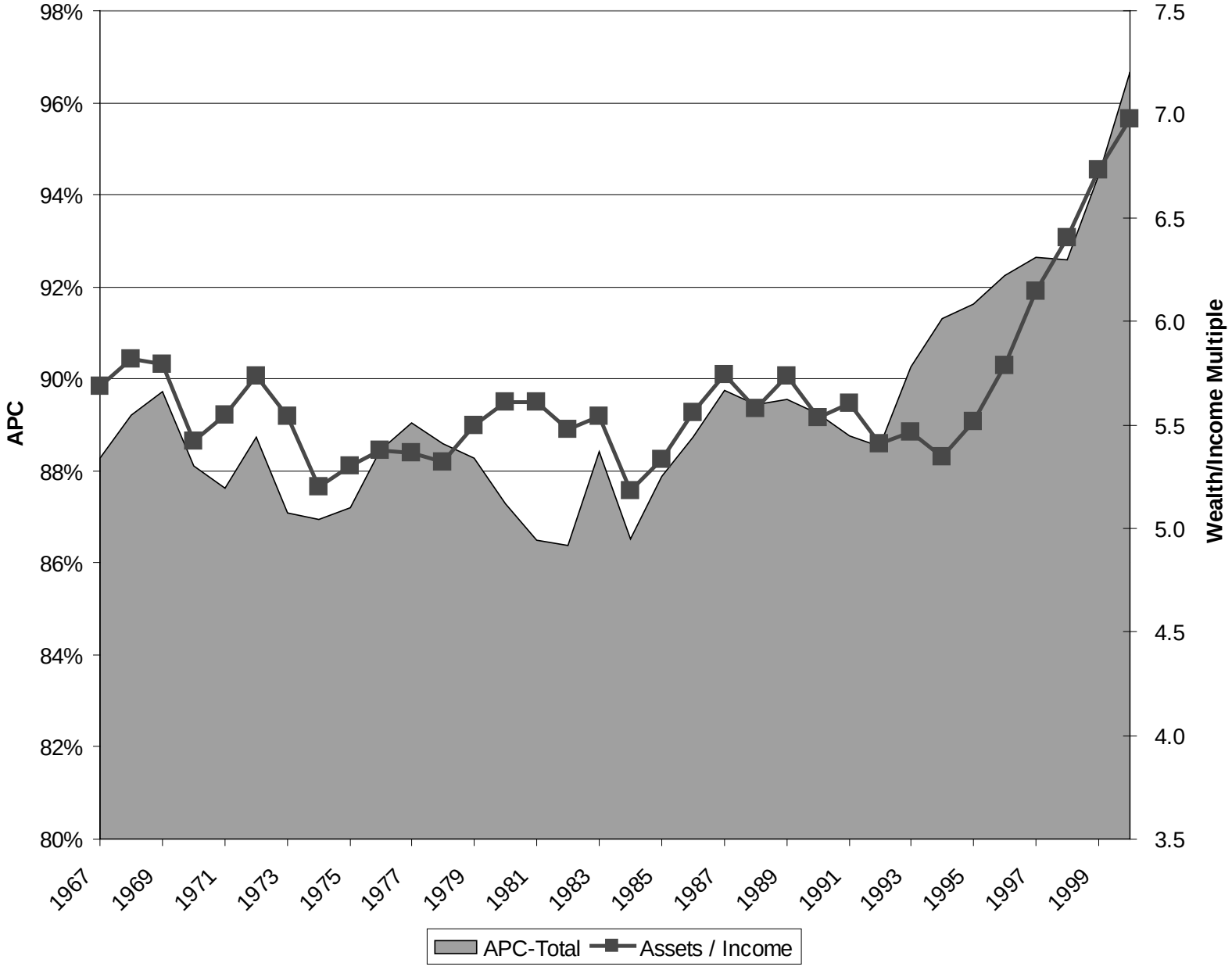
- C= a + b1 * YD + b2 * YD\1 + d * W
- short-run MPC = b1
- short-run APC = C / YD
- if “long-run” implies YD = YD\1 and W=k*YD (that is, wealth is proportionate to income)
  - C= a + (b1+b2+d*k) * YD
  - MPC= (b1+b2+d*k)
  - APC=C/YD= MPC + a / YD
  - so if “autonomous consumption (a)” is small, the long-run MPC=APC

