This Time May Truly Be Different: Balance Sheet Adjustment under Population Ageing

Prepared for the Panel "The Future of Monetary Policy"
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Kiyohiko G. Nishimura

Deputy Governor

Bank of Japan

Outline

1. Introduction: Population Ageing
2. Balance Sheet Adjustment and Breakdown of Transmission Mechanism: Japan 90s / US 2000s
3. Prolonged B/S Adjustment under Population Ageing: Consequences
4. Multi-Faceted Challenge and Unconventional Monetary Policy
   - Comprehensive Monetary Easing (CME) and
   - Growth Foundation Strengthening Facility (GFSF)
     (officially titled: Fund-Provisioning to Support Strengthening the Foundation for Economic Growth)

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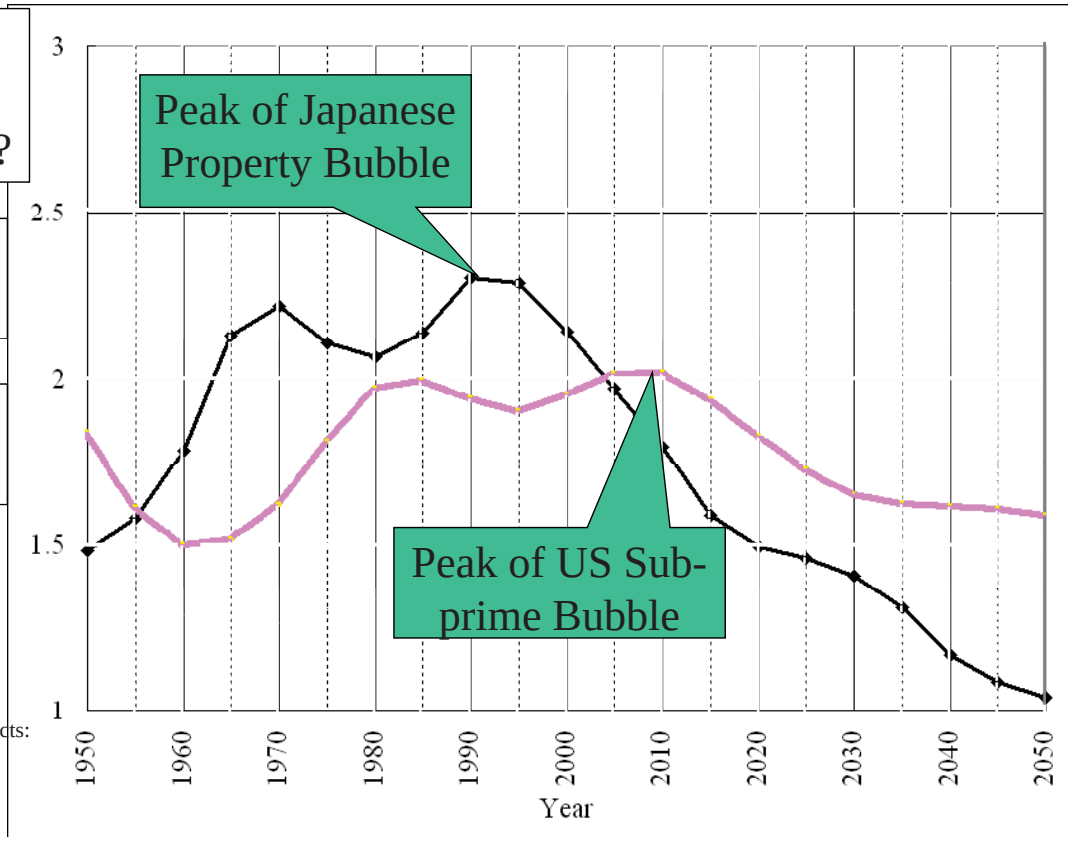
Population Ageing: Inverse Dependency Ratio

How many people of working age have to provide for one dependent person?

Fig 1.1. When did IDR Peaked?

