

# How House Prices Affect the Consumption and Balance Sheets of Households—A Comparison of Japan, the U.S., and U.K.

by Tatsuya Ishikawa  
Economic Research Group  
ishikawa@nli-research.co.jp

## 1. Introduction

Land prices in Japan have been declining for over a decade. In 2003, the pace of decline eased in the Tokyo area, but began to accelerate again in other areas. Meanwhile, house prices have continued to rise, albeit at a slowing pace, in the U.S. and U.K. In these countries, thanks to healthy economies, households enjoy a vastly better situation compared to Japan not only with respect to house prices (for residential building and land), but in income, consumption, and wealth accumulation.

In both the U.S. and U.K., after stock markets peaked in late 1999 and then entered an adjustment phase, house prices and consumption have continued to perform well, lending support to the view that the wealth effect on consumption has been more pronounced in housing than shares. This has raised concerns that a plunge in house prices could trigger a strong vicious cycle.

Although it is not always clear what proportion of capital gains goes toward consumption, home mortgage refinancing has surged in recent years due to declining interest rates and rising collateral values of owner-occupied housing. Furthermore, a wide variety of household behavior has been reported on uses for the cash-out obtained from refinancing—home improvements, paying down other high-interest debt, and amassing more liquid financial assets to prepare for contingencies. Whether ultimately successful or not, these diverse actions share a common objective—to optimize balance sheets by taking advantage of rising house prices. Moreover, much of the phenomenon in the U.S. and U.K. can be attributed to their having the most advanced and free financial markets in the world. In any event, rising house prices have had far-reaching effects on how households refinance home mortgages, restructure household assets and liabilities, and make decisions on consumption, saving and investment. Indeed, the relationship between housing and household behavior appears to be more complex and intricate than previously thought.

Since the late 1990s, private financial institutions in Japan have aggressively expanded their home mortgage businesses, and the weight of home mortgages continues to grow in total

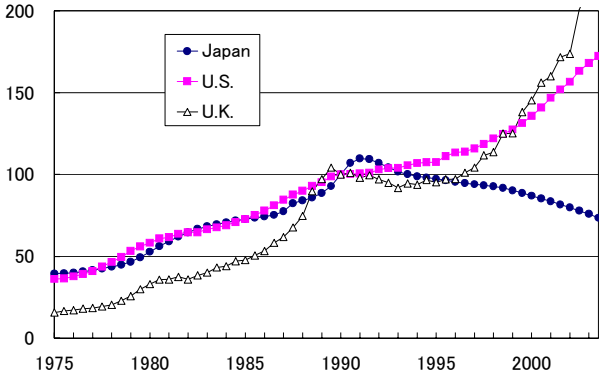
lending. Moreover, ahead of its reorganization into an independent administrative corporation, the Government Housing Loan Corporation has begun providing support to securitize home mortgages held by private financial institutions, which we predict will further increase correlations between home mortgages and overall financial instruments. While decisions of households clearly will be affected by the development of the securitized home mortgage market, not enough attention has been given to the economic significance of housing and mortgages in life-cycle household consumption and wealth accumulation.

In this paper, we compare households in Japan, the U.S., and U.K. and reexamine the role of home ownership and home mortgages for households. Looking beyond the difference in house price trends, we find many similarities with Japan in the importance of owner-occupied housing as primary wealth, and offer many valuable insights and lessons as well.

## 2. House Prices, Household Wealth, and Consumption

We first compare nominal and real land price trends from 1975 for Japan, the U.S., and U.K.

**Figure 1 Nominal House Prices in Japan, the U.S., and U.K.**

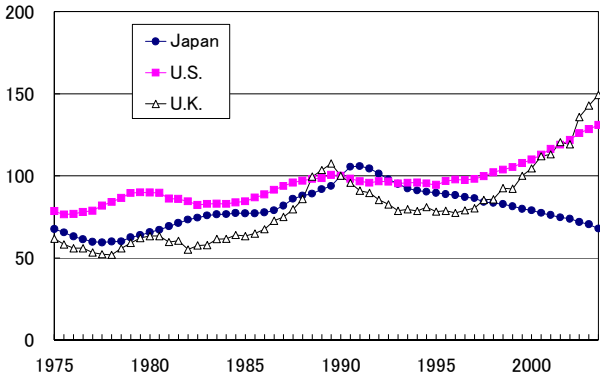


Notes: Prices are quoted in March and September. Indexed to March 1990 = 100.  
 Sources: Japan Real Estate Institute, *Urban Land Price Index*; U.S. Office of Federal Housing Enterprise Oversight (OFHEO), *House Price Index*; U.K. Office of the Deputy Prime Minister (ODPM), *House Price Index*.

