

Bubbles, Demographic Change and Natural Disasters

June 1, 2011

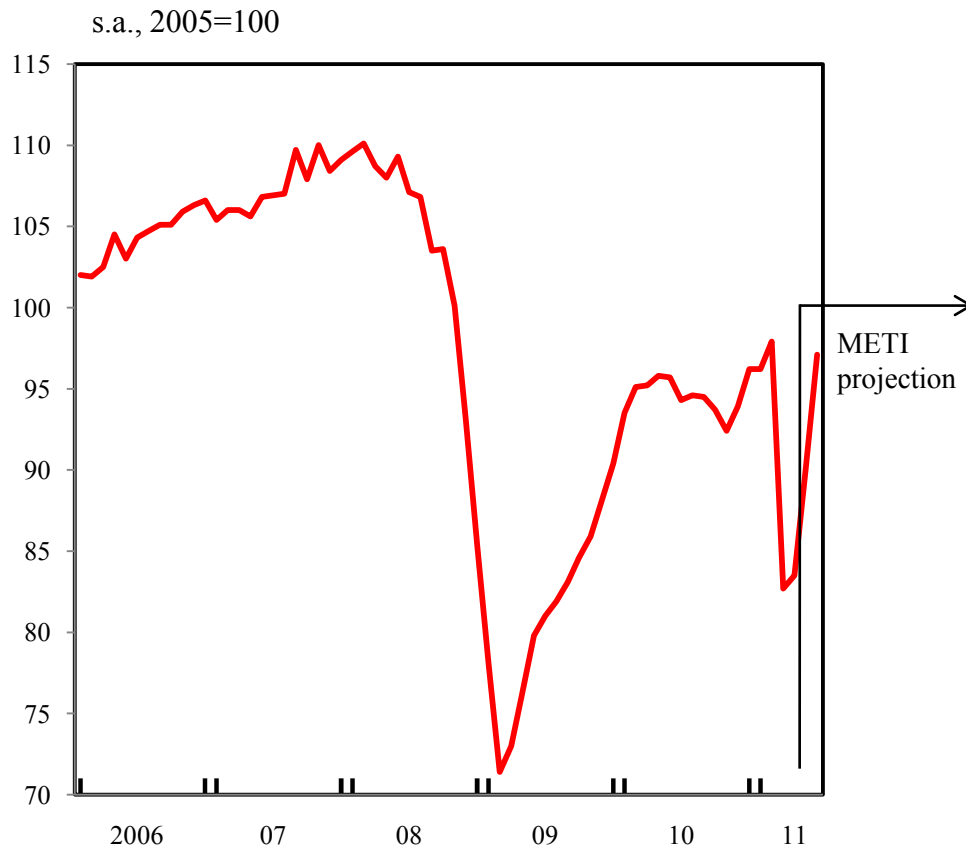
BOJ-IMES Annual International Conference

Masaaki Shirakawa

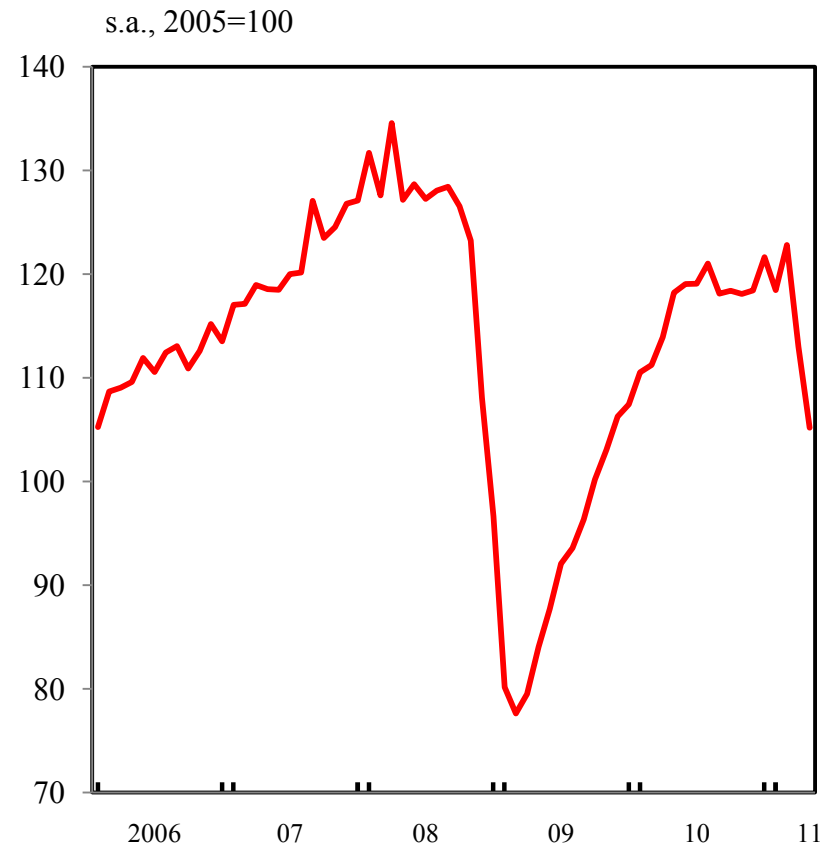
Governor of the Bank of Japan

Since the March 11 earthquake, the Japanese economy has experienced a sharp economic downturn due to supply-side constraints.