Japan Black ca 1990

US Purple ca 2007+

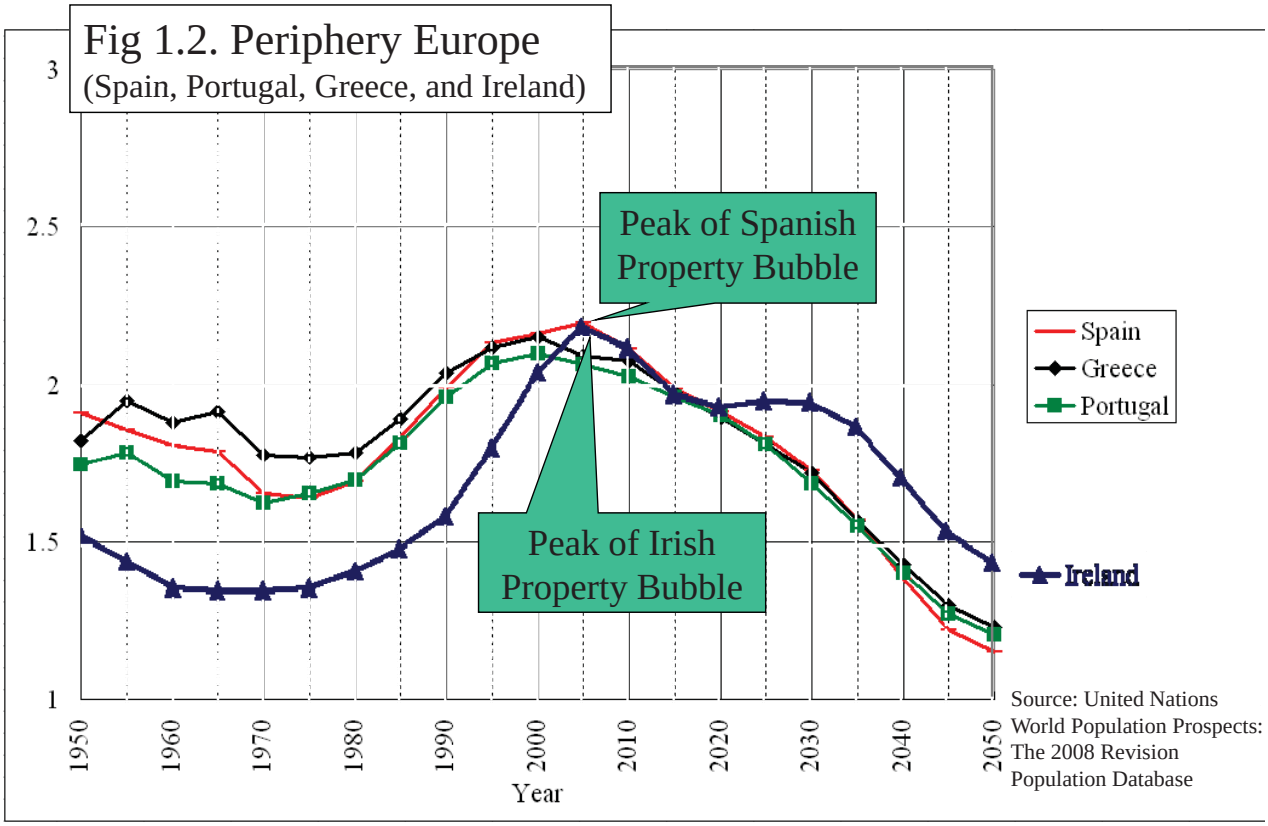


Source: United Nations World Population Prospects: The 2008 Revision Population Database

Population Ageing: Inverse Dependency Ratio

How many people of working age have to provide for one dependent person?

Fig 1.2. Periphery Europe
(Spain, Portugal, Greece, and Ireland)



Source: United Nations World Population Prospects: The 2008 Revision Population Database

Population Ageing: Inverse Dependency Ratio

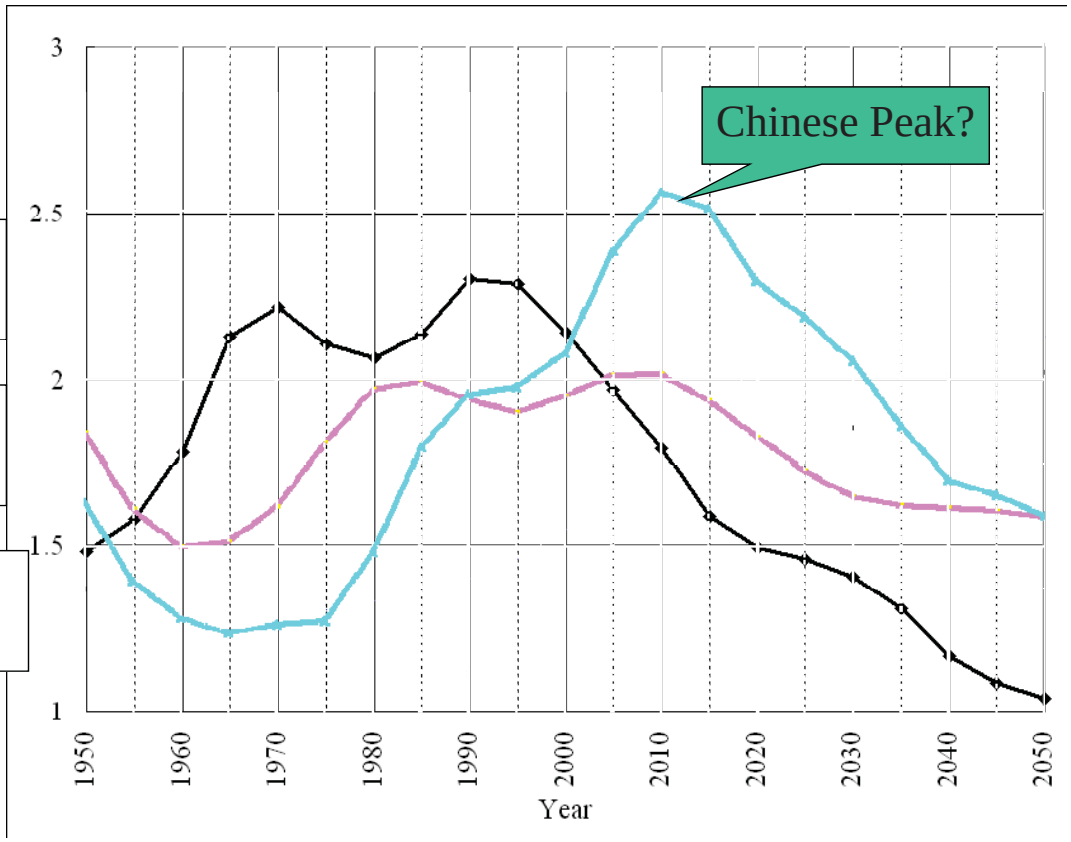
How many people of working age have to provide for one dependent person?