As Figure 1 shows, nominal residential land prices in Japan surged in the late 1980s and then began declining in the early 1990s. In the U.K., while a similar up and down pattern is seen in the same time period, nominal house prices bottomed out in late 1993 and real house prices (calculated with the GDP deflator) in mid 1996, and both have risen consistently since then. Real house prices in the U.K. are characterized by a clear pattern of alternating upturns and downturns. Unlike Japan, where people have grown resigned to softening prices, most people in the U.K. are likely to understand that downturns will be followed by upturns based on experience. Nominal and real prices rose over 20% from mid 2002 to mid 2003, and

the slower yet continuing price increase has prompted concerns of overheating.

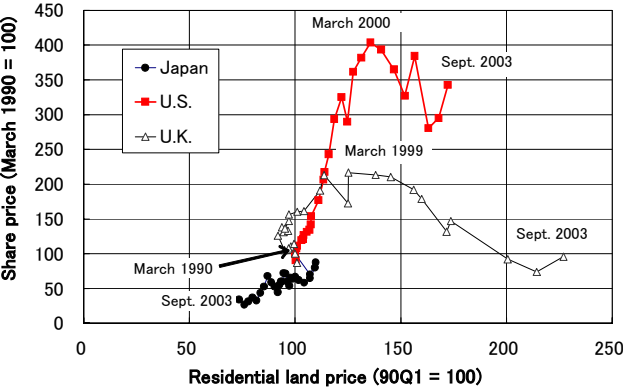
**Figure 2 Real House Price Trends in Japan, the U.S., and U.K.**



Notes: Prices are quoted in March and September. Indexed to March 1990 = 100.  
 Sources: Same as Figure 1, and Japan Cabinet Office, *Annual Report on National Accounts*; U.S. Dept. of Commerce, *Survey of Current Business*; U.K. Office of National Statistics, *Blue Book*.

In the U.S., nominal house prices have not declined at the national level, but prices did fall in almost half the states from the late 1980s to early 1990s, causing the failure of numerous saving and loan associations involved in high-risk real estate investment.

**Figure 3 House Price and Share Price Trends Since the 1990s in Japan, the U.S., and U.K.**



Notes: Prices are quoted in March and September. Indexed to March 1990 = 100.  
 Sources: Japan Real Estate Institute, *Urban Land Price Index*; Office of Federal Housing Enterprise Oversight (OFHEO), *House Price Index*; Office of the Deputy Prime Minister (ODPM), *House Price Index*.

In real terms, prices declined at the national level immediately after the second oil shock from 1980 to 1983 and again in the early 1990s. However, prices began rising in the mid 1990s, and as in the U.K., the pace has accelerated since 2000.

While the rate of price increase is not at record levels in the U.S. or U.K., recent house price trends raise concerns when considered in relation to share prices. While share prices rose in the 1990s against the backdrop of productivity growth, this was followed by a decline in 2000 and downturn until mid 2003. By comparison, house prices have risen consistently and at an

accelerating pace.

In contrast, land prices in Japan plunged during the 1990s, with the pace of decline slowing in the late 1990s but accelerating again in the 2000s. The accelerating decline in land prices in 2003 even as share prices recovered stands in sharp contrast to the situation in the U.S. and U.K.

**Figure 4 Composition of Household Net Worth (Japan, U.S., U.K.)**

	(% of disposable income)								(%)
	① Net worth	② Financial assets		③ Non-financial assets		④ Liabilities		Home mortgage	
	= ②+③-④	Shares		Own home		Home mortgage		÷ Own home	
<b>Japan</b>									
1992	918	368	37	521	419	121	42	10	
1993	835	382	38	495	399	120	44	11	
1994	769	399	47	474	383	120	47	12	
1995	752	412	46	455	367	124	50	13	
1996	749	422	41	451	366	124	53	15	
1997	738	425	37	439	358	130	55	15	
1998	747	422	26	425	348	126	55	16	
1999	737	458	49	417	344	127	58	17	
2000	720	464	43	409	339	126	60	18	
2001	748	477	39	398	331	127	62	19	
2002	746	481	43	380	317	128	62	20	
<b>U.S.</b>									
1992	454	296	59	270	146	112	59	40	
1993	463	309	64	267	146	113	60	41	
1994	451	303	58	263	142	114	60	42	
1995	486	337	75	267	145	118	61	42	
1996	506	361	84	265	144	121	62	43	
1997	540	397	102	267	144	124	63	43	
1998	562	420	109	271	147	129	64	44	
1999	611	467	133	280	154	136	67	44	
2000	563	420	102	283	157	140	68	43	
2001	543	395	83	296	169	148	73	43	
2002	488	340	58	297	173	150	76	44	
<b>U.K.</b>									
1992	568	357	56	325	261	114	82	31	
1993	606	400	64	316	250	111	81	32	
1994	566	379	60	298	241	112	83	34	
1995	578	408	64	281	227	111	81	36	
1996	594	413	63	291	236	109	81	34	
1997	644	460	77	293	241	109	79	33	
1998	696	482	78	327	271	113	82	30	
1999	786	545	100	358	295	117	85	29	
2000	769	507	89	381	315	119	86	27	
2001	704	444	60	382	317	122	88	28	
2002	704	389	44	450	376	134	98	26	

Notes: U.S. data has been adjusted to include individual proprietorships (non-farm unincorporated businesses) like Japan and the U.K. Owner-occupied home includes land (partially estimated).