The Basic Math

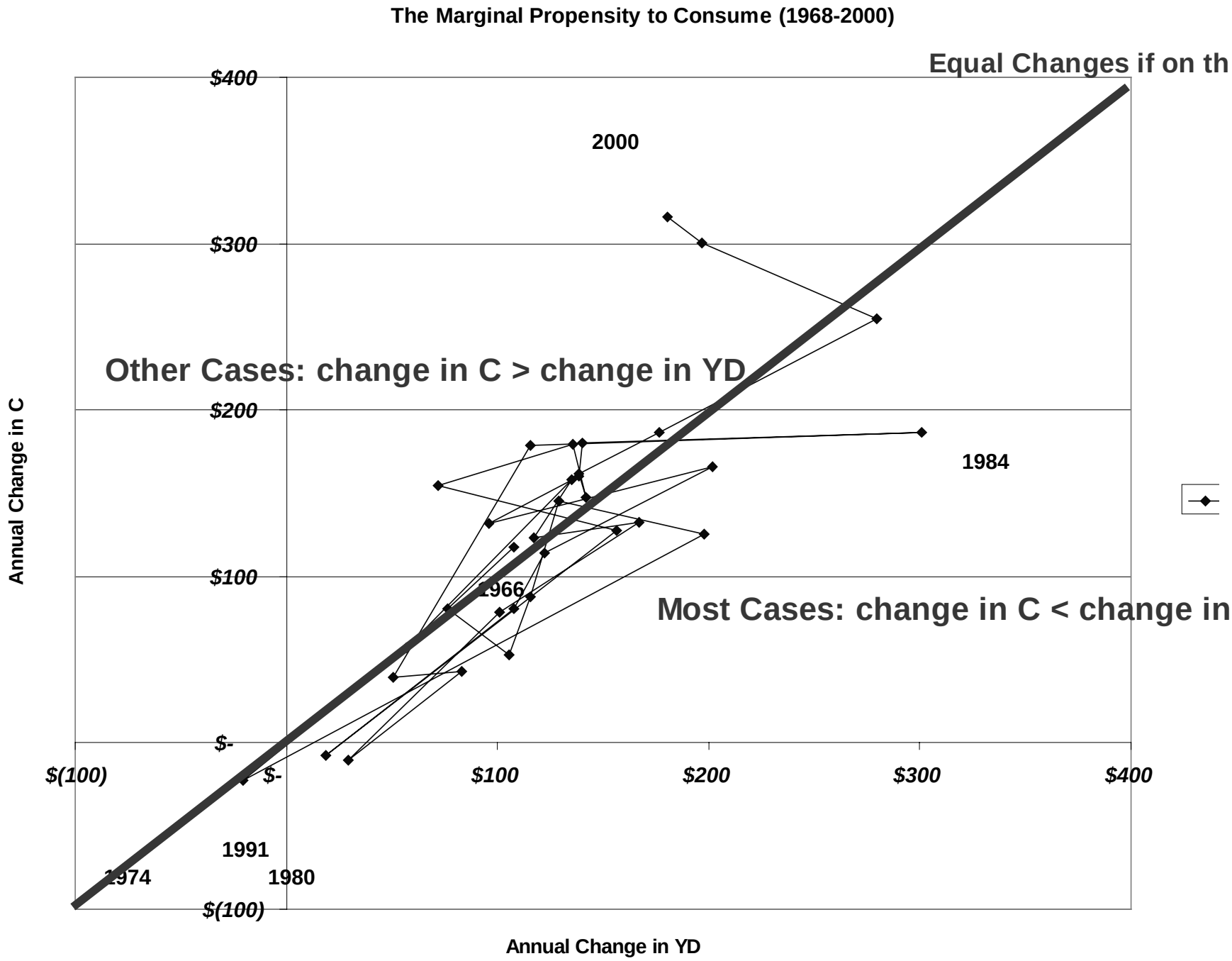
- **Elasticity= % change C / % change YD**
  - **= [(C-C\1)/C\1] / [(YD-YD\1)/YD\1]**
  - **=[(C-C\1)/(YD-YD\1)] / [C\1 / YD\1]**
  - **= MPC / APC**
- **in long run, elas.=MPC / (MPC + a/YD)**
  - **= approximately 1**


Average Propensities to Consume
% of Disposable Income
98%
96%
94%
92%
90%
88%
86%
84%
82%
80%
60%
50%
40%
30%
20%
10%
0%
Note: 1) Different trends and 2) Differential cyclicaltites
Total --- graphed on left scale;
Components--graphed on right scale
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
APC-Total
APC-Durables
APC-Nondurables
APC-Services

