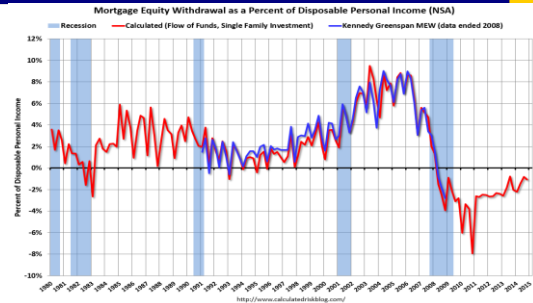## Econ 113: April 21, 2015

- Subprime Lending Crisis, 2000s, continued
  - Housing Boom & Bust
- HELOCs and consumer spending (Mian & Sufi)
- Demographic Changes
- Women in the Labor Force
- The Pill
- Marriage Decisions

Last Class is Thursday April 30
Final is Thursday May 14, 8:00 am, 1 LeConte

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

How much use of home equity? LOTS

Mortgage Equity Withdrawal as a Percent of Disposable Personal Income (NSA)

MEW = Borrowing against equity (HELOCs) – principal repayments – debt cancellation. If principal repayments + debt cancellation > borrowing, MEW<0.

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

There are real effects of financial changes

- Equity in house = Current price of comparable homes – outstanding mortgage balance
- Home Equity Line of Credit (HELOC)
  - Bank gives homeowner "line of credit"
  - Can use money for whatever you want, whenever you want
  - Repay eventually but often interest only for first 10 years
- Mian and Sufi article
  - County, zip-code, or MSA level data to study effect of HELOCs
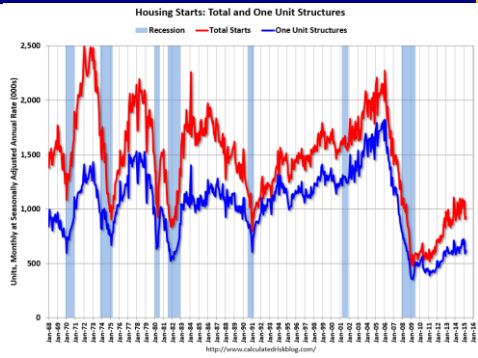 - To protect borrower identity, each observation = 5 borrowers

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

Boom in borrowing

Figure 1
U.S household debt

Debt-to-assets ratio (right axis)

Debt-to-income ratio (left axis)

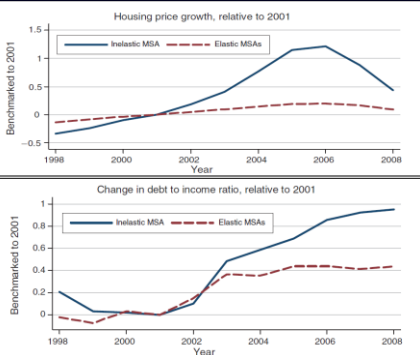1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

1

Boom in Construction

Price increase depends on slope of S
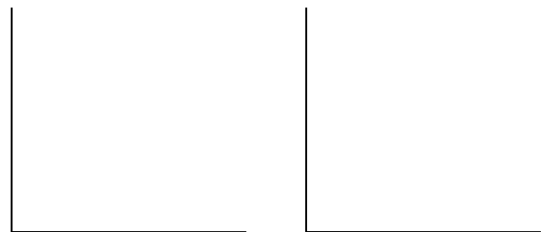
Higher prices, higher $\frac{debt}{income}$

People borrowed against home equity

- Mian & Sufi estimate (Table 3) that homeowners borrowed 25 cents of every dollar of additional home equity value
  - Example: Home price goes up by $100,000
  - Homeowner borrows an additional $25,000
- More borrowing by people who already do a lot of credit-financed spending
 - Those with high credit card use
  - and low FICO scores

Mian & Sufi, Table 3

Table 1. Effect of House Prices on Household Borrowing for 1997 Homeowners

	Change in total debt, 2002-2006 (thousands $)			
ΔHome Value, 2002-06	0.245***	0.271***	0.253***	0.246***
	(0.050)	(0.056)	(0.056)	(0.065)
Median home value, 2002	0.020	-0.014	-0.010	-0.076
	(0.039)	(0.044)	(0.037)	(0.079)
Controls for credit score, HH income, debt/income, age		✔		
Male (0/1)		✔	✔	✔
Individual dummy variables			✔	✔
Census & Income variables				✔
Observations (n)	13,328	13,199	13,199	12,497

Notes: Unit of observation = groups of 5-9 reasonably homogeneous homeowners. Standard errors clustered at MSA level.
***Significant at 1% level. **Significant at 5% level. *Significant at 1% level.
Source: Mian & Sufi, "House Prices, Home Equity-Based Borrowing, and the US Household Leverage Crisis," *AER* 101 (2132-56). Table 3.