Production

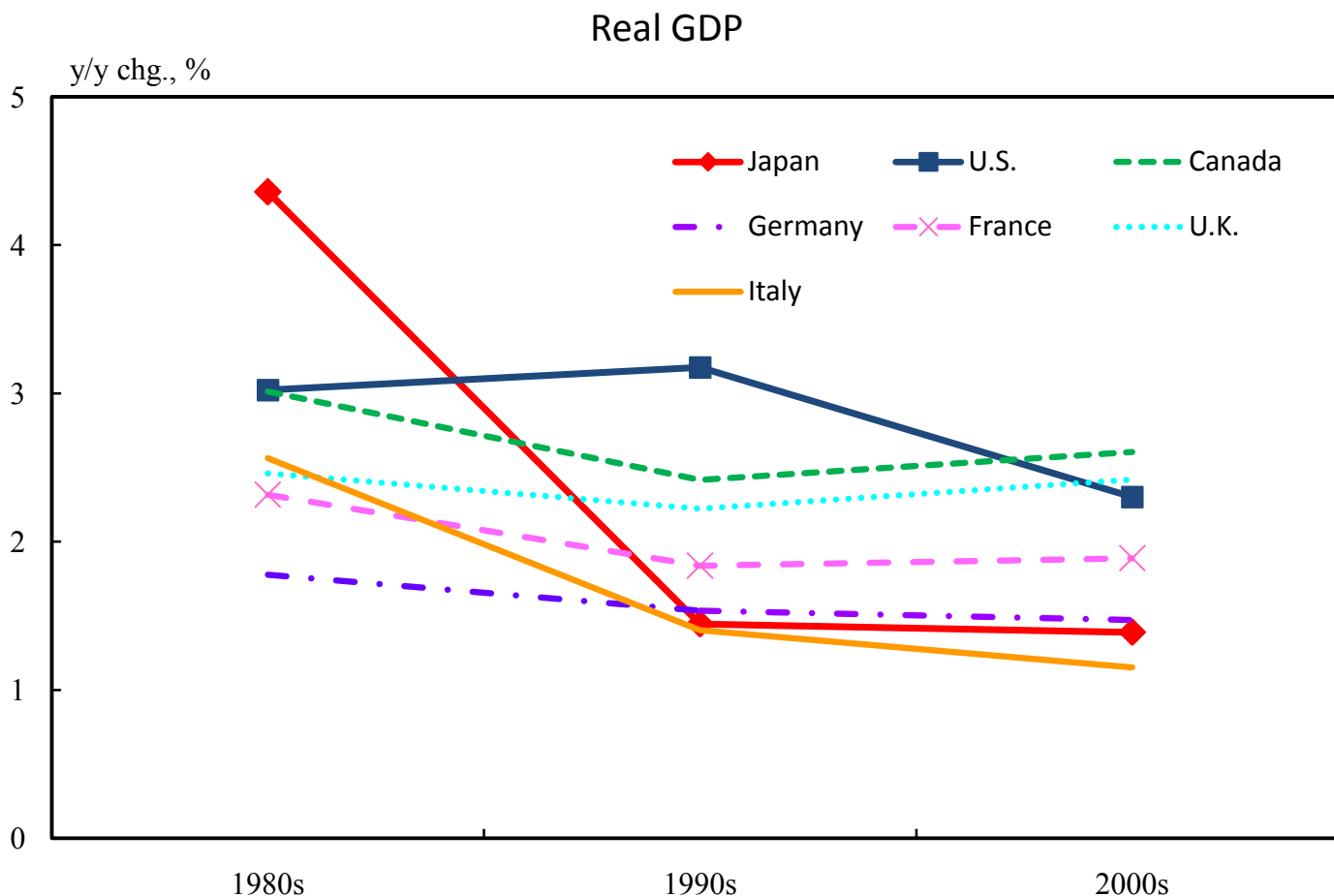


Real Exports



Sources: Ministry of Economy, Trade and Industry, “Indices of Industrial Production”;
Bank of Japan, “Real Exports and Real Imports.”

In real GDP growth, Japan has remained in the most lackluster sub-group in the G-7 since the 1990s.

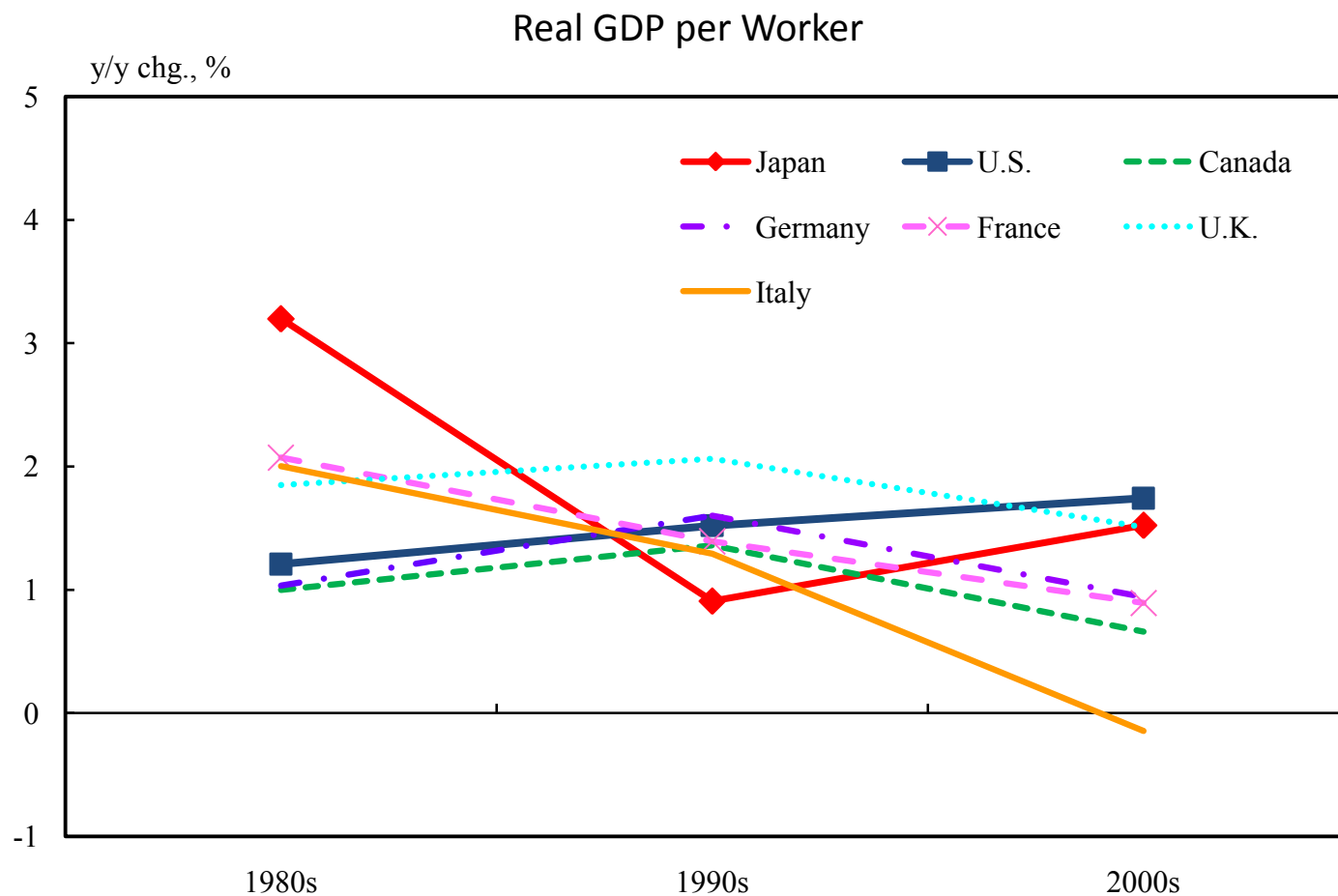


Notes: 1. To eliminate the effect of the financial crisis, the figure for the 2000s is the average from 2000 to 2008.

2. The figure for Germany for the 1980s is that for West Germany, and that for the 1990s is the average from 1992 to 1999.

Source: Datastream.

In real GDP growth per worker, Japan remained in the top-subgroup in the G-7.

