Equity release in the context of Singapore

Retirement Conference 2012

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Introduction

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Three Facts

- Proportion of assets in property

>50%

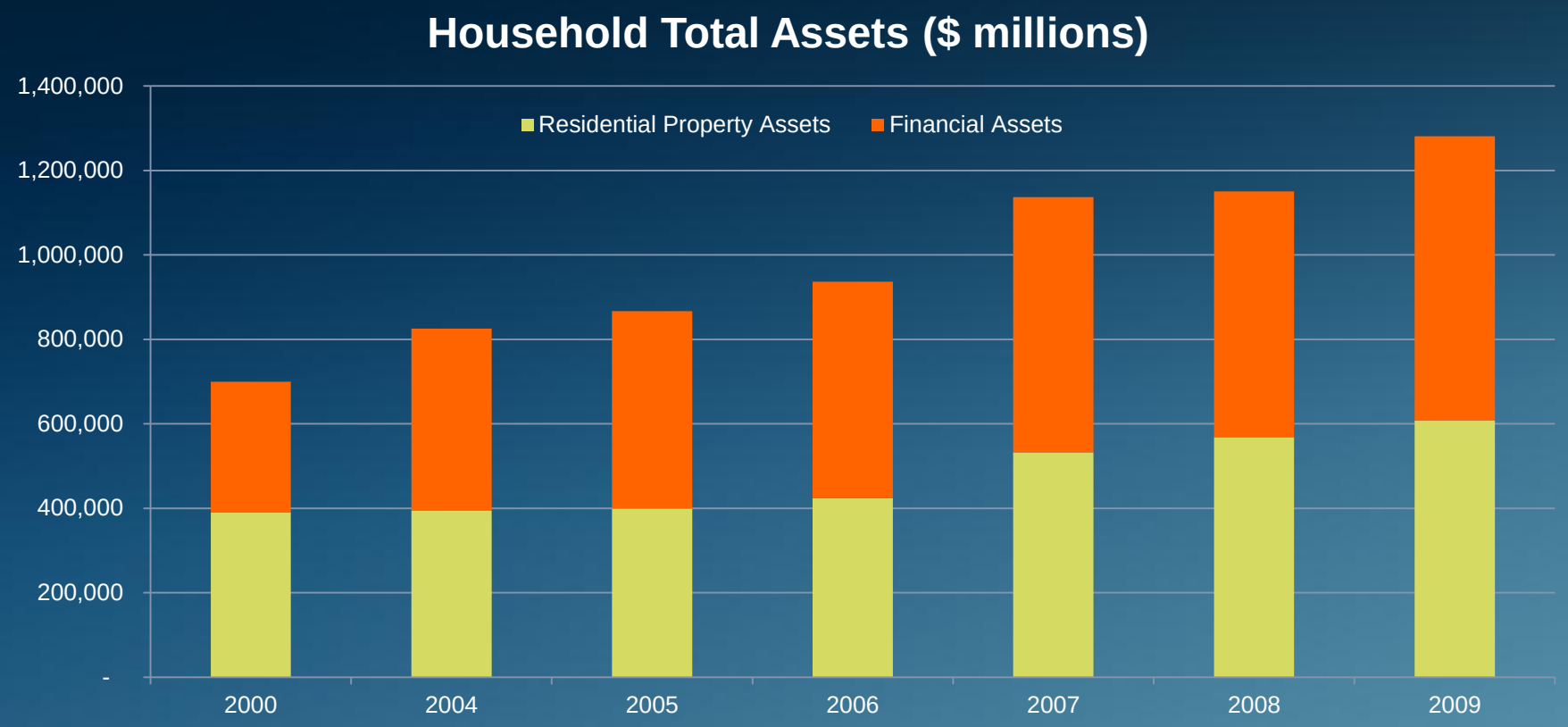
- The amount by which the crude mortality rate for Singapore males aged 65-69 has reduced since 1980

60%

- The number of Singaporeans who have no financial plan in place for retirement

28%

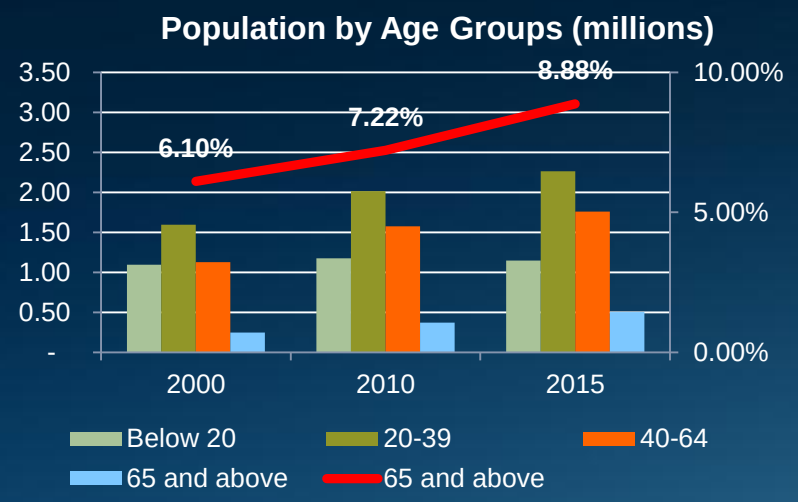
Large Proportion of Assets are in Property