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

Heavy credit users use HELOCs
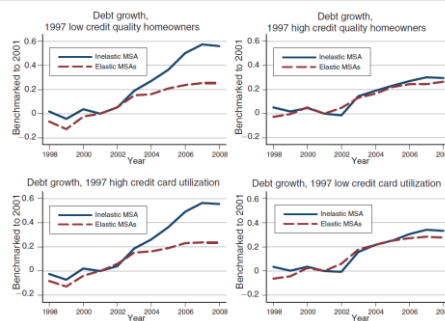
Low & High credit quality are bottom & top quartile of FICO; Low/High credit card utilization is also end quartiles

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

And they used that $ to buy stuff

- Not a direct conclusion, but by process of elimination
- Table 6 tells us . . .
  - Panel A: House Price (HP) growth not determining likelihood of moving to a new zip code
  - Panel B: House Price (HP) growth not associated with buying mortgage-financed investment properties
  - Panel C: House Price (HP) growth not associated with paying off credit card balances
- What else is possible?
  - Home improvements (recorded in Residential Investment) & Consumption spending!

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

Mian & Sufi, Table 6

Table 2. What Did People Do With Borrowed Money?

	Coefficient on ΔHome Price (HP), 2002-06			
	Probability of Moving	Change in # of mortgages	Credit card balance	Credit card balance / income
Actual HP growth	0.046	-0.011		
	(0.036)	(0.021)		
Instrumented HP growth♪	0.010	-0.109**	0.084	0.017
	(0.076)	(0.047)	(0.143)	(0.022)
Observations (n)	68 13,196	12,772 12,772	3,233	3,233

Notes: ♪ instrumented house price (HP) growth uses MSA housing supply inelasticity as an instrument for house price growth. ***Significant at 1% level. **Significant at 5% level. *Significant at 1% level.
For credit card analysis (n=3,233), sample restricted to those in top quartile of credit card utilization distribution, 1997.
Source: Mian & Sufi, "House Prices, Home Equity-Based Borrowing, and the US Household Leverage Crisis," *AER* 101 (2132-56). Table 6.

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   **HELOCs**

Other evidence supports conclusion

- Mian & Sufi, FRB-SF Newsletter, January 2011 (attached to handout)
- County-level data
- Measure 2002-2006 increase in debt:income ratio
  - "high-household debt" = counties with top 10% of increases
    - Lots of increase in HELOC debt
    - Probably lots of HELOC-financed additional spending
  - "low-household debt" = counties with bottom 10% of increases
- How has recovery progressed in those two sets of counties?

High-debt REALLY cut back on car purchases
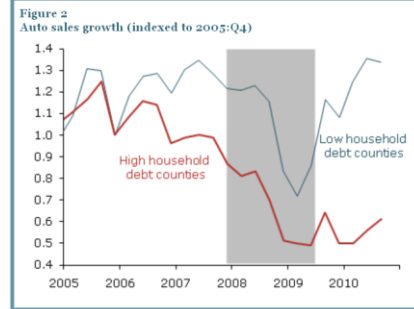
High-debt REALLY cut back on housing
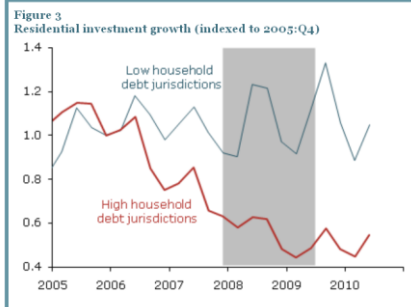
Employment fell especially where high debt