Sources: Cabinet Office, *Annual Report on National Accounts*; Ministry of Land, Infrastructure and Transport, *Official Published Land Prices*; Ministry of Public Management, Home Affairs, Post and Telecommunications, *Summary of Taxable Base for the Property Tax*; Bank of Japan, *Flow of Funds Accounts*; U.S. Department of Commerce, *Survey of Current Business*; U.K. ONS, *Blue Book*.

These asset price trends have significantly impacted household balance sheets, particularly in the balance between financial and non-financial assets. Although Japan used to be characterized by a preponderance of non-financial assets centered around residential property, the situation has reversed—financial assets are now significantly larger than non-financial assets. But while the ratio of financial assets to disposable income has steadily

risen, the ratio of net worth to disposable income has not changed by much since 1995 due to large capital losses. This is partly due to the plunge in household savings rate since the late 1990s, which has reduced the role of savings in wealth accumulation.<sup>1</sup>

The U.S. and U.K. have several patterns in common. In both countries, net worth increased robustly until 1999, but then fell as stock markets declined and reduced the value of financial assets. Meanwhile, non-financial assets have grown significantly centered around owner-occupied homes, while home mortgages and other liabilities have risen sharply. In the U.K., where housing-related trends have been more pronounced, total non-financial assets exceeded total financial assets at the end of 2002.

The ratio of home mortgage to value of owned homes has continued to rise in Japan, but has stabilized in the U.S., and fallen slightly below the peak level in the U.K. However, we must note that aggregated data for the household sector does not necessarily reflect the behaviors and conditions at the individual household level; since inequalities exist in household income and wealth, the results should not be construed to represent standard households.

Moreover, National Accounts and Flow of Funds data do not provide a simple aggregation of individual households, but instead defines the household sector macroeconomically to include non-incorporated businesses such as self-employed enterprises and individual proprietorships (Japan and U.K.), and nonprofit institutions serving households (U.S. and U.K.). While home mortgages comprise the bulk of household liabilities in all three countries, Japan has a relatively high ratio of non-mortgage liabilities to disposable income due to the inclusion of debt of non-incorporated business.

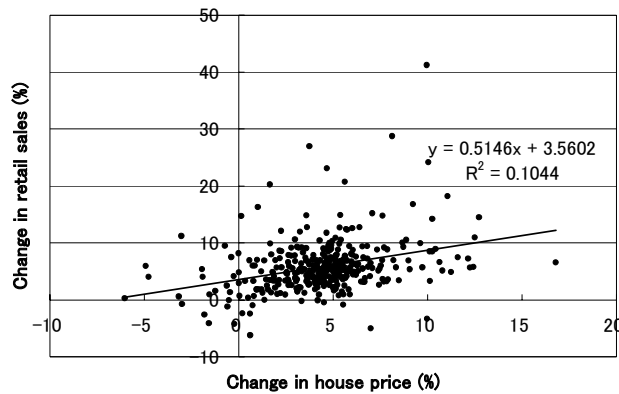
Thus to reach conclusions about household wealth accumulation and the relationship between asset/liability combinations and consumption/saving choices, we must also examine sample surveys of individual households.

We first try to confirm whether a close relationship actually exists between house prices and consumption at the aggregate level. However, due to the recentness of this new focus, the available time series data is still insufficient. To remedy this deficiency, we increased the number of data sets by pooling together several years' worth of regional data. The results are plotted in Figures 5, 6 and 7.

---

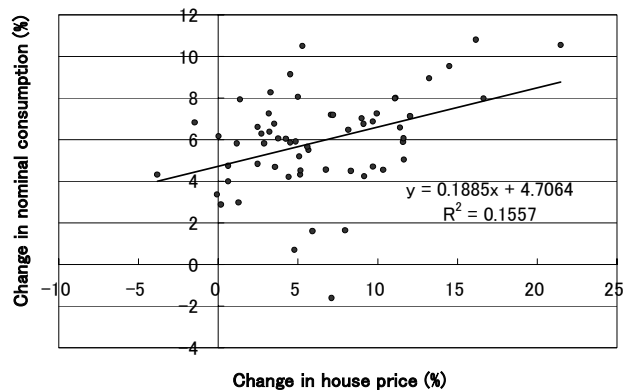
<sup>1</sup> Since a declining yet positive savings rate still contributes to net worth, the direct cause of the decrease in net worth is capital loss. Moreover, although retired households liquidate financial assets and not housing assets, financial assets have increased as working generations accumulate financial assets, while their capital losses from residential land exceed new housing investment.