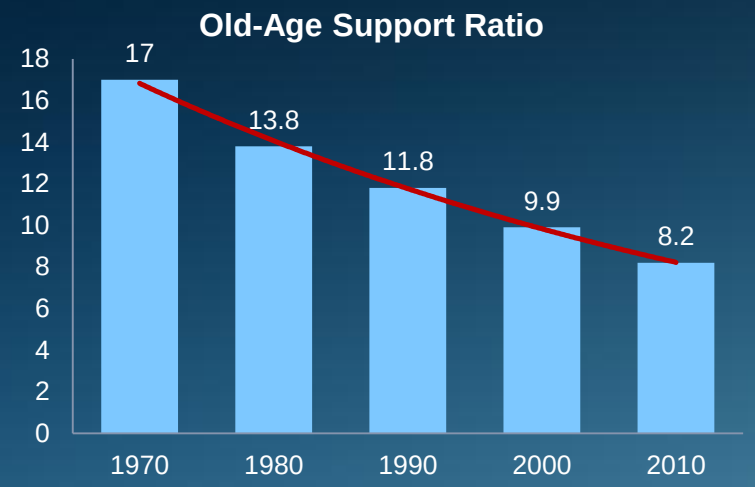


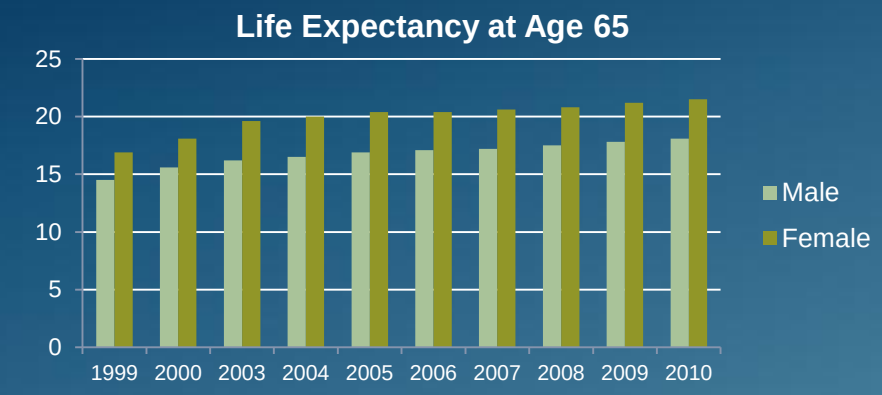
Source: Singapore Department of Statistics

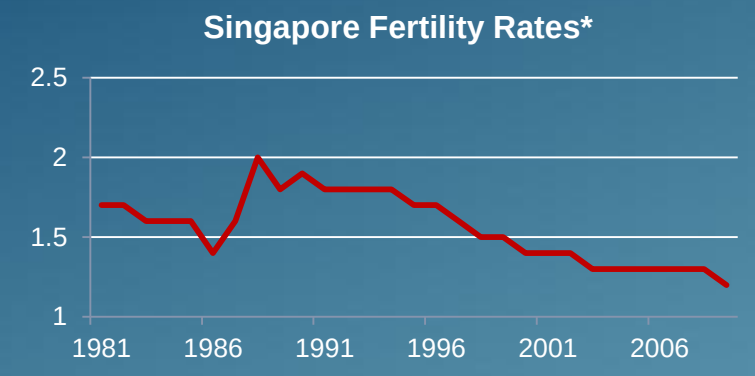
Almost half of the household assets are in the form of residential properties, both public and private housing

Key Demographics









Source: Singapore Department of Statistics, World Bank, *Births per woman

With low fertility and increasing life expectancy, Singapore's population is ageing quickly

Singaporeans and Retirement

According to HSBC's The Future of Retirement report

Aspirations

- Equate their later years with happiness

50%

- Equate their retirement with wealth do not have financial planning in place

34%

- See retirement as a time of freedom

59%

Reality

- Are very or slightly worried about how they would cope financially during their retirement

73%

- Do not have financial planning in place

28%

- Said "not having to worry about money" is the most important element for a happy retirement

75%

Top 3 Financial Reasons

Why Singaporeans Are Worried About Retirement?

- I haven't saved enough (62%)
- I'm worried about the cost of ill health (64%)
- I'm afraid of unforeseen events depending on my savings (65%)

“Eating Your Home” Equity Release – An Overview

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What is Equity Release?

Definition

- Retaining the use of one's house but using the value of the house to provide funding for a steady stream of income or to provide a cash lump sum after retirement
- Equity Release schemes have become popular as a tool to help boost income for the old-aged by unlocking the equity value of the home that they owned. This is especially relevant to societies where people are "asset-rich" and "cash-poor" during retirement

1. Reverse mortgage (loan model)
2. Home reversion (sale model)

Reverse Mortgage

The most common form of equity release in the United Kingdom is a reverse mortgage (also called the loan model):

Loan

- Specific housing property as collateral
- Single lump sum
- Regular monthly cash advance
- Some form of line of credit account
- Or any combination of the above