Wow-worthy: Decline in S of loans

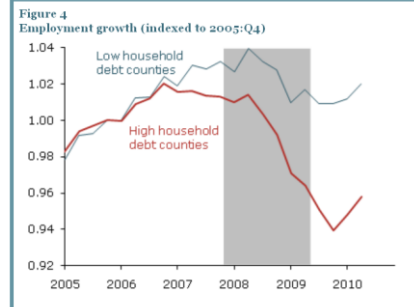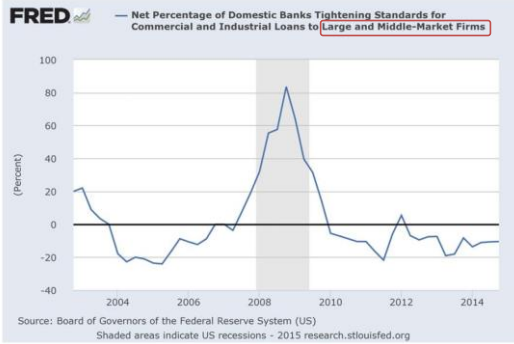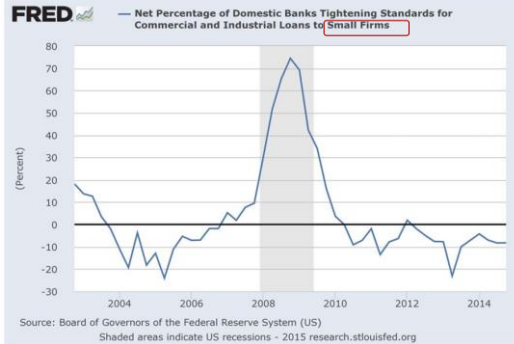FRED — Net Percentage of Domestic Banks Tightening Standards for Commercial and Industrial Loans to Large and Middle-Market Firms

Source: Board of Governors of the Federal Reserve System (US)
Shaded areas indicate US recessions - 2015 research.stlouisfed.org

Source: NBER WP #21076

FRED — Net Percentage of Domestic Banks Tightening Standards for Commercial and Industrial Loans to Small Firms

Source: Board of Governors of the Federal Reserve System (US)
Shaded areas indicate US recessions - 2015 research.stlouisfed.org

Demographic Changes

Table 1. Population Distribution

	1950	1970	1990	2010
% < 5	10.8	8.4	7.5	6.5
5 - 15	17.5	21.9	15.4	14.7
16 - 24	13.3	15.8	13.5	12.7
25 - 44	30.0	23.6	32.5	26.6
45 - 64	20.3	20.5	18.5	26.4
65 +	8.1	9.8	12.5	13.1
Total #	152 m	205 m	249 m	309 m

More changes

Table 2. Vital Rates per 1,000 population

	marriage rate	divorce rate	birth rate	death rate per 1,000	expec- tation of life at birth
1900			32.3	17.2	47.3
1920	12.0	1.6	27.7	13.0	54.1
1930	9.2	1.6	21.3		
1940	12.1	2.0	19.4	10.8	62.9
1947	13.9	3.4	26.6		
1950	11.1	2.6	24.1		
1960	8.5	2.2	23.7	9.5	69.7
1970	10.6	3.5	18.4	9.5	70.8
1980	10.6	5.2	15.9	8.8	73.7
1990	9.8	4.7	16.7	8.6	75.4
2000	8.3	4.1	14.4	8.5	76.8
2010	7.3	3.6	13.0	8.0	78.7

Far fewer "Phil & Claire Dunphy"

- Few households today are the "traditional family" of Mom, Dad, and Kid(s)

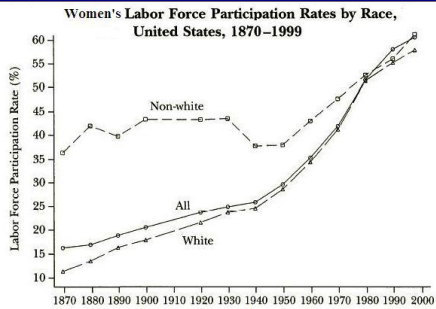**Table 3. Share of Households that are Married Couples w/Kids under 18**