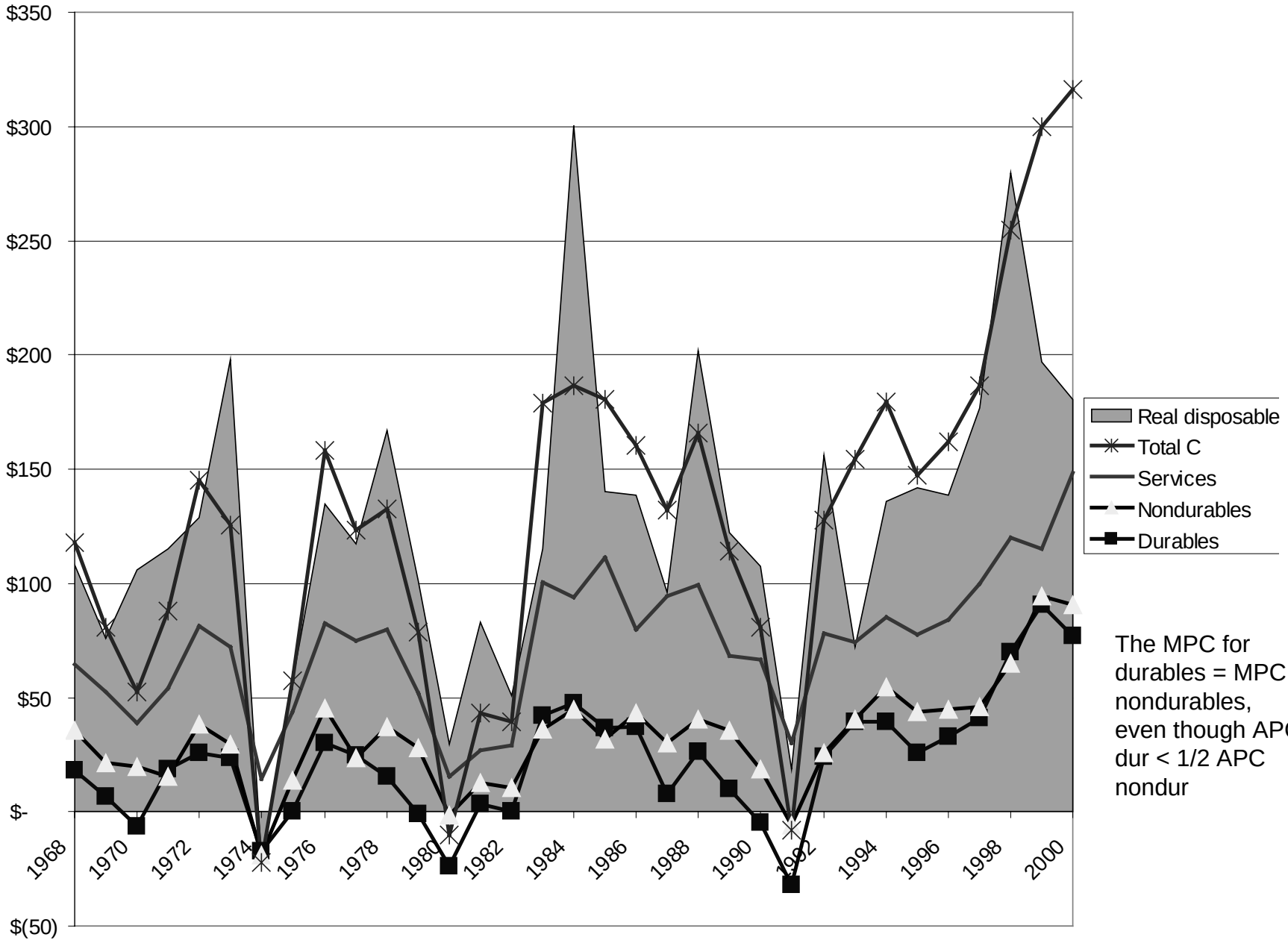
Obvious Wealth Efffects:
APC charted versus Wealth/Income Ratio



1991


The Marginal Propensity to Consume (1968-2000)
Equal Changes if on th
$400
2000
$300
Other Cases: change in C > change in YD
$200
1984
Annual Change in C
$100
1966
Most Cases: change in C < change in
$-
$(100)
$-
$100
$200
$300
$400
1991
1974
1980
$(100)
Annual Change in YD

MPCs : Annual Changes in C and YD



The MPC for durables = MPC nondurables, even though APC dur < 1/2 APC nondur

Dependent Variable: C96C-C96C(-1)	Change in Real Total C					
Method: Least Squares						
Date: 03/12/01 Time: 17:30						
Sample(adjusted): 1970 2000						
	Including Wealth Effects			Excluding Wealth Effects		
Variable	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	(17.46)	26.84	(0.65)	19.67	20.99	0.94
Real Income Change (Wage and Capital)	0.48	0.11	4.24	0.63	0.13	4.76
Real Income Change, Prior Year	0.11	0.11	1.00	0.33	0.13	2.64
Bond rate change	(6.27)	7.41	(0.84)	(1.33)	8.26	(0.16)
Bond rate change, prior year	(6.24)	6.83	(0.91)	(6.87)	8.64	(0.80)
Real Wealth change	0.030	0.01	2.35			
Real Wealth change, prior year	0.018	0.01	1.30			
R-squared	0.80			0.66		
Adjusted R-squared	0.73			0.60		
S.E. of regression	41.46			50.04		
Mean dependent var	130.01			130.01		