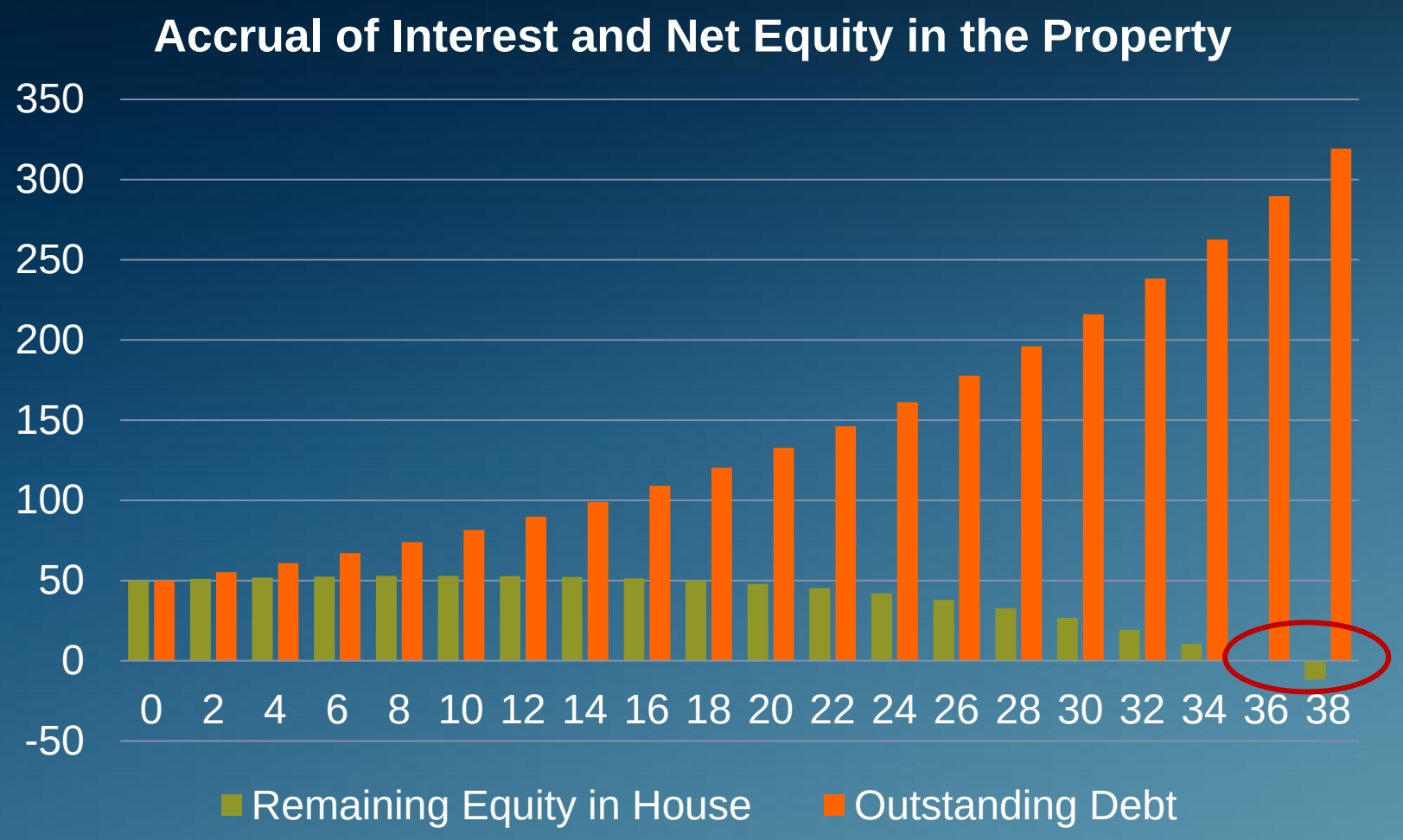
Interest Accumulation

- Interest accumulates and added to outstanding balance
- Can still stay in the same house

Death

- At death/moving into long term care, outstanding loan is repaid with proceeds from the sale of the house

Reverse Mortgage



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Home Reversion

Home reversion schemes (also called the sale model) involves the transfer of ownership of all or part of the property:

(21) And Enoch lived sixty and five years, and begat Methuselah: (22) And Enoch walked with God after he begat Methuselah three hundred years, and Enoch begat sons and daughters: (23) And all the days of Enoch were three hundred sixty and five years: (24) And Enoch walked with God: and he [was] not; for God took him. (25) And Methuselah lived an hundred eighty and seven years, and begat Lamech: (26) And Methuselah lived after he begat Lamech seven hundred eighty and two years, and begat sons and daughters: (27) ***And all the days of Methuselah were nine hundred sixty and nine years: and he died.*** *(KJV)*

Competing with Methuselah

- Vente en viager has existed in France for many years as a form of equity release
- In 1965, at the age of 90 Mme. Calment sold her apartment en viager to attorney André-François Raffray
- Raffray aged 47 years, agreed to pay her a monthly sum of 2,500 francs until her death
- In the event Mme. Calment survived to 122 years of age and Raffray (and his relicts) paid Calment the equivalent of more than $180,000

Source: Wikipedia.org

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Equity Release Schemes – Global Perspectives

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European Experience

- The equity release market in Europe remains small and fragmented
- The Global Financial Crisis has had further impacts on the viability of the products

	Loan Model		Sale Model	
Country	Average Amount Per Contract (EUR)	Number of Contracts 2007	Average Amount Per Contract (EUR)	Number of Contracts 2007
France	100,000	200	n/a	n/a
Germany	100,000	100	n/a	12
Spain	352,222	3,600	n/a	n/a
United Kingdom	55,303	33,000	77,466	14,600
Total	**83,387**	**39,700**	**68,233**	**19,712**

Source: Institut fur finanzdienstleistungen “Study on Equity Release Schemes in the EU”, January 2009

United Kingdom

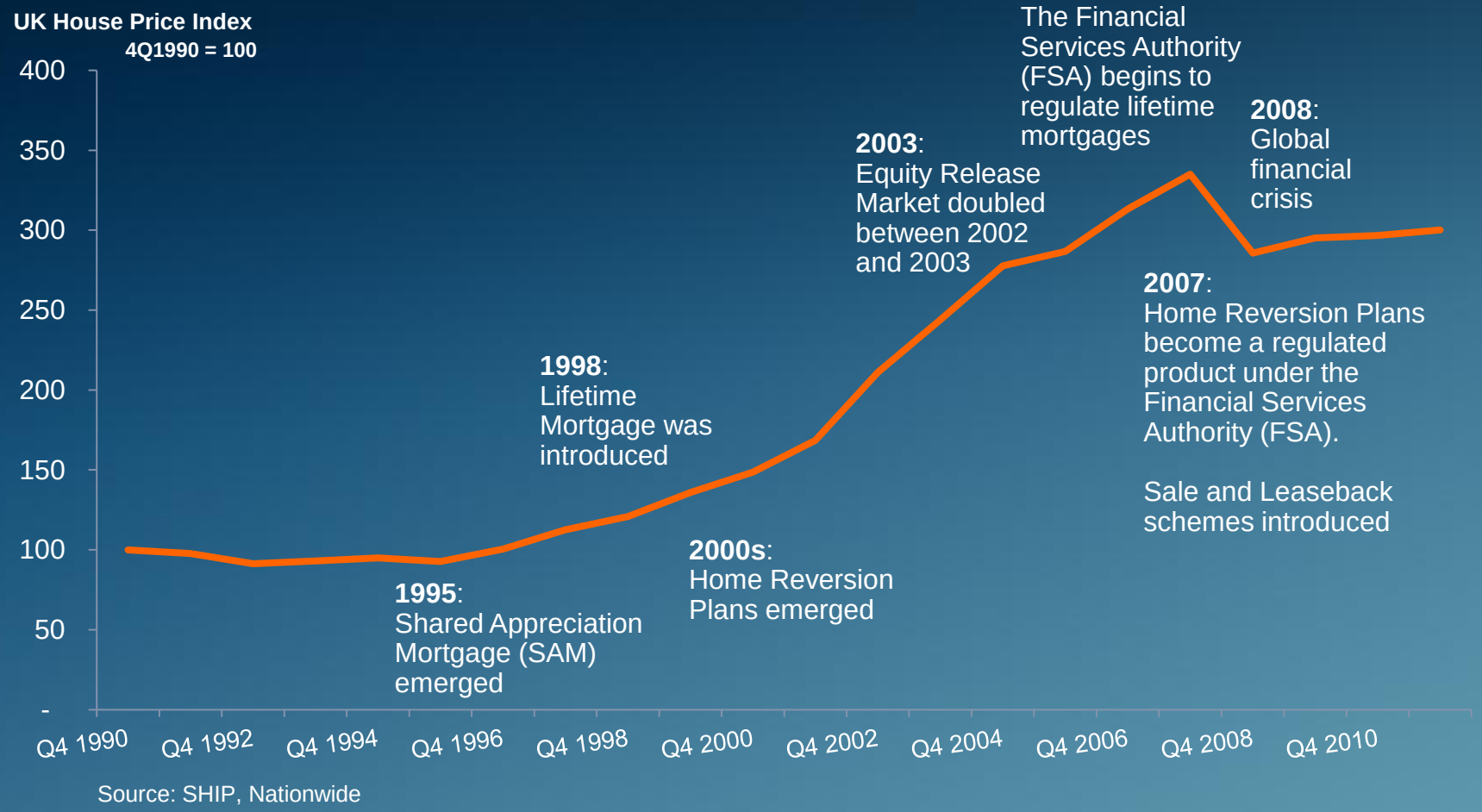
- The United Kingdom market has had a large equity release market since it first emerged in the 1980s
- The market experienced poor publicity in its earlier years, but has managed to overcome this helped by positive fundamentals
- It is dominated by the loan model