Fig 1.3. China

Japan Black ca 1990

US Purple ca 2007+

China Blue ca 2010-15



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Who Leveraged during the Bubble?

Fig 2.1. Japan➔ Corporate Sector

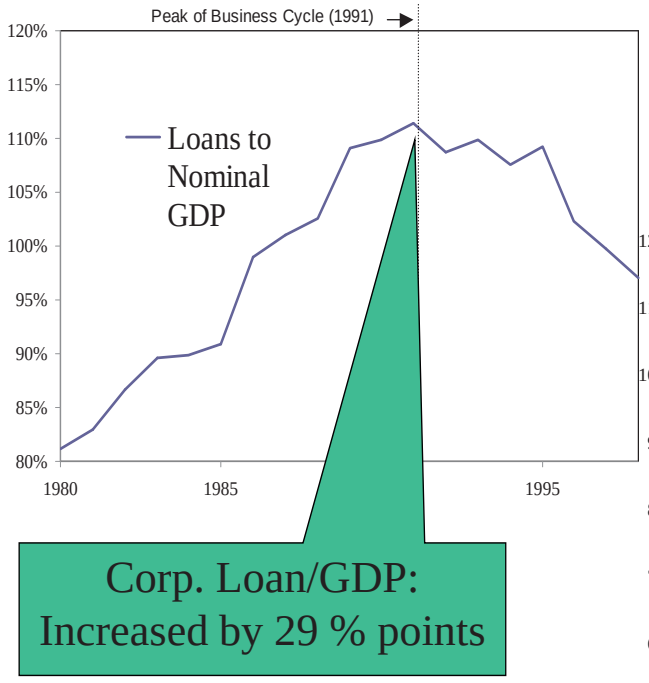
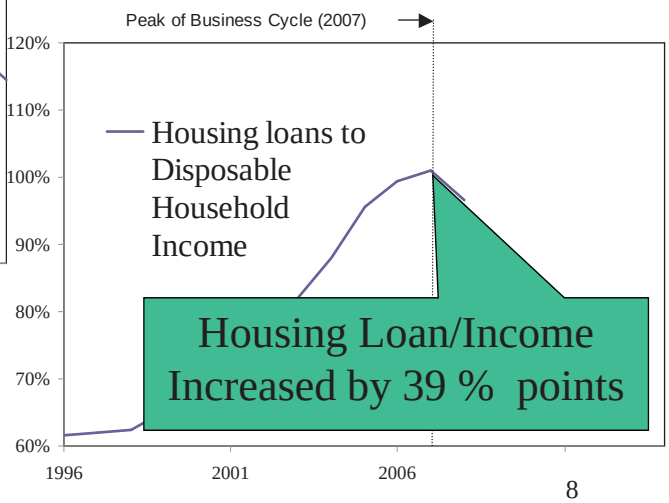