**Figure 5 Retail Sales and House Prices in the U.S. (51 states; 1994-2001)**



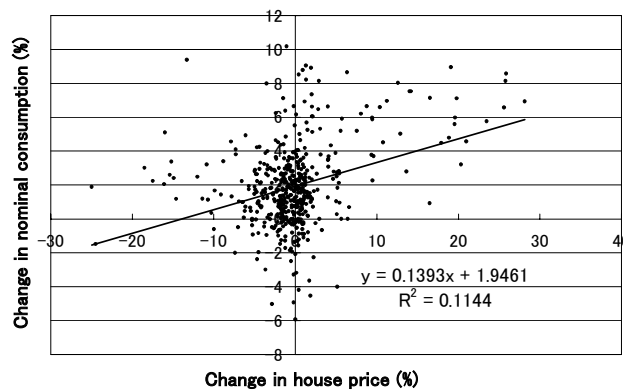
Note: Outlying data points are excluded.  
Sources: U.S. Census Bureau, *Statistical Abstract of the United States*; OFHEO, *House Price Index*.

**Figure 6 Consumption and House Prices in the U.K. (12 regions; 1995-1999)**



Sources: U.K. ONS, *Blue Book*, and *Regional Accounts*.

**Figure 7 Consumption and Residential Land Prices in Japan (47 prefectures; 1991-2000)**



Source: Cabinet Office, *Annual Report on Regional Accounts*; MLIT, *Official Published Land Prices*.

In the U.S. and U.K., a positive correlation is evident between house prices and consumption. However, since house prices may reflect changes in other factors that influence consumption, the effect of house prices on consumption is not necessarily direct. In Japan, the strength of

the relationship varies depending on how the reference period is chosen.<sup>2</sup>

The correlation with consumption is one reason that policymakers at the Federal Reserve Board and Bank of England, as well as the IMF and OECD, tend to emphasize house prices more than share prices. Another important reason is the fact that financial assets are largely concentrated among a minority of wealthy households. Indeed, if owner-occupied housing is excluded from wealth (which approximates net financial assets), the wealthiest 1% of households own 33% of the total market value of assets in the U.K., and 43% in the U.S.

**Figure 8 Concentration of Household Wealth**

	Japan 1999		U.S. 2001		U.K. 2001	
	Top 1%	Top 10%	Top 1%	Top 10%	Top 1%	Top 10%
Financial assets	—	39.3	31.5	72.0	—	—
Net worth (excl. owned home)	—	—	43.2	84.4	33	72
Net worth	—	—	32.3	69.7	23	56

Source: MPMHAPT, *National Survey of Family Income and Expenditure*; U.S. FRB, *Survey of Consumer Finances*; U.K. Inland Revenue.

Thus rising share prices are not as likely to benefit ordinary households as much as rising house prices. Moreover, as collateral values of owner-occupied homes increase, distinct changes have been observed in household behavior, including the increase in home mortgage refinancing.

### 3. Significance of Housing at the Household Level

Survey data reveals the average household's financial profile in the three countries.

**Figure 9 Average Household Assets and Liabilities in Japan (1999)**

	¥ million	
Net worth (median)	23.826	
Net worth (mean)	38.689	(100%)
Financial assets	13.042	(34%)
Stocks	1.608	(4%)
Non-financial assets	29.962	(77%)
Owner-occupied home	23.187	(60%)
Liabilities	-4.315	(-11%)
Home mortgage	-3.739	(-10%)

Note: For all households, including single-person households.  
Source: MPMHAPT, *National Survey of Family Income and Expenditure*.

<sup>2</sup> According to a survey by the Ministry of Economy, Trade and Industry (*Effects of Asset Deflation on Companies and*

**Figure 10 Average Household Assets and Liabilities in the U.S. (2001)**

	(\$1,000)	
Net worth (median)	86.1	
Net worth (mean)	395.5	(100%)
Financial assets	189.0	(48%)
Stocks	40.8	(10%)
Non-financial assets	261.0	(66%)
Owner-occupied home	122.1	(31%)
Liabilities	-54.4	(-14%)
Home mortgage	-40.9	(-10%)

Note: For all households, including single-person households.  
Source: FRB, *Survey of Consumer Finances*.