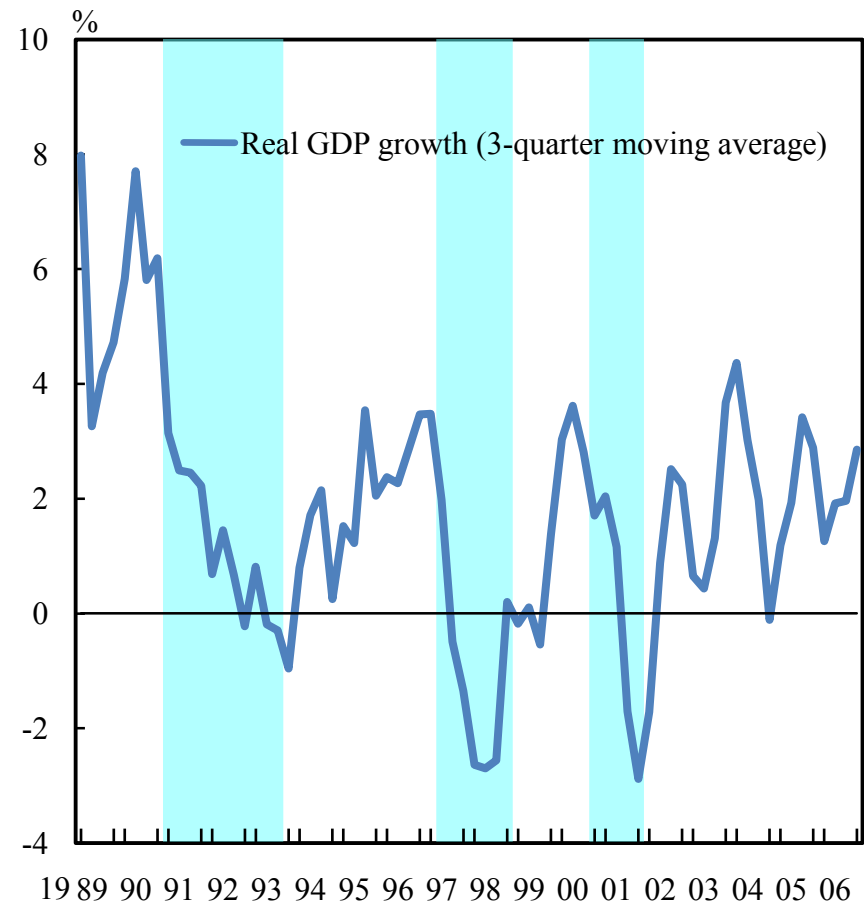
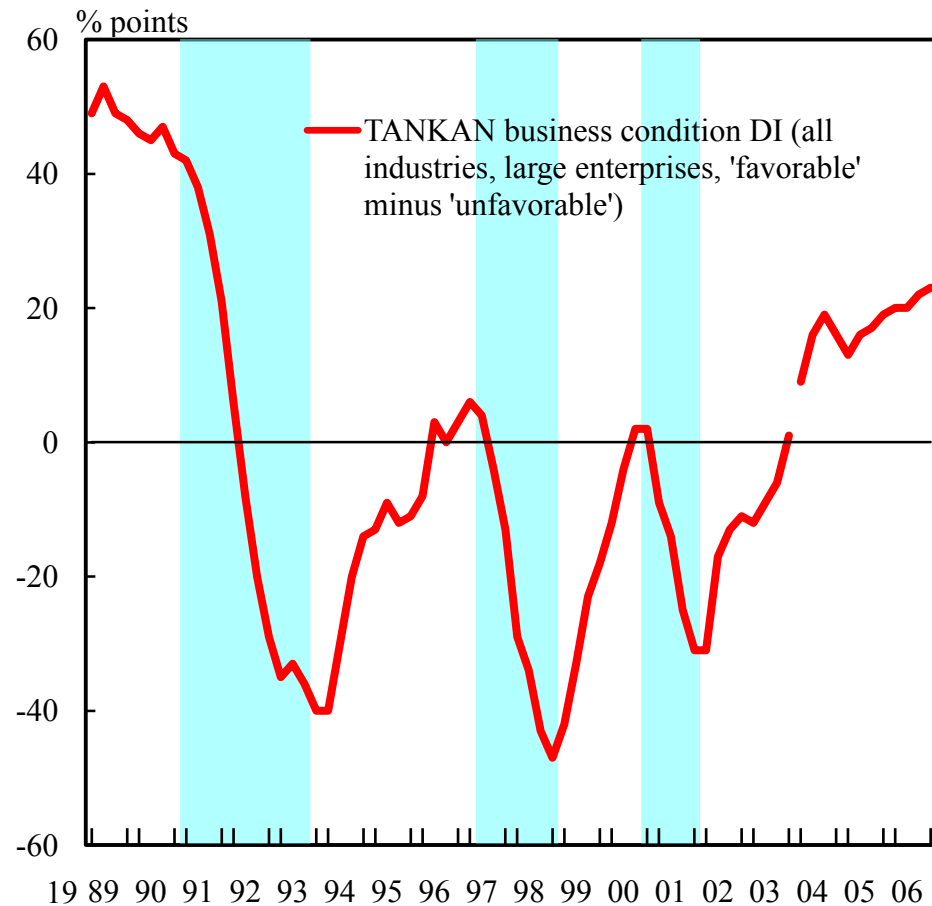


Notes: 1. To eliminate the effect of the financial crisis, the figure for the 2000s is the average from 2000 to 2008.

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Source: Datastream.

After the burst of the bubble, Japan experienced a protracted period of economic underperformance known as the “lost decade.” The economy started to recover after 2004.

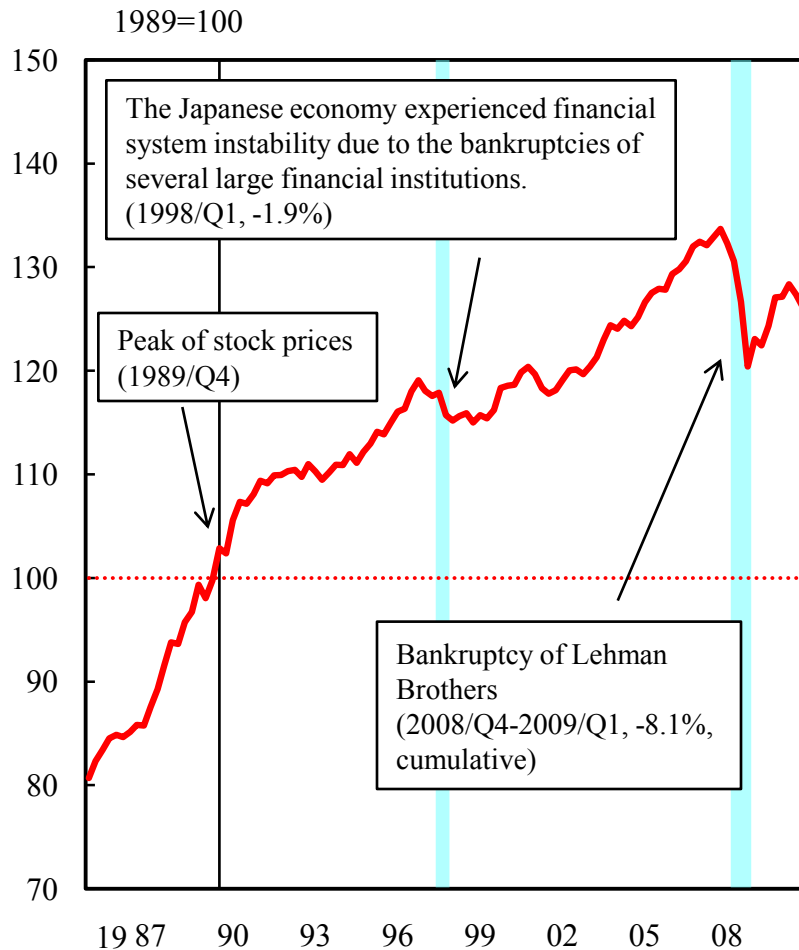


Note: Shaded areas indicate periods of recession.