Fig 2.2. US➔ Household Sector

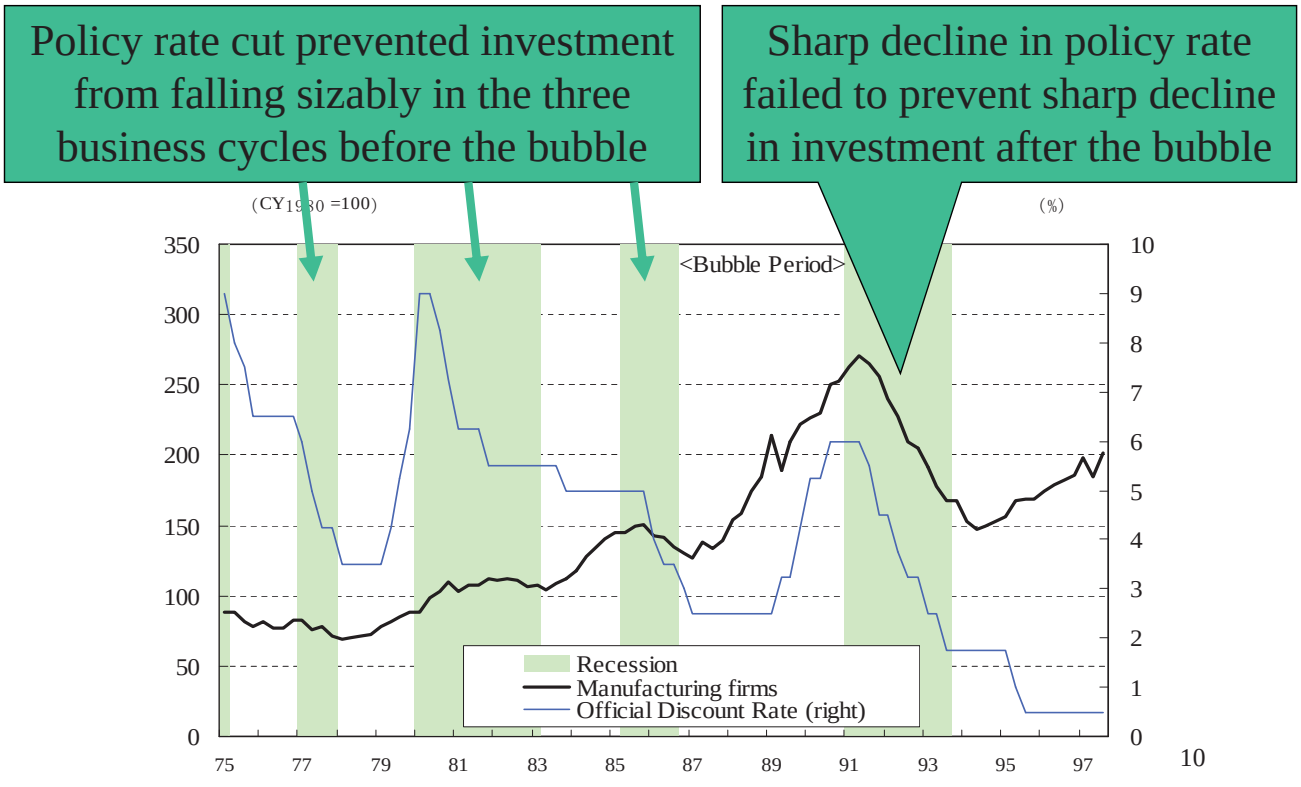


Breakdown of Transmission Mechanism

- Before the bubble burst, leveraged sectors were sensitive to policy rate reduction in business cycles: They were “transmission gears”.
- After the bubble burst, these leveraged sectors became insensitive to policy rate reduction
- Why? ➔ Acute Balance-Sheet Adjustment
  - Large legacy shortfall must be compensated for by current profit/income, period by period
  - Slow and painful process for leveraged sectors

Japan: Corporate Sector

1. Manufacturing Investment (Fig 3.1)



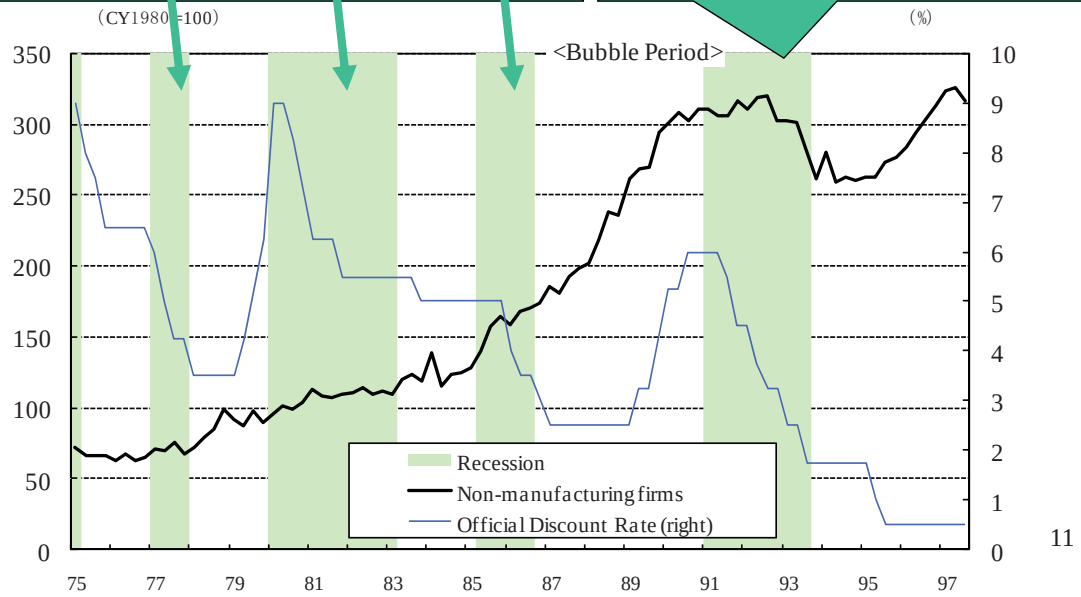
Japan: Corporate Sector

2. Non-Manufacturing Investment (Fig 3.2)

- The same picture as for manufacturing

Policy rate cut seems more effective here than in manufacturing in the three business cycles before the bubble

Sharp decline in policy rate failed to prevent sharp decline in investment after the bubble



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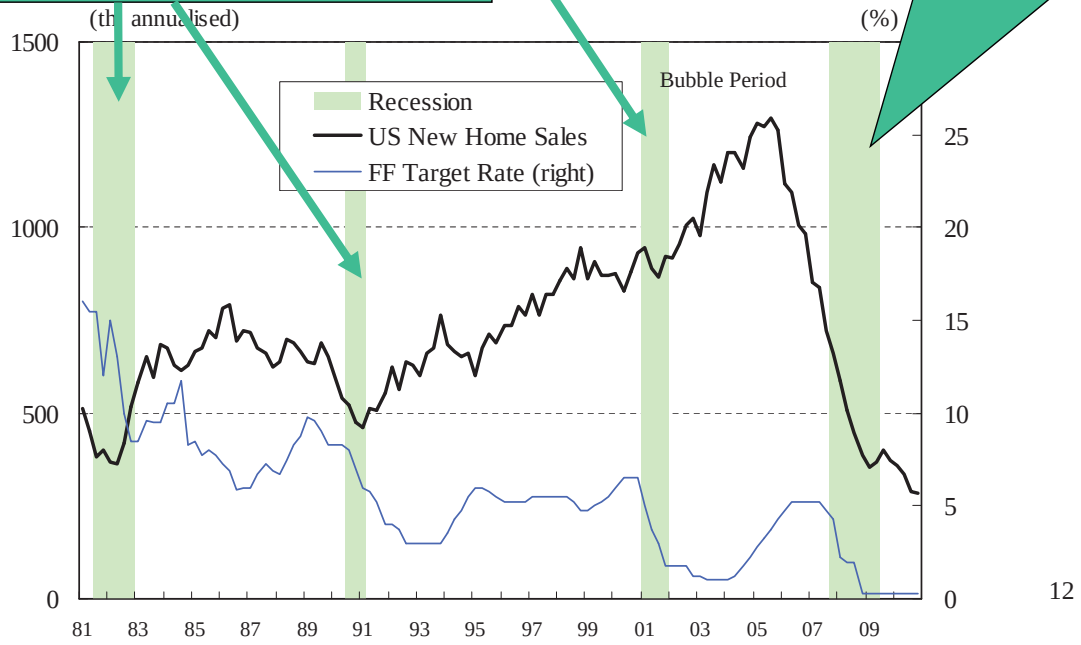
US: Household