Category	United Kingdom	EU Median
Owner occupation (% of households)	70.0%	75.0%
Per capita mortgage debt (EUR)	28,760	7,820
Replacement rates mandatory pension programmes	41.1%	72.9%
Dependency ratio (2008)	24.3%	24.2%

Source: Institut fur finanzdienstleistungen “Study on Equity Release Schemes in the EU”, January 2009

History of Equity Release

When the first plans were introduced the 1960s, equity release schemes were mostly taken out to help making ends meet after retirement. As the property market grows, it has become increasingly important as a tool for generating additional income



Source: SHIP, Nationwide

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Home Reversion

Purpose

- House is sold to third party provider for a lump sum/ stream of income. Individual however retains the rights to stay in the house until death or admitting into long-term residential care.
- Equity release provider owns the house but cannot sell the house before that.
- The money received could be paid out in a series of annuity payments or in a lump sum.
- Option to sell a portion of the equity (less than 100%) is generally available, in which case one is entitled to receive smaller amount of money but would still maintain partial ownership of the house.
- This is not a loan, no interest/repayment.

Pros

- No interest and monthly repayments
- Gets to decide on how much equity one leaves to his or her beneficiaries
- Regulated by the Financial Service Authority (FSA)

Cons

- Not transferrable
- Generally higher costs
- Less for beneficiaries

Lifetime Mortgage

Purpose

- Loan is secured on individual's home.
- The loan is repaid with the proceeds from the property sale when the individual dies or moves into long-term residential care.
- Various types of Lifetime mortgages have appeared.

Roll Up Mortgages

- A loan taken out against the value of the property whereby the cash payments could either be in lump sum or a series of monthly income.
- No monthly interest payments but interest are usually added to the outstanding loan amount – compounding effect so the loan might end up to be extraordinarily huge.

Pros

- Regulated by the Financial Service Authority (FSA)
- More flexible than Home Reversion plans in that one can move home
- Subject to No Negative Equity Guarantee (NNEG)[1] – would not pay more than the value of the property

Cons

- Ending outstanding amount could become a lot more times of the original loan amount due to the compounding effect of interest
- Might not have any equity to pass on to beneficiaries

1. While different names may be used in different locations, most equity release schemes are obliged to contain a guarantee that the outstanding loan would not exceed the property value.

Market Trends

Loan Type

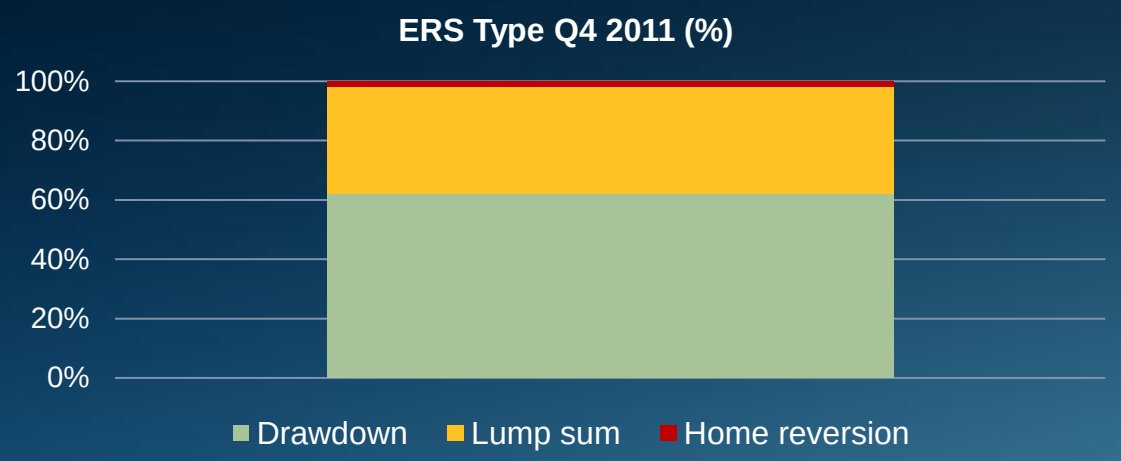
- Since its introduction in 2005/2006, the lifetime mortgage segment has been dominated by drawdown products, which permit flexibility in drawing the loan amount