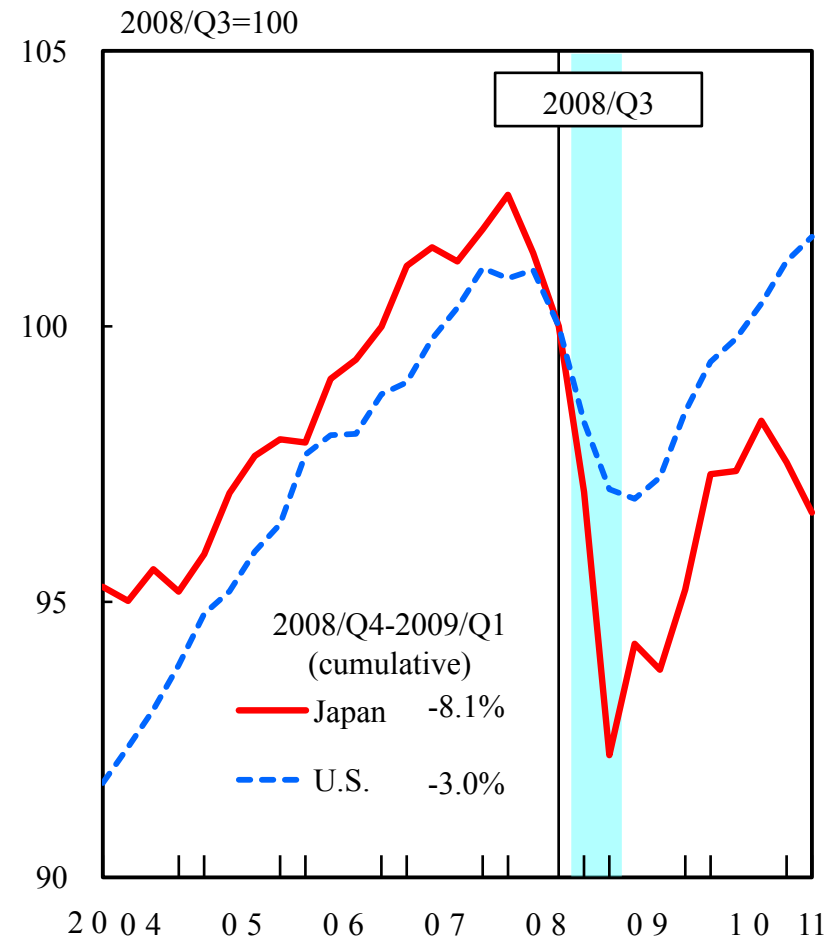
Sources: Bank of Japan, “Short-Term Economic Survey of Enterprises”; Cabinet Office, “National Accounts.”

After the two financial crises, Japan experienced a drastic contraction in economic activity: the decline in output after the bankruptcy of Lehman Brothers was much larger than that following Japan's financial crisis from 1997 to 1998.

Real GDP in Japan



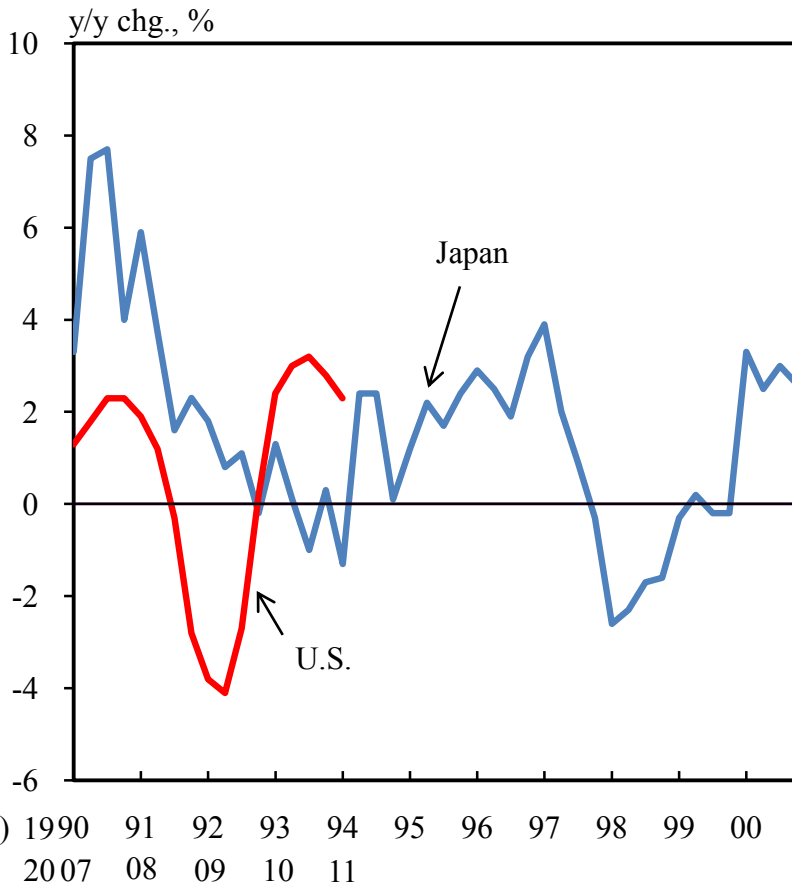
Real GDP in the Recent Crisis



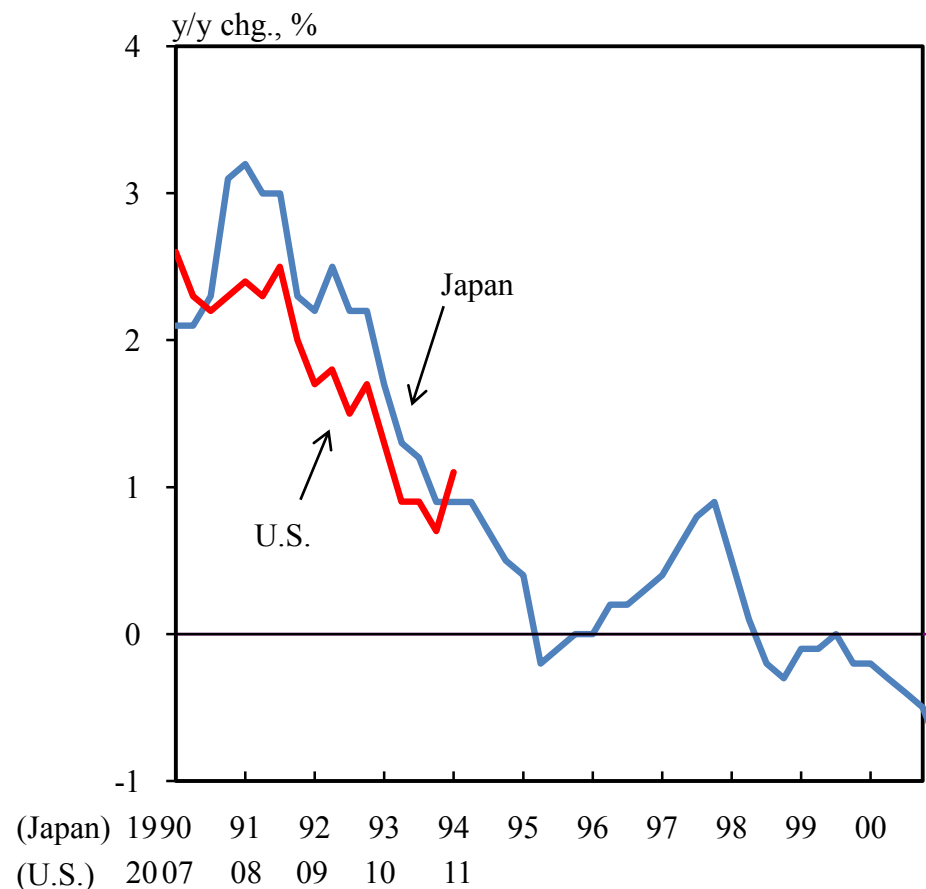
Sources: Cabinet Office, "National Accounts"; Department of Commerce.