1. New Home Sales (Fig 3.3)

Policy rate cut at least prevented new home sales from falling further, and helped them pick up in the three business cycles before the bubble

Sharp decline in policy rate failed to prevent sharp decline in new home sales after the bubble



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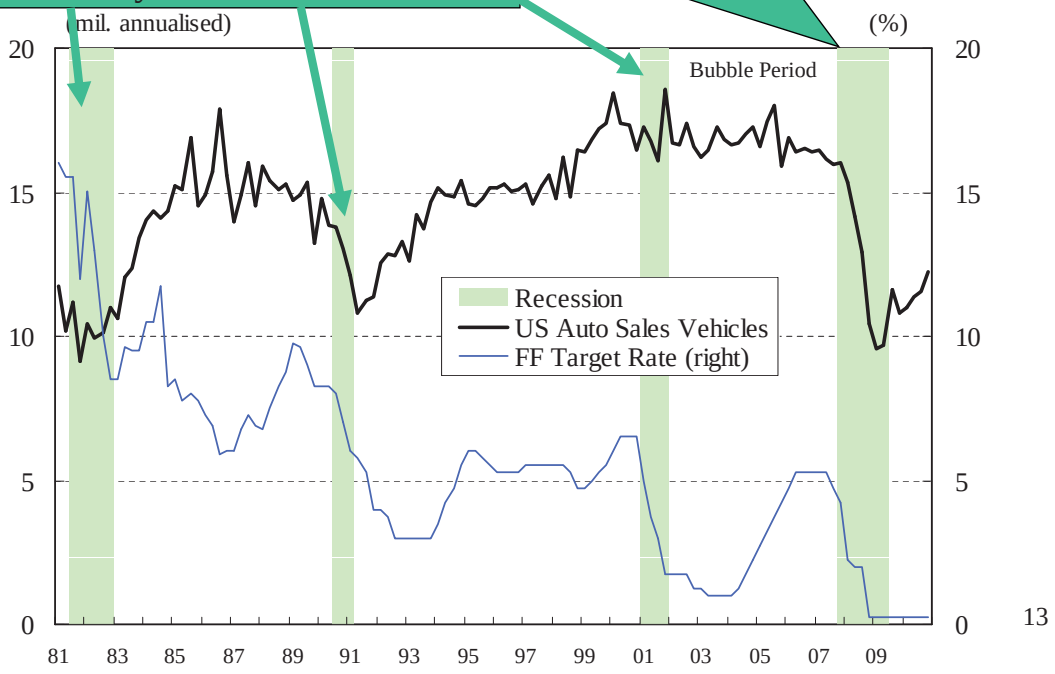
US: Household

2. Automotive Sales (Fig 3.4)

Policy rate cut at least prevented automotive sales from falling further, and/or helped them pick up quickly in the three business cycles before the bubble

Sharp decline in policy rate failed to prevent sharp decline in automotive sales after the bubble



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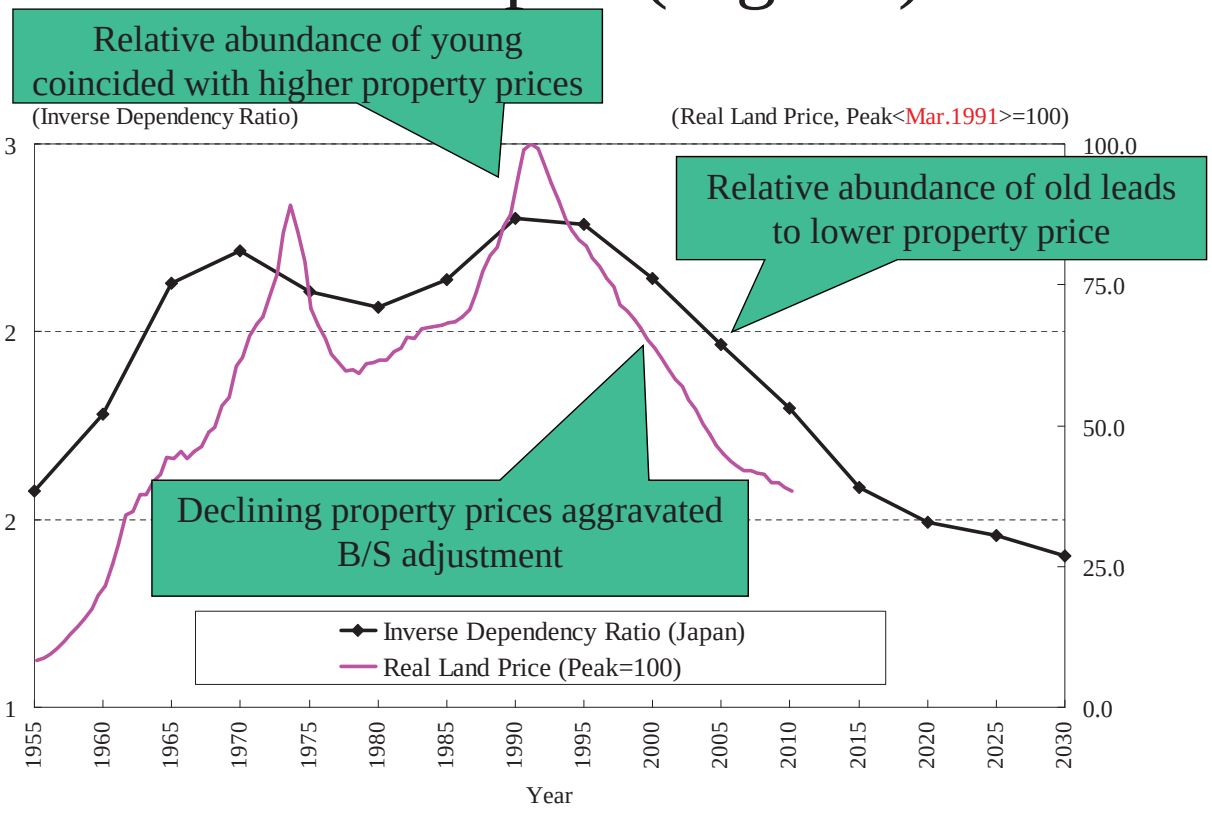
Population Ageing