Year	Share
1960	44.2
1970	40.3
1980	30.9
1990	26.3
2000	24.1
2010	20.9

Productivity Growth Slowdown   Resurgence   **Demography**   Women in the LF

More married women working

Table 6. Women's Labor Force Participation Rate

	all women		white women		nonwhite women	
	married	single	married	single	married	single
1900	5.6	43.5	3.2	41.5	26.0	60.5
1920	9.0	46.4	6.5	45.0	32.5	58.8
1930	11.7	50.5	9.8	48.7	33.2	52.5
1940	13.8	45.5	12.5	45.9	27.3	41.9
1950	21.6	50.6	20.7	51.8	31.8	40.0
1960	31.9	58.6	29.8	48.5	40.5	39.7
1970	40.5	56.8	38.5	52.1	50.0	43.6
1980	49.8	64.4	49.3	64.2	59.0	49.4
1990	58.4	66.9	55.8	68.6	64.4	50.4
2000	61.1	68.9	60.5	70.3		
2010	61.0	63.3	60.7	64.4	63.6	

Productivity Growth Slowdown   Resurgence   Demography   **Women in the LF**

Primarily about White women

Women's Labor Force Participation Rates by Race, United States, 1870–1999

Source: Costa, Dora L. "From Mill Town to Board Room: The Rise of Women's Paid Labor." Journal of Economic Perspectives 14 (Fall 2000): 104

Productivity Growth Slowdown   Resurgence   Demography   **Women in the LF**
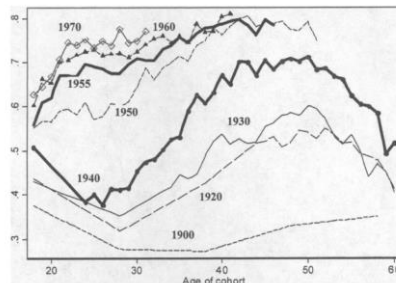
But check out age-specific LFPRs

FIGURE III
Age-Specific Labor-Force Participation Rates, by Cohort and Age 1900–1970
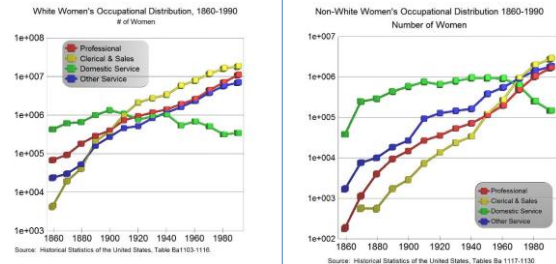
Source: Bailey, "More Power to the Pill"

Demography   Women in the LF   The Pill   Marriage Decisions

Shifts in Women's Typical Occupations

Table 7.
Occupational Distribution of Women, 1890-1999

	1890/ 1900	1930	1970	1999
Professional	9.6 %	16.5%	18.9%	35.9%
Clerical	4.0	20.9	34.5	23.4
Service	35.5	27.5	20.5	17.4
Sales	4.3	6.8	7.4	13.0
Manufacturing	27.7	19.8	17.9	9.2
Agricultural	19.0	8.4	0.8	1.1

Fewer Domestics; More Everything Else

Women & Services go hand-in-hand
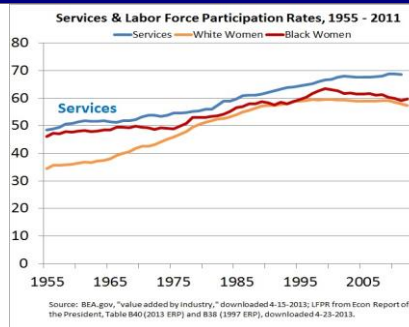
One Little Pill, three weeks out of four

- The Pill
  - Puts women in charge of fertility control
  - Separates fertility control decision from time of sexual activity
  - Initially not available to single women under age 21
  - Laws changed state-by-state
- Question: Did access to the Pill affect women's fertility? The timing of children? Their labor market supply?

Graph indicates something's going on
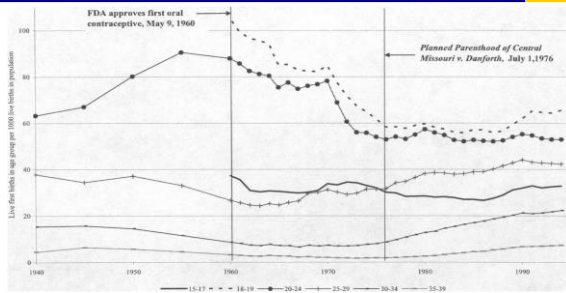
Bailey's analysis

Table 11. Effect of the Pill on Fertility
(Robust standard errors in parentheses)

	First birth before age . . .			# children ever born
	age 22	age 19	age 36	
ELA to Pill	-0.093 (0.043)	-0.011 (0.037)	-0.001 (0.031)	-0.062 (0.086)
ELA to abortion	-0.074 (0.057)	-0.086 (0.045)	-0.006 (0.006)	0.242 (0.120)
ELA to both	0.057 (0.082)	0.002 (0.065)	0.005 (0.008)	-0.186 (0.114)

Source: Bailey, Martha, "More Power to the Pill," Table III, columns 3-6.