So far, developments in Japan and the U.S. in real GDP growth and inflation since the burst of the bubble look similar.

Real GDP



Consumer Prices



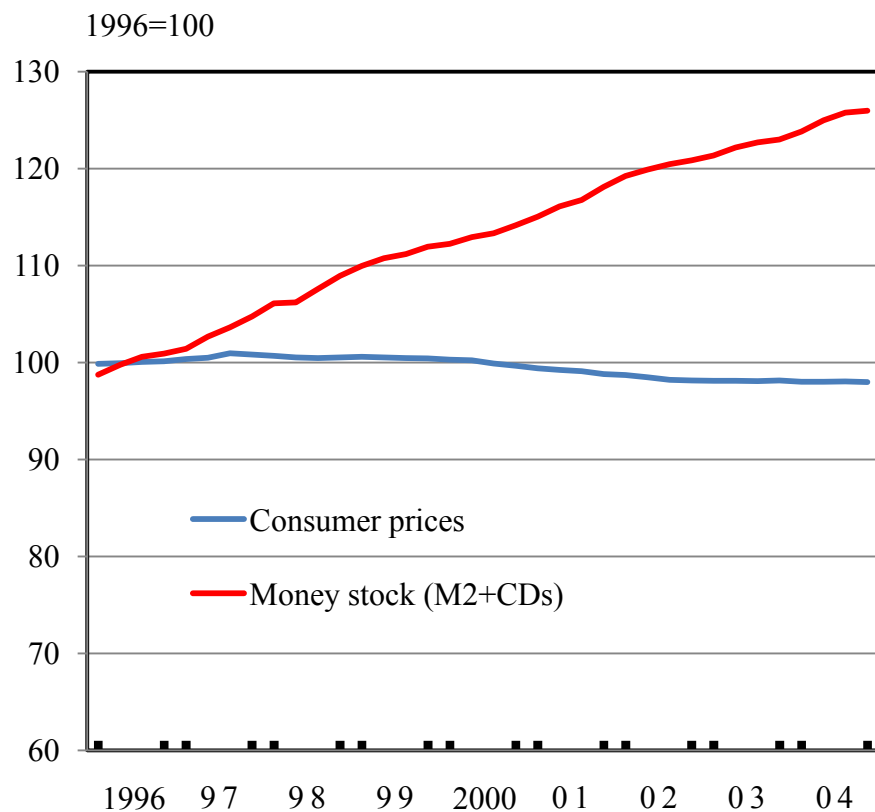
Note: Consumer prices are core CPI. The core CPI in Japan is computed by excluding perishables from headline CPI.

Sources: Cabinet Office, "National Accounts"; Department of Commerce;

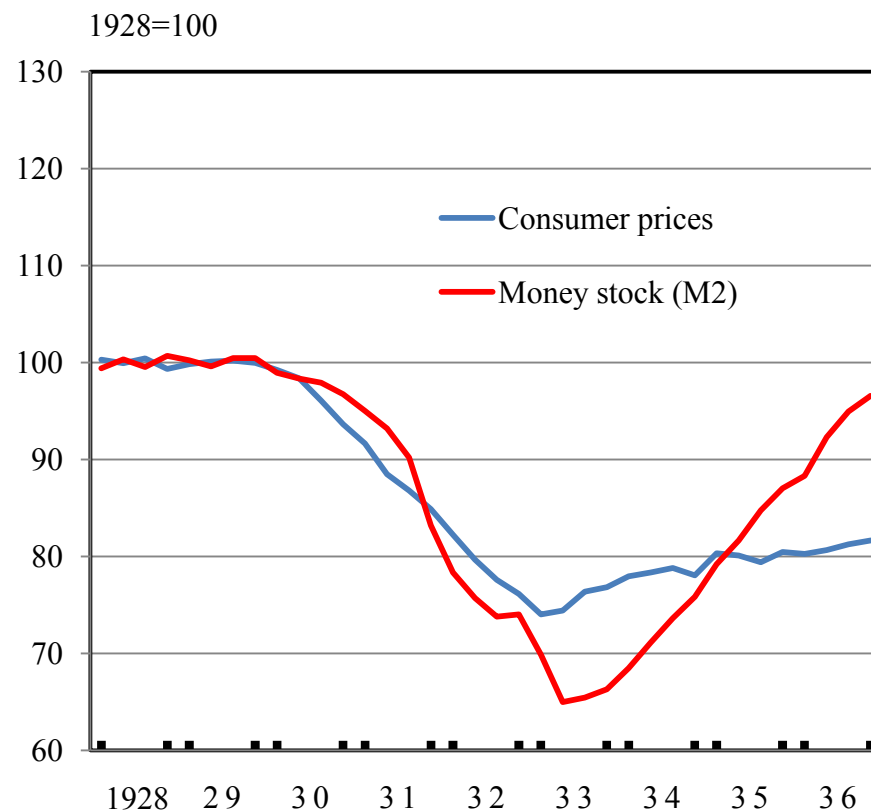
Ministry of Internal Affairs and Communications, "Consumer Price Index"; Department of Labor.

Unless central banks take aggressive policy actions as the lender of last resort, prices will drastically decline due to financial crises.

Japan



U.S.