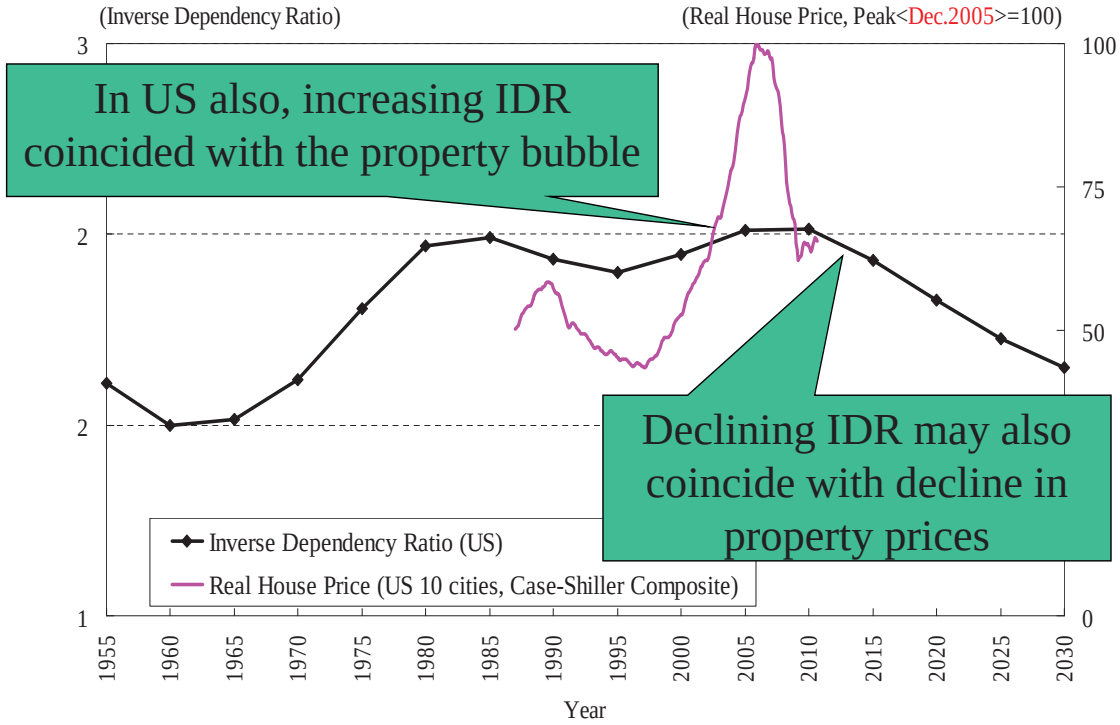
- There are many consequences of population ageing, such as differences in consumer preferences/ technological adaptability between young and old , but
- I will concentrate one issue, which is pertinent to B/S adjustments

➔ Possible effects of population ageing on property prices

Ageing Population and Property Prices: Japan (Fig 4.1)



Ageing Population and Property Prices: US (Fig 4.2)



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What are the consequences of severe and prolonged B/S adjustment under Population Ageing?

- 1) The Economy Becomes "Inflexible"– Declining Mobility
  - De-leveraging firms/households are stuck with "underwater" property; they have to pay back all debts before "moving" from their current position
    - Population ageing strengthens this tendency
  - Japan: firms become less mobile between industries/regions
  - US: household mobility has been reduced

Declining Mobility: Japan

- "Sticky industry structure," hanging on to the past

Fig. 5.1 Enterprise Creation and Destruction

Year	All industries (%)							
					tail de	Eating and drinking places	Services	Miscellaneous
Post-World War II Era[b]								
Rate of net increase								
1981–1986	2.31	3.1	1.18	1.97	1.49	1.23	5.31	3.08
1987–1991	3.25					53	6.04	4.72
1992–1996	1.41	.92				21	2.87	1.42
Rate of creation (estimated)								
1981–1986	3.52	5.46				90	6.10	4.11
1987–1991	3.76	5.98				30	6.39	5.28
1992–1996	2.12	4.90				1.35	3.40	2.19
Rate of destruction (bankruptcy rate)								
1981–1986	1.33	2.58	1.12	1.72	0.82	0.70	0.97	1.16
1987–1991	0.57	0.88	0.48	0.88	0.33	0.33	0.44	0.68
1992–1996	0.75	1.14	0.73	1.07	0.38	0.35	0.59	0.82

•After the bubble burst, creation of enterprises is sharply reduced.