**Figure 11 Average Household Assets and Liabilities in the U.K. (2001)**

	(£ )	
Net worth	123,807	(100%)
Financial assets	79,814	(64%)
Stocks	17,477	(14%)
Non-financial assets	62,554	(51%)
Owner-occupied home	57,816	(47%)
Liabilities	-18,561	(-15%)
Home mortgage	-5,615	(-5%)

Note: For all households age 18 to 64 including single persons, with bequests of the deceased.  
Source U.K. Inland Revenue

What becomes clear is that in all three countries, the single most valuable asset of households is their owner-occupied home. In addition, for Japan and the U.S., home mortgages comprise the majority of liabilities. And while a quick glance at macroeconomic data suggests that U.S. households are prone to invest in shares, shareholdings actually comprise only 10% of their net worth—this despite the bias toward high-income and wealthy households in the survey sample.

The overall averages shown above, which include households that hold no assets or liabilities, can be restated as the mean value for households with holdings, multiplied by the ratio (probability) of households with holdings. If the mean value for households with holdings is high but the ownership ratio is low, the overall average conveys a distorted image of the standard household.

Thus we compared ownership ratios for owner-occupied homes and shares in the three countries (Figure 12).

---

*Households*, October 2003), 42.1% of landowners said they have reduced consumption due to declining land prices.



**Figure 12 Home Ownership and Share Ownership Ratios**

(%)

Survey year	Households surveyed	All ages	Age of householder:						
			< 35	35~44	45~54	55~64	65~74	75 +	
<b>Owner-occupied home</b>									
Japan	1999	Non-single	77.0	<i>36.8</i>	<i>67.7</i>	<i>83.8</i>	<i>88.7</i>	<i>90.5</i>	87.5
		All	66.7	<i>20.9</i>	<i>60.7</i>	<i>76.7</i>	<i>81.8</i>	<i>84.2</i>	80.1
U.S.	2001	All	67.7	39.9	67.8	76.2	83.2	82.5	76.2
U.K.	2000/2001	All	69.0	53.1	74.0	77.0	77.6	72.0	63.7
<b>Shares, etc.</b>									
Japan	2003	Non-single	18.6	-	-	-	-	-	-
	1999	Non-single	19.0	<i>7.6</i>	<i>14.3</i>	<i>19.0</i>	<i>25.0</i>	<i>25.0</i>	22.6
U.S.	2001	All	21.3	17.4	21.6	22.0	26.7	20.5	21.8
U.K.	2000/2001	All	25.0	17.7	25.0	30.0	<i>32.1</i>	27.0	<i>21.3</i>

Note: Shares, etc. include stock investment trusts for Japan, and corporate bonds, local government bonds and foreign bonds for the U.K.. Numbers in italics are averages weighted by sample size to make age group data uniform.  
Sources: MPMHAPT, *National Survey of Family Income and Expenditure*; FRB, *Survey of Consumer Prices*; U.K. ONS, *Family Resources Survey*.

In all three countries, while approximately 70% of households have owner-occupied homes, only a minority of about 20% own shares. The countries also show a similar ownership pattern by age group—ownership ratios for both homes and shares increase with age. Since net worth grows by saving out of annual disposable income, and peaks immediately before retirement, the age pattern of ownership pattern is thought to reflect a decreasing risk aversion toward holding volatile assets.

On the other hand, since risk aversion toward asset price volatility tends to increase as people approach the end of life, the share ownership ratio tends to decline after retirement. However, this tendency is not very pronounced in Japan. Another difference is that the home ownership ratio for persons below age 35 is relatively high in the U.K. and low in Japan.

Overall, however, it is fair to say that in all three countries, owner-occupied homes are the single most important asset over the life cycle of standard households. In that sense, it is very rational for households in the U.S. and U.K. to take advantage of house price appreciation by restructuring balance sheets and changing allocations between consumption and saving. Given a similar environment, households in Japan would very likely act in the same way.

Because fluctuations in home values can create broad wealth effects that impact household consumption and the economy, policymakers pay close attention to house price trends.

However, we must also note that extremely large inequalities exist in wealth distribution between owner-occupants and renters.

**Figure 13 Income & Wealth Inequality Between Owner-Occupants and Renters**

	Owner-occupant	Renter
<b>Japan 1999</b>		
Net worth (median)	¥ 37.812 mil.	–
Net worth (mean)	¥ 54.057 mil.	¥ 7.955 mil.
Annual income (mean)	¥ 7.335 mil.	¥ 4.809 mil.
<b>U.S. 2001</b>		
Net worth (median)	\$ 171,700	\$ 4,800
Net worth (mean)	\$ 558,100	\$ 55,000
Annual income (mean)	\$ 85,100	\$ 32,200
<b>U.K. 2001/2002</b>		
Weekly income (median)	£390	(public) £160 (private) £240
Weekly income (mean)	£490	£239

Source: Same as in Figure 12, and U.K. ONS, *Housing Statistics 2003*.