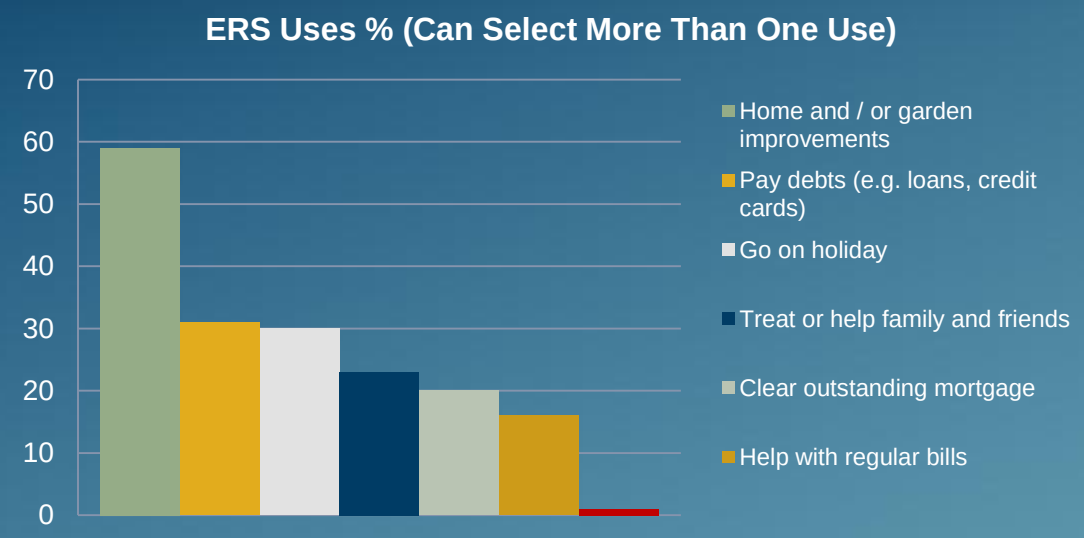
Intermediarisation

- SHIP members (representing 90% of the market participants) sold 90% of equity release business via intermediaries in Q4 2011 (compared to 81% a year earlier). This reflects the withdrawal of some direct sales force companies from the market

Usage

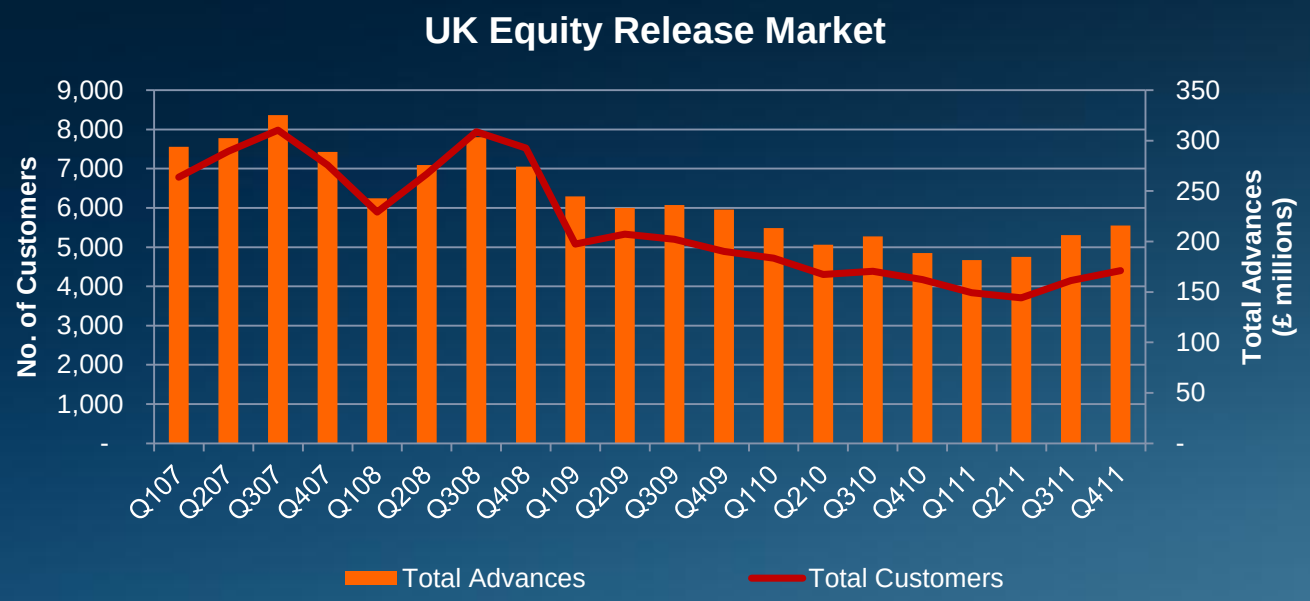
- While financial hardship plays a role in demand, lifestyle plays a part in stimulating demand





Sources: SHIP, Key Retirement Solutions UK Equity Release Market Monitor

Recovering, But Still Small



Equity Release Schemes have always been popular in the UK market, affected slighted recently by the volatile housing market.

Main providers in the market are Aviva, Stonehaven, Bridgewater, LV

- While the equity release market in the UK has dropped from its pre-Global Financial Crisis levels, a rebound has happened in the last two quarters (ending December 2011), possibly indicating the increasing confidence of homeowners on spending
- The market has seen a contraction in providers from 23 in 2007 to only 11 in 2010

To put the equity release market into perspective, according to the Halifax the estimated value of the United Kingdom housing stock at the end of 2011 was GBP3,900 billion

Sources: SHIP, Consumers Association, Lloyds Banking Group

Shared Appreciation Mortgage (SAM)

What is a SAM?

- A type of equity release where the bank advances an amount of loan equal to a proportion of the house value, usually at low, rates of interest. In return, the bank will share a percentage of the appreciation of the property when it is sold or when the owner has died
- First sold by Bank of Scotland in late 1996 and also Barclays. Removed from market in1998
- Cheap finance and simplicity of the SAM is the key feature/selling point
- Now subject to legal action by consumers

Decreasing House Prices

Borrowers get to save on the interest-free loan

Increasing House Prices

Bank shares in the price appreciation

Worked Example

Initial value 100, borrow 25%

Value increases by 146% to 246 (based on average UK appreciation between Q4 1996 and Q4 2011 Halifax House Price Index)

Debt = 25 + 75% *146 = 134 or equivalently an annual rate of interest of 12%

Source: http://en.wikipedia.org/wiki/Shared_appreciation_mortgage , http://www.lloydsbankinggroup.com/media1/economic_insight/halifax_house_price_index_page.asp

Spain

- The market in Spain grew from a very small base following the changes in the law in 2007 (Law 41/2007)
- By 2008 there were 21 providers operating in the market including many of the cajas including La Caixa and a sole bank, BBVA
- The market had many positive enablers including widespread owner occupation:

Category	Spain	EU Median
Owner occupation (% of households)	86.3%	75.0%
Per capita mortgage debt (EUR)	14,510	7,820
Replacement rates on mandatory pension programmes	84.5%	72.9%
Dependency ratio (2008)	24.2%	24.2%

Source: Institut fur finanzdienstleistungen “Study on Equity Release Schemes in the EU”, January 2009

Key Features of the Market

Market Growth

- Growth from 2007 was driven by the loan model variety and typically the loan proceeds were used to purchase an annuity
- More recently, the sale model is seeing equal growth

Advice

- Advisors need to be independent, but financial entities can sell direct, although few choose to do so

NNEG

- Debt on death is charged against the estate (no negative equity guarantee does not apply) but the debt cannot be charged against the heirs)

Taxation

- Tax privileged treatment of annuity (loan is not taxable) purchased with lump sum (ranging from 4.32% at age 65 to 1.44% at age 70 and above)

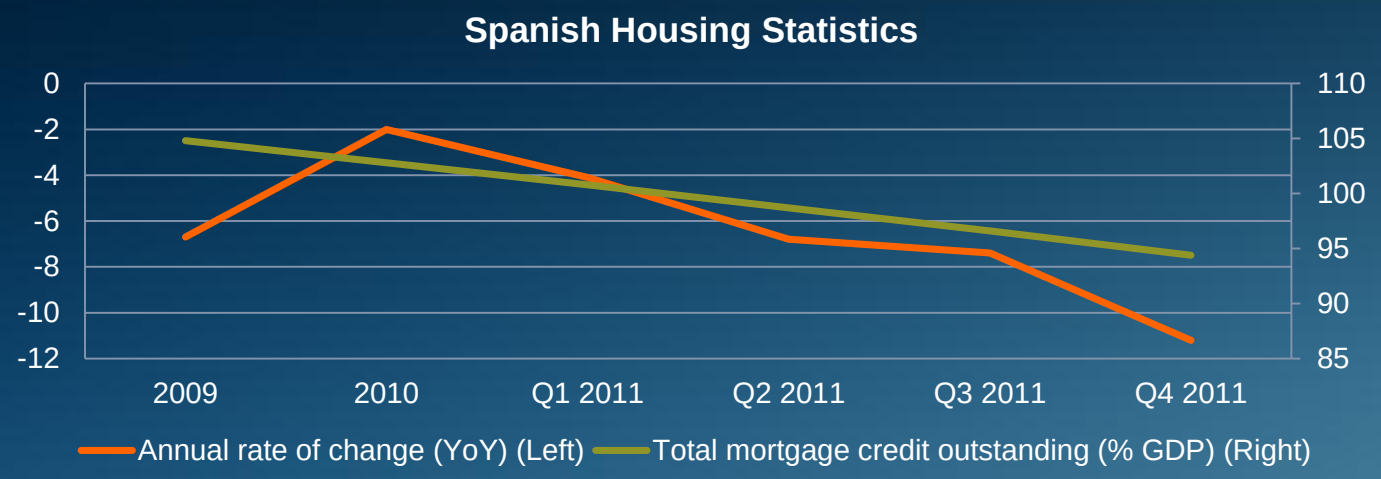
Typical Product Offering (BBK):

- Minimum age: 65 years
- Initial fee: 0.50%.
- Rate of interest Euribor + 2,50%
- No cancellation penalties on early payment

Sources: Institut fur finanzdienstleistungen "Study on Equity Release Schemes in the EU", January 2009
Company website

Current Issues

- The Spanish economy has suffered following the Global Financial Crisis



- The markets challenges (and opportunities) facing the market are:
  - **Falling prices (risk)**
  - **Restricted availability of credit (funding)**
  - **Consolidation in market (mergers and fusions)**
  - **Falling prices (harder to downsize)**

Despite the challenges faced by the market, growth in 2010 was still 10.7%

Sources: Banco de Espana http://www.bde.es/webbde/es/estadis/infoest/si_1_6e.pdf
www.eleconomista.es

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Online search for property…

France and Germany

Le Prêt Viager Hypothécaire

- Only a single provider offers this product in France Credit Foncier de France offers the product
- After early growth, volumes remain flat at €494 million at June 30, 2011; €463 million at December 31, 2010; and €400 million at December 31, 2009
- A potential barrier, in addition to low supply, is that the French mortgage market is unusual in that third-party guarantee companies, such as Credit Logement provide guarantees in place of mortgage charges

CRÉDIT FONCIER

Low Owner Occupancy

- Germany has one of the lowest levels of owner occupancy in Europe (43.2% in 2009)
- Demand may be subdued further as pensions in Germany are relatively high and pensioner poverty is not widespread
- Supply has been modest, with only a handful of products launched in the past and the larger banks choosing to not enter the market

Source: http://www.creditfoncier.com/wp-content/uploads/RS_2011_en.pdf ,
Institut fur finanzdienstleistungen “Study on Equity Release Schemes in the EU”, January 2009

In the US – Reverse Mortgages

Background

- In the United States, equity release schemes are called a different name – Reverse Mortgages.
- The first product was offered by Deering Savings & Loan of Maine back in 1961.
- While they work similar to their UK counterparts, the US market landscape is a little different. Majority (99%) of the business has come from Home Equity Conversion Mortgage (HECM), which essentially a reverse mortgage that is insured by the Federal Housing Administration (FHA).
- HECM program enables older homeowners to withdraw some of the equity in their home in the form of monthly payments for life or a fixed term, or in a lump sum, or through a line of credit.
- The borrower always retain ownership to the property. The borrower cannot be forced to sell the home of pay off the mortgage even if the mortgage balance exceeds the value of the property. If the outstanding loan balance exceeds the value of the property, the borrower will owe no more than the value of the property, if they sell the property to repay the loan.

Types of HECM

- **HECM Standard** – The most basic type of HECM whereby the loan amount that can be taken out is prescribed by the Department of Housing and Urban Development (HUD) based on several factors such as age, interest rates and the appraised value of the property. Standard charges include Mortgage Insurance Premium, origination fee, closing costs, servicing fees etc.
- **HECM Saver** – A lower cost version of HECM Standard with cheaper Mortgage Insurance Premium in return for lower amount of loan received.