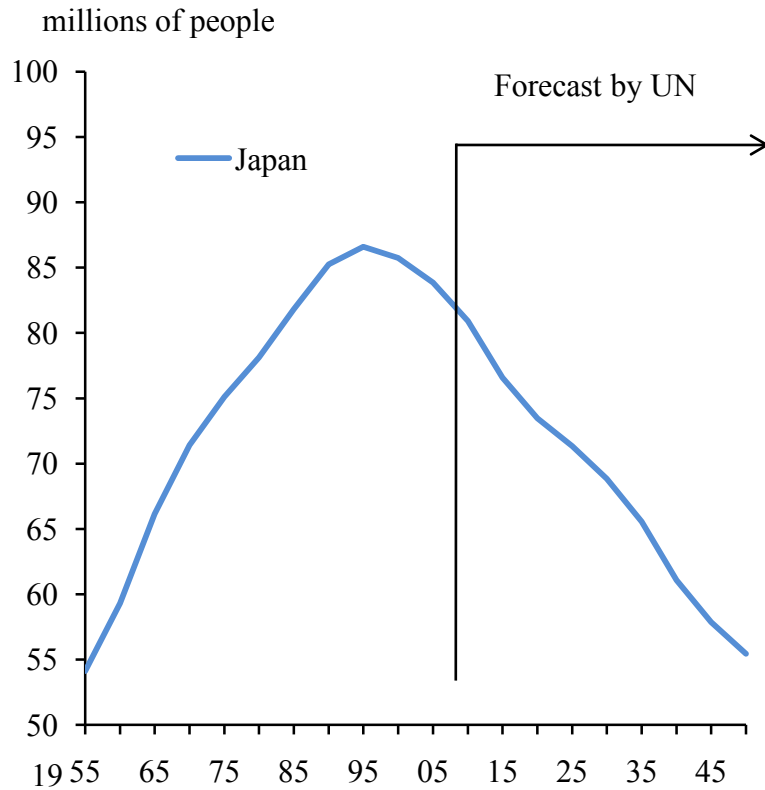


Note: Figures for Japan are adjusted for the changes in the consumption tax rate from 3 to 5 percent in April 1997.

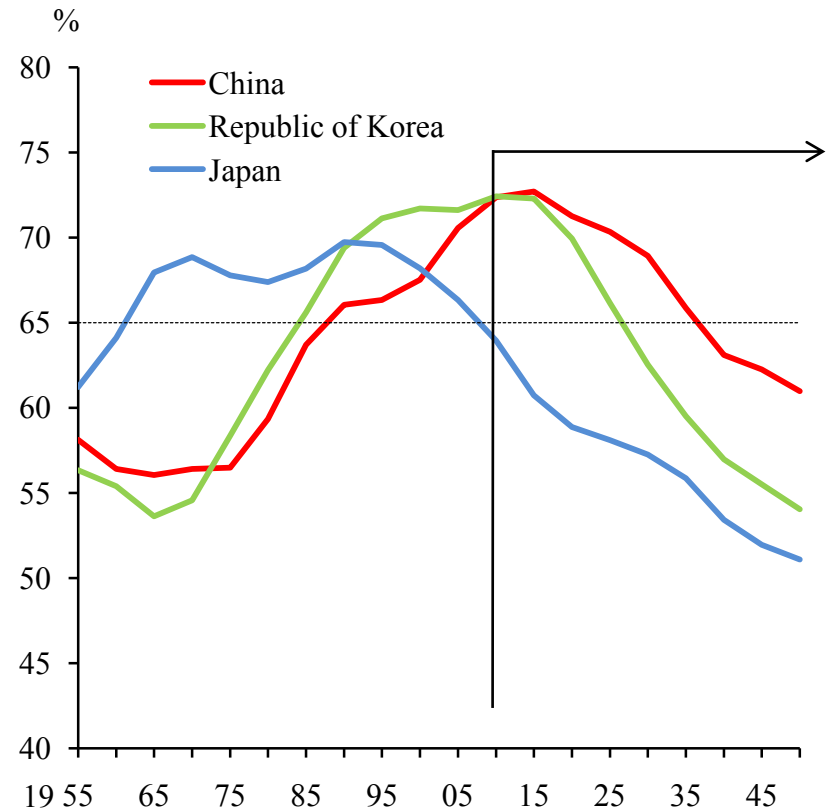
Sources: Ministry of Internal Affairs and Communications, "Consumer Price Index.;" Department of Labor; Bank of Japan, "Money Stock," "Monetary Base"; N. S. Balke and R. J. Gordon (1986).

Japan faces a sharp decline in its working-age population. Sooner or later, emerging economies are expected to face the similar challenges.

Working-Age Population in Japan



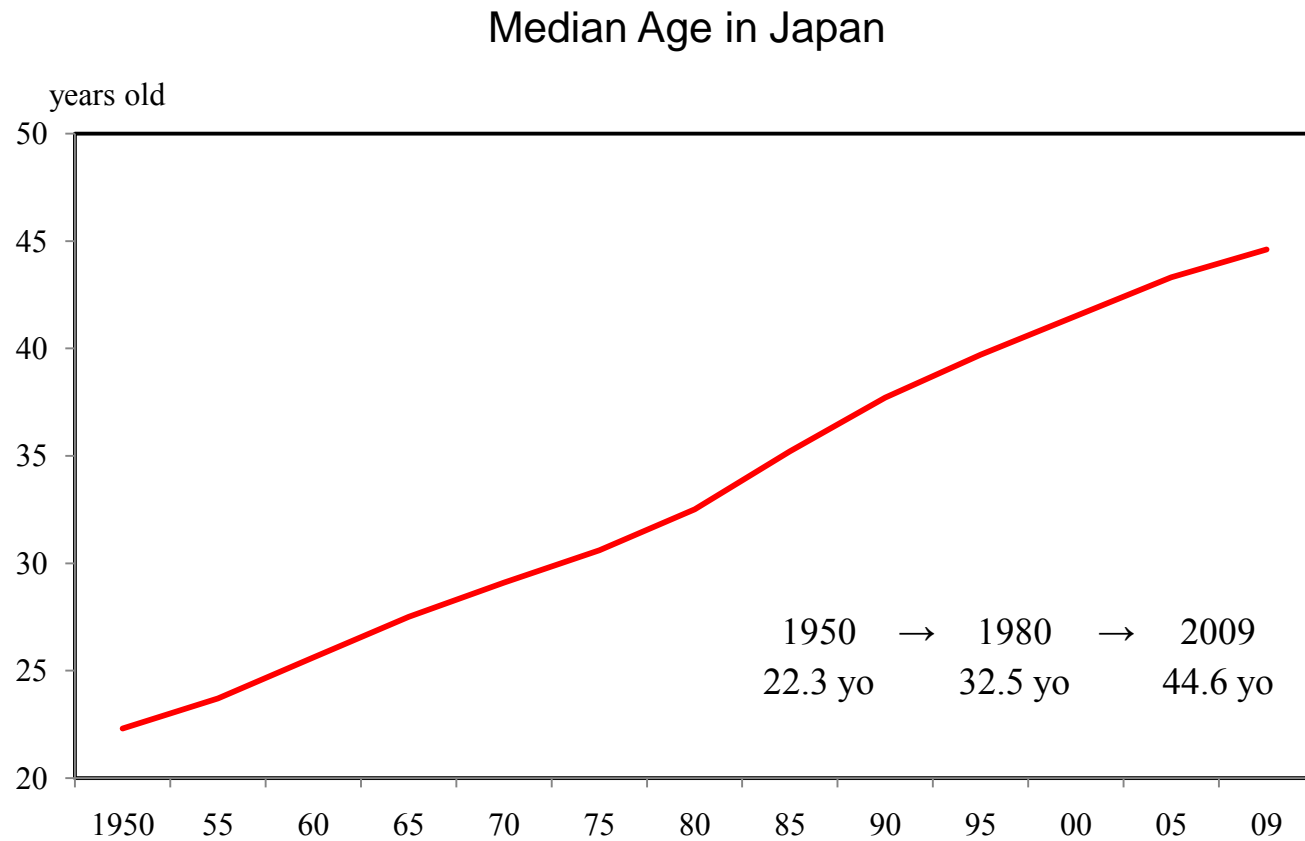
Share of Working-Age Population



Note: The working age is from 15 to 64 years old.