#### 4. Collateral Value Growth and Mortgage Refinancing

As stated earlier, in the U.S. and U.K., home mortgage refinancing has increased significantly in recent years against the backdrop of low interest rates and the growth collateral value of homes. While the best way to measure the impact of refinancing is to use panel studies of the same households over several years, such data is not available. Thus we decided to examine all owner-occupant households with home mortgages from a different perspective.

First, we point out the basic fact that owner-occupants with home mortgages have higher incomes than those without mortgages. Since mortgages are conditioned on the borrower's ability to repay the loan, as long as income rises in the future and the repayment plan is feasible, there is nothing wrong with carrying a mortgage that is large relative to income.

**Figure 14 Income of Owner-Occupants With and Without Mortgage (Japan, U.S., U.K.)**

	Japan 2002 (avg. annual income)	U.S. 2001 (median annual income)	U.K. 2001/2002 (avg. weekly income)
① Owner, with home mortgage % of households	¥7.76 mil. 47%	\$60,942 62%	£560 59%
② Owner, without home mortgage % of all households	¥6.24 mil. 53%	\$30,225 38%	£390 41%

Note: For Japan, data covers working households with at least two persons.  
Sources: MPMHAPT, *Family Income and Expenditure Survey*; U.S. Census Bureau, *American Housing Survey for the United States: 2001*; U.K.ONS, *Housing Statistics 2003*.

**Figure 15 Standard Terms & Conditions at Start of Mortgage (Japan, U.S., U.K.)**

	Japan 2002	U.S. 2002/2003	U.K. 2002
① House price/annual income	5.47	2.48	3.54
② Loan-to-value ratio	76.0%	75.1%	65.9%
③ Loan to annual income ratio	4.16	1.86	2.33
④ Term of home mortgage	31.9 years	27.3 years	23 years
⑤ First-time buyer ratio	88.9%	40%	31.9%

Sources: Government Housing Loan Corporation, *Survey Report of GHLC Borrowers (For Purchase of Built-for-Sale Homes)*; Federal Housing Finance Board, *Monthly Interest Rate Survey*; National Association of Realtors, *Profile of Home Buyers and Sellers*; U.K. ONS, *Housing Statistics 2003*.

In comparing loan-to-value ratios and terms of maturity in the three countries, we find that Japanese households accept rather bold terms and conditions at the start of a new mortgage contract compared to their counterparts. Future principal and interest payments relative to income are also slightly larger than in the other countries.<sup>3</sup>

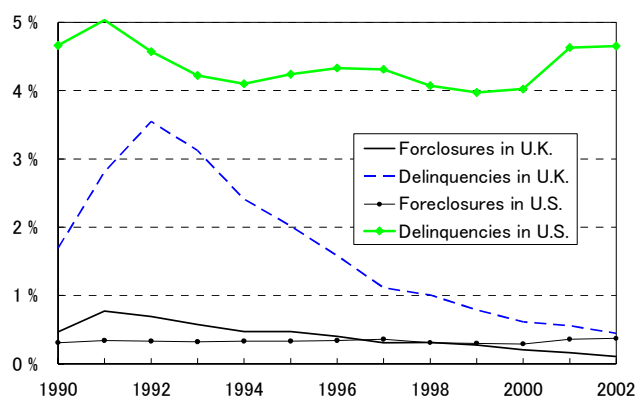
**Figure 16 Loan Payment to Income Ratio for Owner-Occupants with Mortgages**

	Japan 2002	U.S. 2001	U.K. 2000/2001
Mortgage payment/Pretax income	16.7%	13.3%	14%

Sources: Same as Figure 14 for Japan and the U.S. For the U.K., ODPM, *Housing in England*.

Regarding the status of repayment, the proportion of delinquencies and foreclosures among all home mortgages has steadily declined in the U.K., but edged upward in the U.S. from 2001, though still not noticeably high compared to past levels. Conditions may worsen in the future if unemployment rises or incomes drop sharply among households with mortgages.

**Figure 17 Proportion of Delinquencies and Foreclosures in Mortgages (U.S., U.K.)**



Sources: U.S. Department of Housing and Urban Development, *U.S. Housing Market Conditions*; U.K. ONS, *Housing Statistics 2003*.

<sup>3</sup> While income should include imputed rent derived from owner-occupied homes, since imputed rent data at the household level was unavailable for the U.K., our comparison is based on pretax cash income.

For home mortgages in the U.S. and U.K., two critically important factors in the economic environment are rising house prices and declining interest rates. While rising house prices clearly impede first-time buyers, households that already own homes benefit from the growth in collateral home values, which enables them to increase the amount of their home mortgage or to refinance. Particularly in the U.K., where house prices have risen significantly, the proportion of first-time homebuyers has declined, while the proportion of home mortgage users age 55 and above has risen. In contrast, the proportion of first-time homebuyers in Japan has risen in recent years.