Note estimated MPC's:

- .5 to .6 current year, up to .96 both years
- lower coefficients with wealth accounted for independently

Note reaction to interest rates

Dependent Variable: CD96C-CD96C(-1)	Change in Real Durable C					
Method: Least Squares						
Date: 03/12/01 Time: 17:30						
Sample(adjusted): 1970 2000						
	Including Wealth Effects			Excluding Wealth Effects		
Variable	Coefficient	Std. Error	t-Statistic	Coefficient	Std. Error	t-Statistic
C	(26.25)	11.02	(2.38)	(15.31)	7.42	(2.06)
Real Income Change (Wage and Capital)	0.17	0.04	4.51	0.22	0.05	4.77
Real Income Change, Prior Year	0.04	0.04	1.18	0.11	0.04	2.43
Bond rate change	(3.33)	2.45	(1.36)	(1.19)	2.92	(0.41)
Bond rate change, prior year	(1.95)	2.27	(0.86)	(1.08)	3.05	(0.35)
Real Wealth change	0.009	0.00	1.97			
Real Wealth change, prior year	0.006	0.00	1.33			
R-squared	0.80			0.64		
Adjusted R-squared	0.74			0.58		
S.E. of regression	14.27			17.69		
Mean dependent var	22.72			22.72		

Note estimated MPC's for durables:

- .2 current year, up to .3 both years
- lower coefficients with wealth accounted for independently

Note reaction to interest rates

Dependent Variable: LOG(CONS96C)--Real C			
Method: Least Squares			
Date: 03/02/01 Time: 12:30			
Sample(adjusted): 1961 2000			
Included observations: 40 after adjusting endpoints			
Variable	**Coefficient**	**Std. Error**	**t-Statistic**
C	**(1.25)**	**0.17**	**(7.36)**
LOG(WSD/PCWC)--Real Wage Income	**0.51**	**0.23**	**2.25**
LOG(WSD(-1)/PCWC(-1))--Real Wage Income, Prior Year	**0.55**	**0.27**	**2.04**
LOG(HHNETW96C(-1)+HHNETW96C(-2))--- Real Household Net Worth, Prior Average	**0.10**	**0.11**	**0.93**
@PCH(CPI)	**(0.69)**	**0.25**	**(2.77)**
R-squared	**0.996**		
Adjusted R-squared	**0.995**		
S.E. of regression	**0.028**		
Mean dependent var		**8.080**	
S.D. dependent var		**0.392**	

Log-Log regression: long-run labor income elasticity approx. =1

Extensions and Applications

- Expectation formation:
  - Barro theory intriguing but wrong
- Note empirical tests show consumers don't judge the nature of the tax change
- Consider how lagged responses create a multiplier that changes over time
- Consider how to "multiplier" depends on monetary policies, etc.

Dependent Variable: CD96C-CD96C(-1)	Change in Real Durable C		
Method: Least Squares			
Date: 03/12/01 Time: 17:30			
Sample(adjusted): 1970 2000			
	Including Wealth Effects		
Variable	Coefficient	Std. Error	t-Statistic
C	(26.25)	11.02	(2.38)
Real Disp.Inc. Change (Wage and Capital)	0.17	0.04	4.51
Real Disp. Income Change, Prior Year	0.04	0.04	1.18
Bond rate change	(3.33)	2.45	(1.36)
Bond rate change, prior year	(1.95)	2.27	(0.86)
Real Wealth change	0.009	0.00	1.97
Real Wealth change, prior year	0.006	0.00	1.33
Real Taxes Paid, Prior Year	(0.00)	0.16	(0.02)
Real Taxes Paid	(0.06)	0.13	(0.47)
R-squared	0.80		
Adjusted R-squared	0.72		
S.E. of regression	14.80		

Same equation, but with Taxes Paid as Additional Variables: No significant significantly different effect from changes in disposable income due to changes in wages vs taxes if the disposable income result is the same

Housing Demand and Supply

- The spending decision should follow the same concepts discussed for consumer behavior in general
- One key difference is the “price” because a long-lived asset is purchased or rented
- Another distinguishing factor is the flexibility of timing: a pool of vacant units is always available, therefore price today vs. tomorrow is critical

Housing Demand and Supply

- **The Price of a New Home=**
  - **Mortgage payment**
    - »=rate after tax * price of home
  - **Operating Costs & Taxes (Permanent Consumption Obligation)**
  - **Expected Depreciation/Appreciation**