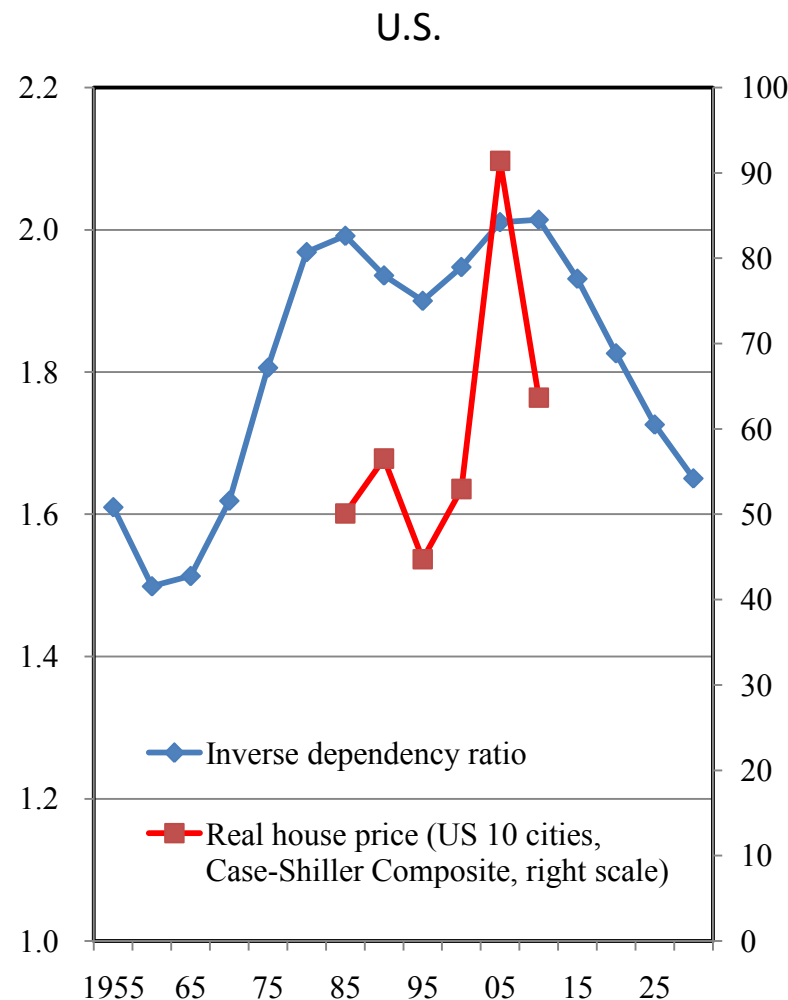
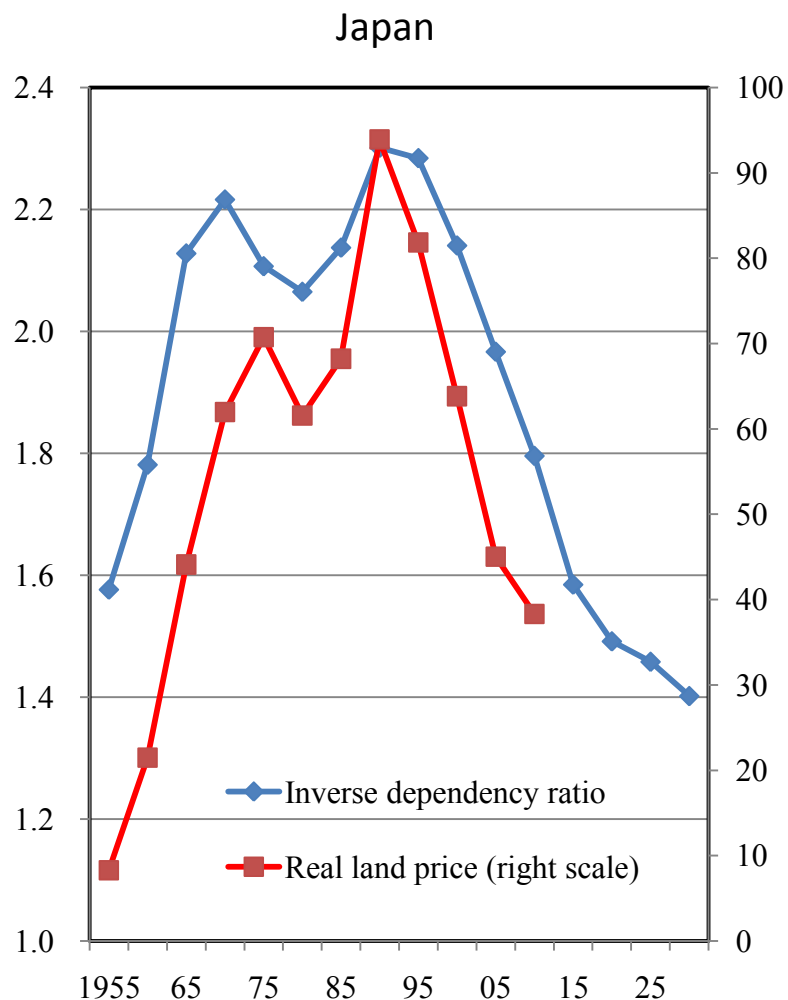
Source: United Nations, "World Population Prospects: The 2010 Revision."

The median age in Japan was 44.6 years in 2009. The median age of voters in Japan is expected to increase.