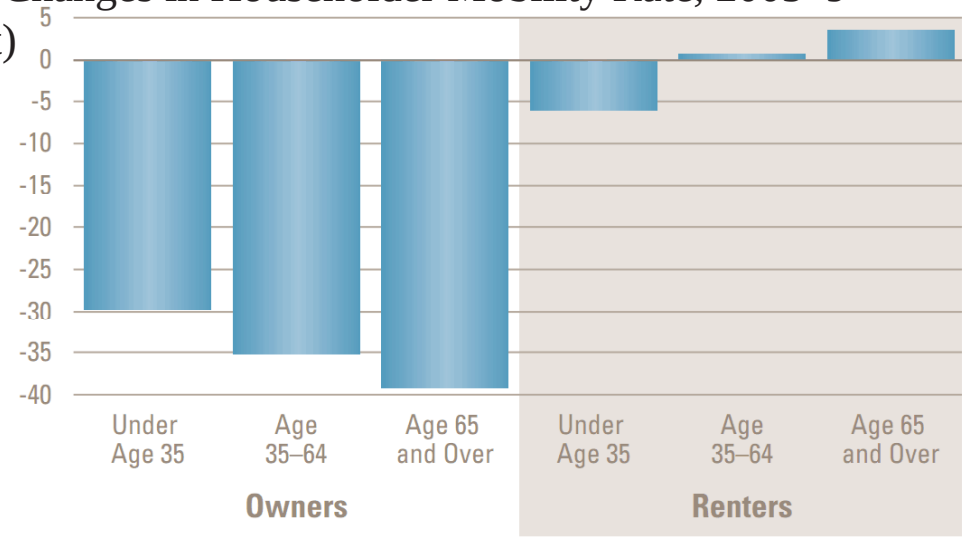
In contrast, relatively mild increase in destruction.

Source: Nishimura and Kawamoto (2003). "Why Does the Problem Persist?: "Rational Rigidity" and the Plight of Japanese Banks," *The World Economy*, 26 (2003), 301-324

Declining Mobility: US

- The housing crash reduced mobility rates.

Fig 5.2 Changes in Householder Mobility Rate, 2005–9 (Percent)



Note: Mobility rate is defined as the share of householders who reported having moved in the previous 12 months.

Source: JCHS tabulations of US Census Bureau, 2005 and 2009 Current Population Surveys.

Figure 13, *The State of the Nation's Housing* 2010, Joint Center of Housing Studies of Harvard University

What are the consequences of severe and prolonged B/S adjustment under Population Ageing?

- 2) Loss of Non-Tangible/Human Capital
  - De-leveraging firms/households suffering long under-utilization/under-employment tend to lose their non-tangible/human capital
  - Japan, especially SME: loss of entrepreneurship, loss of human networks in skilled manufacturing, loss of access to technological advances
  - US, especially long-term unemployment/underemployment: loss of human capital

What are the consequences of severe and prolonged B/S adjustment under Population Ageing?

- 3) Deterioration in Financial Institutions' Efficient Functioning as Financial Intermediaries
  - Japan:Pile-up of Non-Performing Loans lead to breakdown of market selection mechanism around 1997
  - US: ? -- Not yet known

Fig 6. Breakdown of Natural Selection Mechanism in the Financial Crisis of 1997

TFP of surviving and exiting firms

	1994–95		1995–96		1996–97		1997–98	
	Survive	Exit	Survive	Exit	Survive	Exit	Survive	Exit
Food products and beverages								
Livestock products	1.71	1.00	1.67	1.05	1.68	1.94	2.18	1.28
Seafood products	1.42	0.86	1.58	1.06	1.66	0.94	1.28	1.11
Flour and grain mill products	2.35	0.69	3.83	1.05	4.00	1.21	4.27	2.33
Miscellaneous foods and related products	1.43	3.15	1.52	1.26	1.49	1.61	1.60	0.98
Soft drinks, carbonated water, alcoholic, tea and tobacco	4.12	1.49	4.59	1.63	4.56	1.60	4.53	5.26
P					2.96	3.89	3.64	1.24
Che								
C					1.84	3.69	3.36	2.22
In					2.84	3.21	2.91	7.49
C					2.38	0.95	2.06	n.a.
Oil and fat products, soaps, synthetic detergents, surface-active agents and paints	1.72			1.16	2.18	1.98	2.50	1.69
Drugs and medicines	2.10	1.60	2.26	1.76	2.49	2.43	2.63	1.67
Miscellaneous chemical and allied products	2.55	1.59	2.15	3.94	2.73	1.87	2.97	1.18
Retail trade								
Retail trade, general merchandise								
Retail trade (dry goods, apparel and apparel accessories)	1.15	1.07	1.25	1.14	1.36	1.18	1.28	1.10
Retail trade (food and beverage)	0.84	0.71	0.98	0.71	0.93	1.01	0.99	1.78
Retail trade (motor vehicles and bicycles)	0.84	0.74	0.92	0.92	0.96	0.89	0.88	
Retail trade (furniture, household utensil and household appliance)	1.05	1.04	1.04	1.13	1.18	0.92	1.30	
Household appliance stores	1.00	0.92	1.27	1.03	1.20	1.42	0.93	
Drug and toiletry stores	4.16	0.78	2.33	0.84	2.54	0.87	0.82	
Fuel stores	0.94	0.86	0.88	1.04	0.87	0.94	0.92	
Miscellaneous retail trade	1.12	1.51	1.15	1.12	1.18	1.31	1.06	