Effect on LFPR & Hours

Table 12. Effect of the Pill on Labor Force Participation & Intensity of Market Work
(Robust standard errors in parentheses)

	In labor force?	Annual Hours
ELA, now aged 21-25	0.005 (0.006)	7.81 (10.4)
ELA, now aged 26-30	0.042 (0.006)	107 (13.4)
ELA, now aged 31-35	0.019 (0.006)	71.2 (13.4)
ELA, now aged 36-40	0.002 (0.006)	29.1 (14.1)
ELA, now aged 41-44	-0.003 (0.008)	29.4 (15.6)

Source: Bailey, Martha, "More Power to the Pill," Table IV, column 2, and Table V, column 7.

Shall I marry?

- Cost / benefit analysis
  - Assume: goal is maximize net benefit
- Specialization and Trade
  - Home production vs. Market production
  - Changing comparative advantage

- Higher women's labor force participation
  - Less marriage
  - Later marriage

Less specialization

Table 4.
Percent of married couples
who have both partners working

1970	39
1980	50
1990	54
2000	56
2010	54

Demography   Women in the LF   The Pill   Marriage Decisions   Immigration Laws

Less Marriage & Later Marriage

Table 5.				**Table 8.**	
% of 30-34 year olds never married				**Median Age at First Marriage**	
	Women	Men		Women	Men
1970	6.2	9.4	1900	21.9	25.9
1980	9.5	15.9	1930	21.3	24.3
1990	16.4	27.0	1940	21.5	24.3
2000	21.9	30.0	1947	20.5	23.7
2010	27.1	36.5	1950	20.4	22.8
			1960	20.3	22.8
			1970	20.6	22.5
			1980	21.8	23.6
			1990	24.0	25.9
			2000	25.1	26.8
			2010	26.3	28.1

Demography   Women in the LF   The Pill   Marriage Decisions   Immigration Laws

Stunning Increase

Figure MS-2
Median age at first marriage: 1890 to present
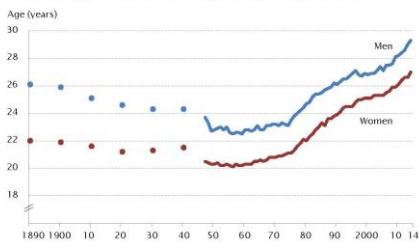
Source: U.S. Census Bureau, Decennial Censuses, 1890 to 1940, and Current Population Survey, Annual Social and Economic Supplements, 1947 to 2014.

United States Census Bureau

1970s Banking   LBOs 1980s   S&L Crisis   Subprime Lending Crisis   HELOCs

Though more living together

Table 9.
Unmarried Couple Households

	Straight		Gay
	# (000's)	% of all households	# (000's)
1970	523	0.8	
1980	1,589	2.0	
1990	2,856	3.1	
2000	4,881	4.6	594
2010	5,748	5.0	654

Demography   Women in the LF   The Pill   Marriage Decisions   Immigration Laws

Why marry when you can take 113?

- Women are substituting college for marriage

Table 10.
% degrees earned by women

	Bachelor	Master	Doctorate
1950	24	29	14
1970	43	39	13
1990	53	53	37
2000	57	58	44
2010	57	60	52

Attitudes have changed, too

Table 13. Percent of college freshman who agree with this statement: "Activities of married women are best confined to home & family."

1970	48 %
1990	25 %
1997	25 %

Group Discussion Questions

- What were the explanations for fertility decline that we looked at earlier in the course?
- Are those explanations relevant to explaining the last 30-40 years of fertility behavior in the U.S.? Why/why not?
- What if we think of fertility decisions more broadly, as a cost/benefit calculus? How well does the cost/benefit approach explain the 19th century fertility decline?