**Figure 18 Refinancing as a Proportion of Newly Originated Mortgages (U.S. and U.K.)**

	U.K.			U.S.
	Broad definition	Narrow definition	Mortgage increase	(%)
1996	31.7	28.0	3.7	28.8
1997	21.3	17.9	3.4	29.2
1998	28.9	25.6	3.4	50.3
1999	28.8	24.6	4.3	35.7
2000	33.8	28.4	5.4	19.3
2001	37.4	31.3	6.1	56.6
2002 Q1	42.9	36.9	6.0	59.3
2003 Q1	55.8	48.5	7.4	70.9
Q2	55.8	48.6	7.2	-
Q3	49.4	42.4	7.0	-

Source: U.K. Council of Mortgage Lenders, *Survey of Mortgage Lenders*; Mortgage Bankers Association of America.

Moreover, in the U.S. and U.K., the proportion of refinancing in newly originated home mortgages has risen sharply. Due to falling interest rates, increasing the size of the outstanding mortgage by refinancing actually does not increase the future repayment burden. In the U.S., where most households (87%) have chosen fixed-rate mortgages, a growing number are refinancing using fixed-rate mortgages to take advantage of low interest rates. Surprisingly, in the U.K., variable rate mortgages are prevalent (73%).<sup>4</sup> While mortgages in Japan and the U.S. usually combine interest and principal payments, 36% of existing mortgages in the U.K. are “endowment mortgages” that require only interest payments until maturity. This absence of principal payments may reduce the sense of burden even when interest rates rise. However, these mortgages now account for only 10% of new mortgages.

An important factor in deciding whether to refinance a home mortgage is the intended objective. When households borrow more than they need to pay off their former mortgage and raise funds from cash-out refinancing, it is important how they use the funds.

<sup>4</sup> Only 24% use flexible mortgages, in which borrowers can arrange to reset or miss monthly payments.

**Figure 19 Reasons for Refinancing in the U.S.**

Total households refinancing	11,133,000
To get lower interest rate	8,877,000
To receive cash	1,579,000
To reduce payment period	1,318,000
To increase payment period	319,000
To renew or extend a loan that has fallen due	204,000
Other	1,504,000

Note: Multiple response

Source: U.S. Census Bureau, *American Housing Survey for the United States: 2001*.

Households would not change their behavior unless they regarded their owner-occupied home as wealth, or house price increases as being permanent increases in wealth. If they simply regarded the wealth increase from rising house prices as an increase in whole life income, they would consume the wealth rather than refinance the loan. Stated differently, refinancing is in itself evidence that the objective is not simply to increase consumption.<sup>5</sup> What, then, is the aim of refinancing?

Whether on a macroeconomic or household basis, the following two identities for changes in net worth help us to answer this question.

- ① Net worth increase = Saving + Capital gain  
= Disposable income – Consumption + Capital gain
- ② Net worth increase = Financial asset increase + Non-financial asset increase  
– Liability increase  
= Financial asset increase + Home value increase  
+ Other non-financial asset increase – Mortgage increase  
– Other liability increase

Needless to say, identity ① describes the sources of increase in net worth, and identity ② describes changes in the balance sheet structure. Combining the two produces identity ③:

- ③ Capital gain + Mortgage increase = Financial asset increase + Home value increase +  
Other non-financial asset increase + Other liability  
decrease + Consumption – Disposable income

If house prices rise, capital gain on the left side of identity ③ increases by the same amount as home value on the right side. In the case of refinancing, homeowners take advantage of this and voluntarily increase the size of the loan, making the second term on the left side positive. One or more terms on the right side must then change—increase in financial assets, increase in home value or other non-financial assets, decrease in liabilities other than the home mortgage, or increase in consumption.<sup>6</sup> Except for consumption, all these changes will

<sup>5</sup> However, home equity loans, which are used for non-residential objectives have grown as a proportion of outstanding home mortgages of U.S. households since the late 1990s, reaching 14% in June 2003.

<sup>6</sup> The BOE's "mortgage equity withdrawal" indicator, whose main component is defined as an increase in home mortgage

affect the structure of the balance sheet.

According to survey results on the actual use of cash-outs from refinancing, a portion is indeed used for consumption. But if house prices turn downward, this effect is sure to fade.<sup>7</sup>

**Figure 20 Uses of Funds Liquefied in Refinancings (U.S.)**

	(%)	
	Share of loans	Share of dollars
Repayment of other debts	51	26
Home improvements	43	35
Consumer expenditures	25	16
Financial investment	13	11
Real estate or business investment	7	10
Taxes	2	2

Notes: Multiple response. Survey conducted in 2001-2002.  
Source: FRB, "Mortgage Refinancing in 2001 and Early 2002," *Federal Reserve Bulletin*, December 2002.