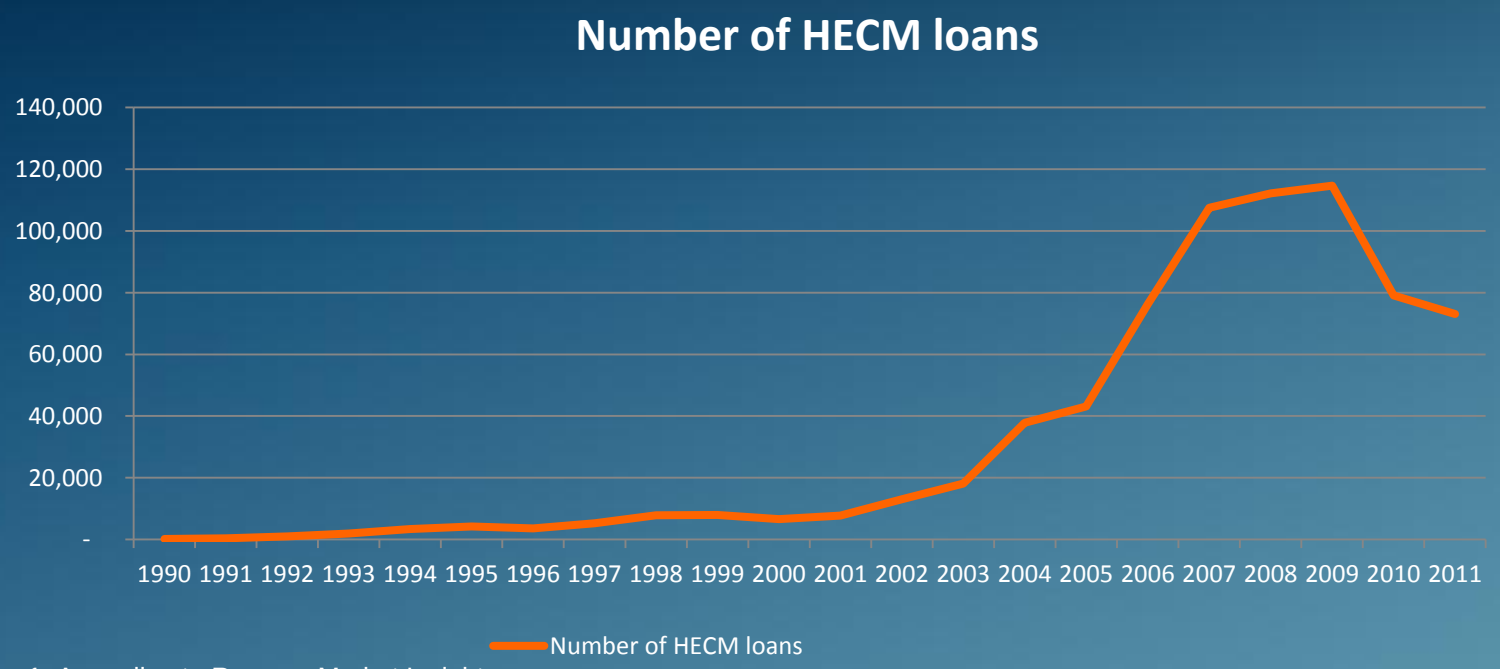
Other Reverse Mortgage Products

- Non-FHA insured products are not as tightly regulated with their charges and insurance fees could be either very high or low. Usually taken on higher-valued properties.

Source: NRMLA

Market Growth

- Recently, the growth of HECM loans has turned to the opposite direction possibly stemmed by the much lower value of current property prices. The current global economic conditions might also have affected the general consumer spending sentiment.
- Several big players are pulling out from the market – Bank of America, Wells Fargo, Metlife – collectively they make about 60% of the market in April 2011[1].



1. According to Reverse Market Insight
Source: HUD

Governance : United Kingdom

Safe Home Income Plans (SHIP) was launched in 1991 in an effort to raise the standards of the equity release industry. All SHIP members are obligated to follow strictly the code of conducts laid out as below:

- The members of SHIP agree to provide fair, simple and complete presentation of their plans. The benefits, obligations, variables and limitations must be clearly set out in their literature, including all costs which the applicant has to bear in setting up the scheme, the position on moving, the tax situation and the effect of changes in house values.
- The client's legal work will always be performed by the solicitor of his or her choice. In all cases, prior to the completion of the plan the solicitor will be provided with full details of the benefits the client will receive. The solicitor will be required to sign a certificate to the effect that the scheme has been explained to the client.
- The SHIP certificate will clearly state the main cost to the householder's assets and estate e.g. how the loan amount will change or whether part or all of the property is being sold.
- All SHIP plans carry a "no negative equity" guarantee i.e. you will never owe more than the value of your home.

Source: SHIP

Governance: From Other Countries

CODE OF CONDUCT

SEQUAL

Each Member of SEQUAL agrees it's equity release product(s) will adhere to, and be measured against the following Code of Conduct in dealing with Senior Australians their families and advisers. As a minimum, Members of SEQUAL shall:

1. Treat all Customers with respect and dignity
2. Participate in an ASIC approved External Dispute Resolution Scheme
3. Ensure that all products carry a clear and transparent 'no negative equity' or 'non-recourse' guarantee. That is, the Customer(s) will never owe more than the net realisable value of their property, provided the terms and conditions of the loan have been met
4. Strongly encourage Customers(s) to discuss the transaction with family members and to seek independent financial advice from a qualified financial adviser
5. Strongly encourage Customer (s) to discuss the transaction with Centrelink to ensure they fully understand the impact, if any, on their Centrelink entitlements
6. Ensure that the Customer (s) obtains independent legal advice performed by the solicitor of their choice. Prior to the completion of the transaction, the Customer (s) or their solicitor will be provided with full details of the benefits the Customer (s) will receive, and the obligations they are entering into
7. Clearly and accurately identify all costs to the Customer (s) that are associated with the transaction
8. Not assert or imply to a Customer(s) that the Customer(s) is obligated to purchase any other product or service offered by the Member or any other company in order to enter into an equity release product
9. Provide in writing, a fair and complete package of equity release documents, covering the benefits and obligations of the product. This will include making available to the Customer(s) and their advisers a tool illustrating the potential effect of future house values, interest rates and the impact of any capitalisation of interest where applicable
10. Ensure that all contracts are written to comply with Australian Consumer Law and the consumer protection provisions of any other relevant Legislation, Regulation or Code and ensure compliance, where applicable, with all Guidelines issued by SEQUAL.