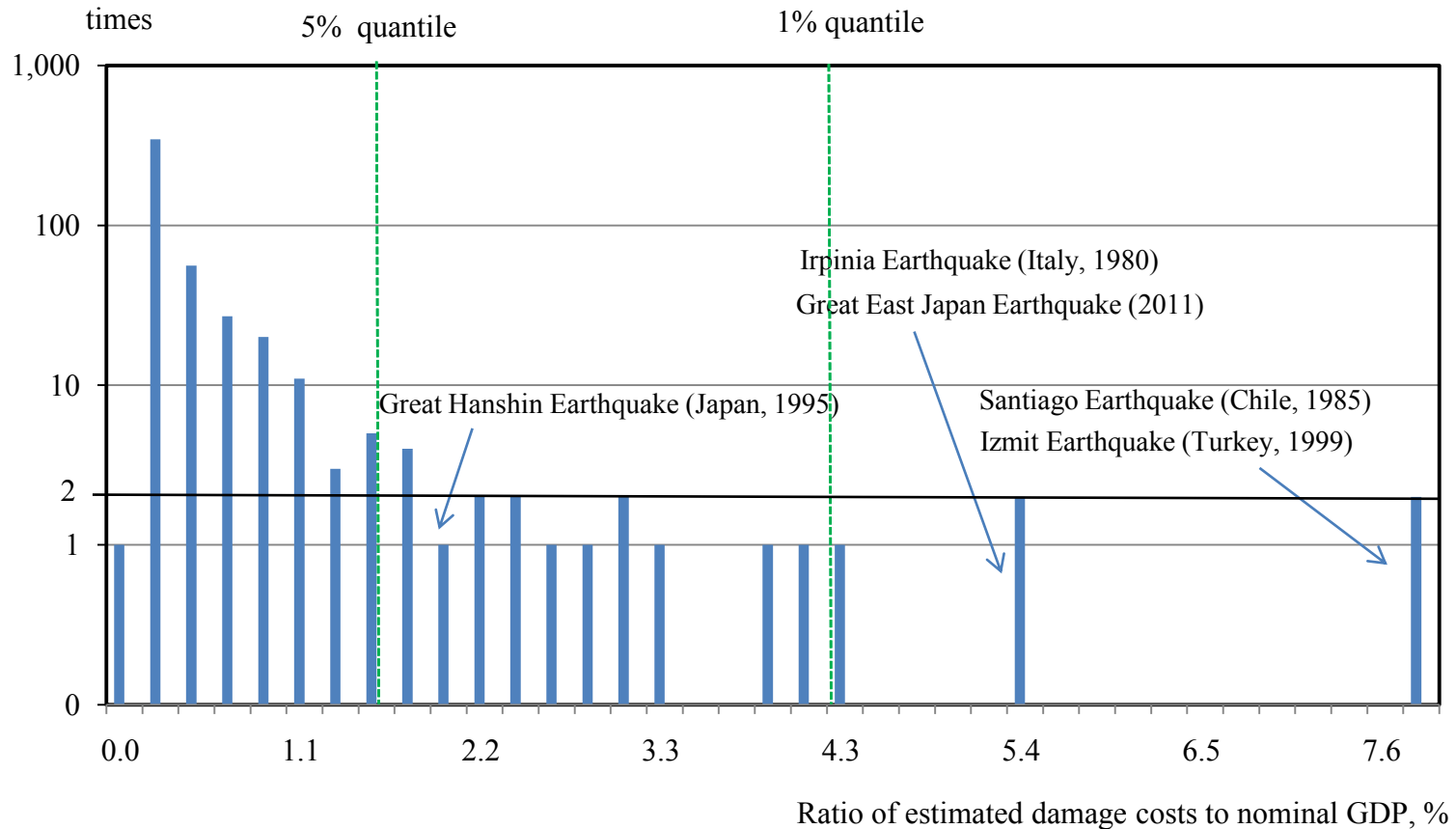
Source: National Institute of Population and Social Security Research.

In Japan, the inverse dependency ratio (the ratio of workers to non-workers) appears to be positively correlated with real estate market fluctuations.



Source: K. G. Nishimura, "This Time May Truly Be Different: Balance Sheet Adjustment under Population Ageing," remarks at the 2011 American Economic Association Annual Meeting in Denver, 2011.

Frequencies of Natural Disasters

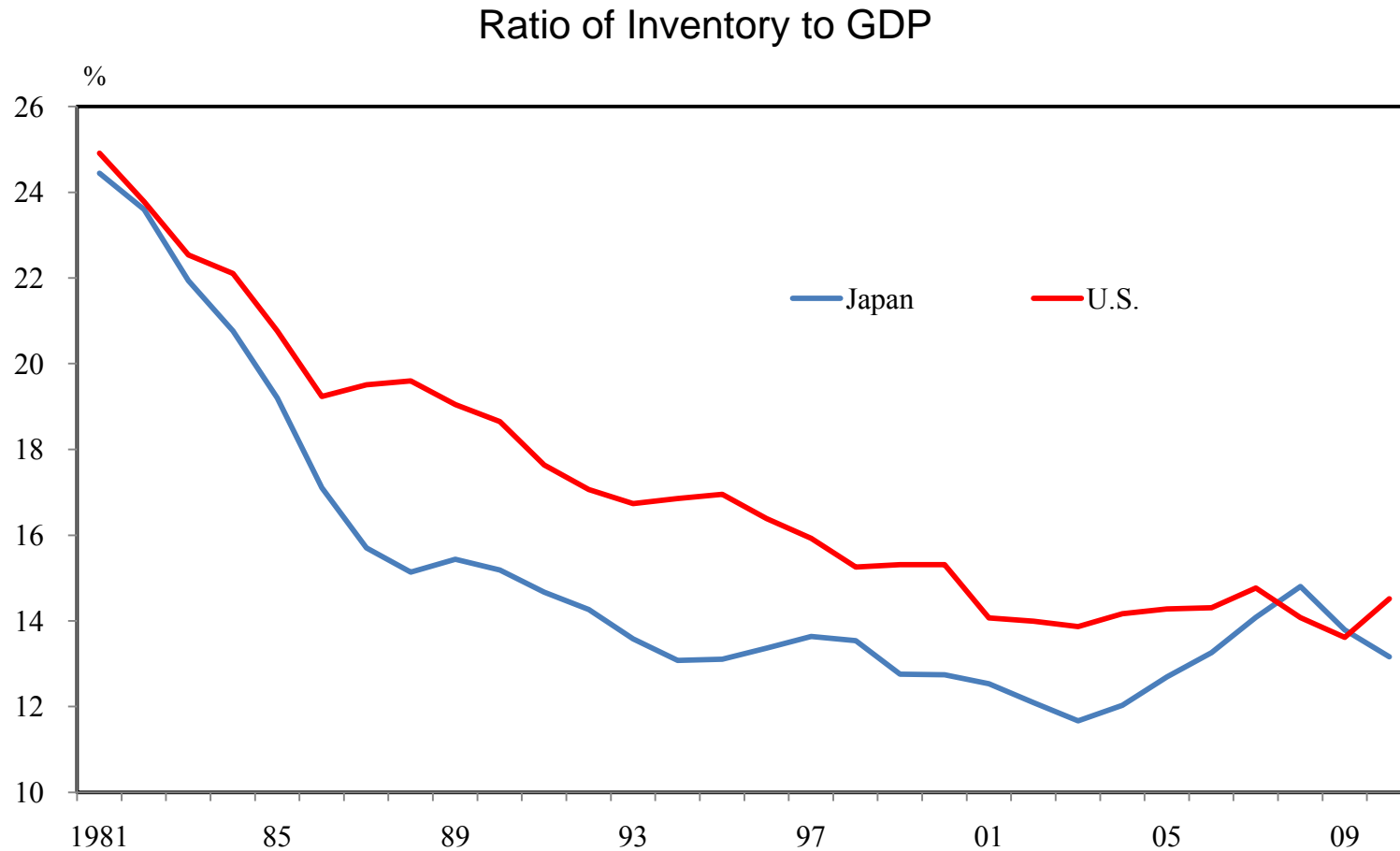


Notes: 1. The damage costs by Great East Japan Earthquake is estimated by the Cabinet Office. It is converted into U.S. dollars at the exchange rate at the end of March 2011 (\$1 = 82.84 Yen).

2. Damage costs include the damage to infrastructure, agricultural crops, and buildings.

Source: Center for Research on the Epidemiology of Disasters, Universite Catholique de Louvain, “Emergency Events Database (EM-DAT).”

The ratio of inventory to GDP is decreasing in both Japan and the U.S.



Sources: Cabinet Office, "National Accounts"; Department of Commerce.