**Figure 21 Uses of Withdrawn Mortgage Equity (U.K.)**

	(%)
Home improvement of owner-occupied home	76
New goods for the property	22
Car	7
Other goods	5
Holiday	5
General expenditure	10
Other	15

Notes: Multiple response. Survey conducted in 1998-2000.  
Source: BOE, "Mortgage Equity Withdrawal and Consumption," *Quarterly Bulletin*, Spring 2001.

On the other hand, repaying other debt or investing in other assets are significant not only in the present, but function as precautionary measures in case the economy deteriorates in the future. Reducing interest payments allows borrowers to continue repaying debt even if income declines, while accumulating liquid assets helps prepare them in case of unemployment.

While the U.S. and U.K. have advanced consumer credit markets, households still face similar borrowing conditions and liquidity constraints as in Japan—the only large loans available are home mortgage loans. Liabilities other than home mortgages entail higher interest rates.

As interest rates decline, Japanese households have been restructuring balance sheets by reducing the mortgage payment period, and if the environment improves, are quite likely to

---

minus residential investment, is clearly derived from this identity.

<sup>7</sup> Instead of refinancing, if an "advanced mortgage" is increased to buy a more expensive home or invest in real estate, an investment objective also comes into play in anticipation of further price increases. When house prices turn downward, such activities are predicted to decrease sharply.

take advantage of changes in the collateral value of owner-occupied housing to refinance like their foreign counterparts.

## **5. Conclusion**

Looking only at house prices and land prices, the situation in Japan contrasts sharply with that in the U.S. and U.K.

However, if we objectively observe the relationship between households and owner-occupied homes, many striking similarities emerge. First, owner-occupied homes comprise the largest single asset of standard households. Second, home mortgages comprise the largest liability of households, and at the same time are a convenient financing method from the perspective of interest rates and flexibility of terms and conditions.

As a result, in the U.S. and U.K., rising home equity values not only enable households to expand consumption, but provide the opportunity to refinance with larger loans and actively restructure balance sheets. Considering the many similarities shared with households in the U.S. and U.K., Japanese households quite possibly will act in the same way if the right conditions appear.

Unlike the U.S. and U.K., refinancing in Japan implies nothing but a change of lending institutions. Moreover, since land prices have not been rising, households cannot take advantage of rising home equity values to refinance. But they might want to consider an alternative suited to Japan's conditions and refinance by decreasing the loan size.

In fact, such a home mortgage loan has already been offered by lending institutions. While the loan is not necessarily limited to moving to a house with a lower market price than the present home, if the equity value of the present home is less than the outstanding loan, then selling the present home, buying a lower value home, and refinancing will decrease the debt by the difference in house price. If the loan also suits the borrower's ability to pay, refinancing will benefit both the lender and borrower.

As for the relationship between the housing market, households and home ownership, a decisive difference between Japan and the other two countries is the low liquidity of Japan's existing home market. New homes comprise the majority of transactions in Japan, whereas existing home transactions are more prevalent in the U.S. and U.K.

**Figure 22 Existing Home Transactions (Japan, U.S., U.K.)**

	Japan (1997)	U.S. (2002)	U.K. (2002)
Ratio of existing home transactions to new housing starts	0.12	3.67	7.36

Sources: MPMHAPT, *Housing and Land Survey*, U.S. Census Bureau, *New Residential Sales*; U.K. ONS, *Housing Statistics 2003*.

In the U.S. and U.K., households move frequently due to life cycle circumstances or economic conditions. Even when only a slight price difference exists between present and next house, each transaction entails financing arrangements, which naturally ties together the housing and financial markets. It is precisely because the existing home market is liquid that households can take advantage of rising collateral values of owned homes, and choose among alternative actions to restructure balance sheets or expand consumption.

The recent growth in refinancing in the U.S. and U.K. can be attributed to the choices made by households given the prevailing economic environment, rather than to a popular trend.

For households to be able to choose their most desirable homes from among diverse alternatives—and to change past choices and adjust to current personal and economic conditions—Japan's existing home market urgently needs to be stimulated.

Finally, amid growing concerns of a reversal in house price trends in the U.S. and U.K., the pace of refinancing in the U.S. has been slowing down. A price downturn would, of course, depress consumption and residential investment. Had household balance sheets not been restructured at all, the impact would be particularly strong in the U.K., where prices have risen significantly and young persons enjoy a high home ownership ratio. Stated differently, the appropriateness of household behavior thus far will be verified by the extent that the shock from a price downturn is alleviated. In both countries, house price trends and their impact on households will be watched with unparalleled interest.