1997: many industries saw more productive firms exiting.→ Breakdown of natural selection

Shaded: exiting firms are more productive than surviving firms

Notes: (1) Shaded areas indicate weighted mean of TFP of exiting firms is greater than that of surviving firms. (2) "Survive" include "switch" firms.

Nishimura, Nakajima, Kiyota (2005) "Does Natural Selection Mechanism Still Work in Severe Recessions? –Examination of the Japanese Economy in the 1990s- " *Journal of Economic Behavior and Organization*, 58:1 (2005), 53-78

The End Results of B/S Adjustment under Population Ageing: Japan in the 2000s (1)

i) Decline in Real GDP Growth

(FY, 10-year average)

10.4%(60s)➔ 5.0%(70s)➔4.3%(80s)➔1.5%(90s)➔0.8%(01-09)

- Expected real rate of return on investment becomes low
- Money (deposits), with price-stability pledge of the central bank, looks relatively attractive
  - Breakdown of quantity-theoretic money-output relationship
- Near zero policy rate and already low longer rates
  - Economy is more vulnerable to downside shocks

The End Results of B/S Adjustment under Population Ageing: Japan in the 2000s (2)

ii) Coordination Failure

– Banks' Sluggish Lending, partly because of their inadequate functioning as an expert relationship banker <Vicious Circle>

(1) Lacking expertise to assess investment in new fields, banks do not lend.

➔ (2) New investment/firms cannot get funding, and thus new markets falter.

➔ (3) Banks miss opportunities to accumulate new expertise, thus back to (1)

– "Excessive" Risk Aversion in capital markets <Vicious Circle>

(1) Fearing unknown unknowns, investors shun investing in riskier securities

➔(2) Their markets become thin and vulnerable to non-fundamental shocks

➔(3) Their markets become prone to turning into unknown unknowns, thus back to (1)

- Apparent lack of "animal spirits"

The End Results of B/S Adjustment under Population Ageing: Japan in the 2000s (3)

- iii) Piling-up of Government Debt
  - Substitution of private debt by public debt
  - Substitution of private demand by public demand

➔unsustainable expenditure

General Government Gross Financial Liability-to-GDP Ratio

– 2010 Japan: 198% >> US 93% (OECD Economic Outlook no.88)

However, Government Net Debt Interest Payments-to-GDP is

– 2010 Japan: 1.2% < US 1.7% (OECD Economic Outlook no.88)

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Multi-Faceted Challenge

- Cyclical-Stabilization Challenge
  - To ensure the return to sustainable growth with price stability
  - When policy rate is near zero and longer-term risk-free rates are also very low
- Trend-Enhancing Challenge
  - To raise long-term growth prospects
  - By solving coordination failure in banking and capital markets
- Challenge to Avoid Causing Problems in National Debt Management

Comprehensive Monetary Easing (CME)
Growth Foundation Strengthening Facility (GFSF)

1) Coping with "Cyclical-Stabilization Challenge"
   - CME (1) Change Policy Guideline: Virtual Zero-Interest Rate Policy
     - Policy Rate: Point <0.1%> ➔ Range [0, 0.1%]
   - CME (2) Clarification of the Policy (Duration) Commitment
     - Similar to Forecast Targeting though not specific in numbers

Comprehensive Monetary Easing (CME)
Growth Foundation Strengthening Facility (GFSF)

1) Coping with "Cyclical-Stabilization Challenge" (continued)
   - CME (3) Asset Purchase Program Aimed at Influencing Downward Longer-Term Rates
     - Purchase of JGBs with remaining maturity of 1-2 years and T-bills (to reduce term-premiums of risk-free rates)
     - Purchase of CPs and Corporate Bonds (to reduce both term-premiums and risk-premiums)
     - Common-collateral fund-provisioning scheme aimed at lowering longer-term rates than the overnight rate (already instituted and continued)
   - CME (4) Asset Purchase Program aimed at solving coordination failure in capital markets
     - Purchase of riskier securities: BBB-rated corporate bonds, a-2 CPs
     - Purchase of ETFs and J-REITs
     - Act as a catalyst to induce investment in riskier assets

2) Coping with "Trend-Enhancing Challenge"

– Growth Foundation Strengthening Facility (GFSF) aimed at solving coordination failure in banking

- Preferential fund-provision aimed at supporting financial institutions' own initiatives to lend/invest in new growth areas
- Act as a catalyst to induce banks to lend to new, growth areas

Challenge to avoid causing problems in national debt management

- Carefully avoid impression of "monetization" of government debts
- Otherwise, the large scale purchase of JGB may end up with substantial and lasting ratcheting up of long-term rates, which would pose a serious problem for economic recovery and the financial position of the government.
- BoJ has already purchased about 22 trillion yen in JGBs annually, beside the Asset Purchase Program, taking this point into consideration.
- Also, due consideration needed for possibility of capital losses from the Asset Purchase Program