National Reverse Mortgage Lenders Association Pledge to Reverse Mortgage Borrowers

The mission of the **National Reverse Mortgage Lenders Association** is to educate you about reverse mortgages and to help you determine if one might be the right choice for you. We know your home is a prized possession of you and your family. We are sensitive to the fact that utilizing your home equity while you remain in the home is a major financial and emotional decision. All NRMLA members are required to honor a Code of Ethics & Professional Responsibility in which we pledge to serve you with integrity. Your best interests are our primary consideration.

Prior to you getting a reverse mortgage, as a NRMLA member we will:

- Know and comply with all State and Federal laws and regulations that protect reverse mortgage borrowers.
- Present you with the full range of reverse mortgage products available from our company.
- Clearly explain the terms, benefits and costs of each product we present.
- Inform you of your responsibilities as a reverse mortgage borrower including paying real estate taxes on time, keeping the property properly insured and maintaining the home in sound condition.
- Work with you and, if you request, with your family and financial advisors either face-to-face or on the telephone as frequently as you choose to educate you,answer any and all questions and help you assess whether a reverse mortgage might be beneficial to you.
- Explain the benefits of and statutory requirement that you have reverse mortgage counseling.
- Provide you with a list of HUD-approved independent housing counseling organizations that employ exam qualified counselors to serve you. The choice of the organization is yours and yours alone.
- Help you prepare for your counseling session to make it most effective by providing you with questions you might ask and information you should be prepared to provide to the counselor.

Given the high risk nature of Equity Release Schemes to the consumers, various national equity release scheme associations have imposed the code of conducts and pledges to increase the consumer confidence towards purchasing such products.

Source: Senior Australians Equity Release (SEQUAL), National Reverse Mortgage Lenders Association (NRMLA)

Key Drivers and Enablers

Socio-Economic

- Home ownership
- Strong housing market
- Large mortgage market
- Adequacy of pension provision

Cultural

- View home as a capital asset not just an inheritance
- Capital can be made liquid without giving it up
- Credit can facilitate the provision of liquidity

Sources: Institut fur finanzdienstleistungen “Study on Equity Release Schemes in the EU”, January 2009

Equity Release in Singapore

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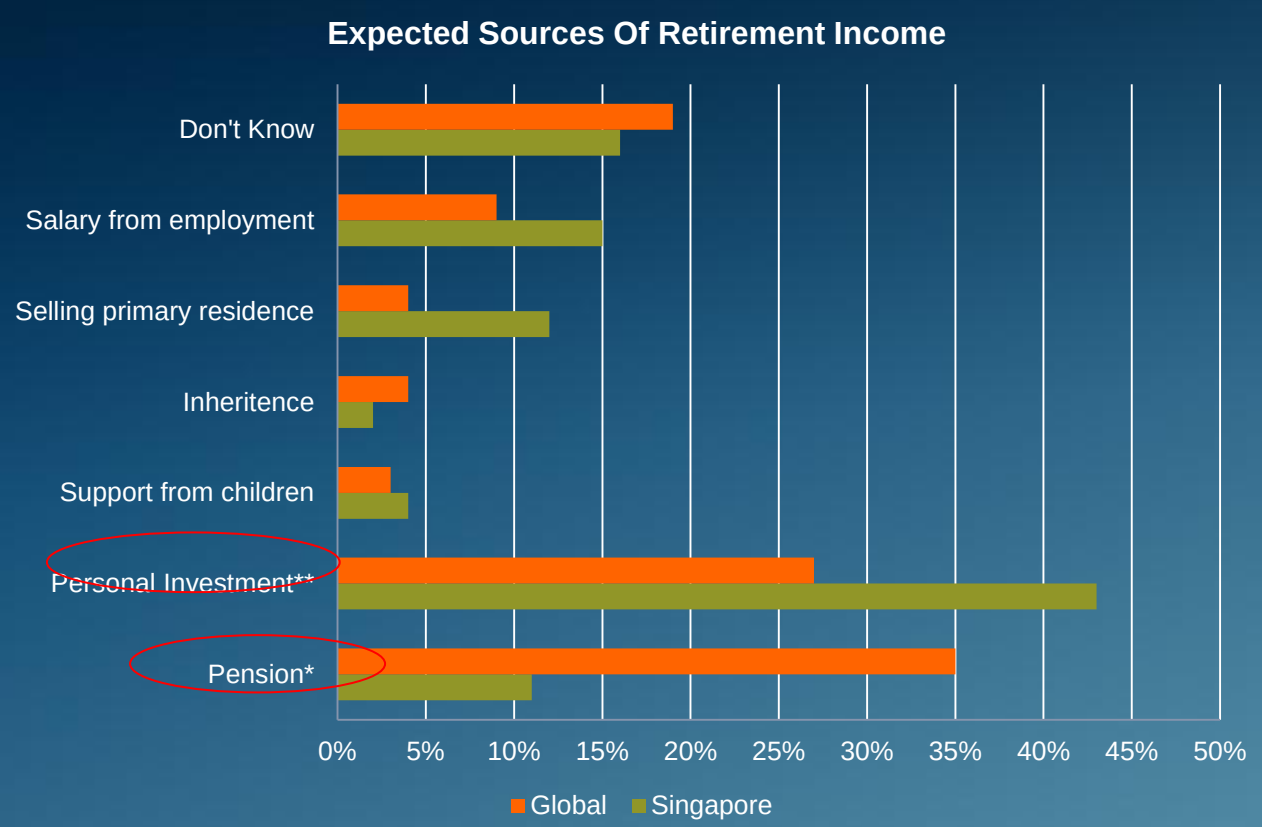
Financial Enablers

- Measured against the financial criteria, Singapore has the some of the characteristics that might support equity release
- But the population may well be too small to drive sufficient demand

Category	Singapore	EU Median
Owner occupation (% of households)	88.6% (2011)	75.0% (2008)
Per capita mortgage debt (EUR)	14,035 (2009)	7,820 (2008)
Dependency ratio (2008)	37.2%	24.2%

Sources: Institut fur finanzdienstleistungen "Study on Equity Release Schemes in the EU", January 2009
Department of Statistics, Singapore

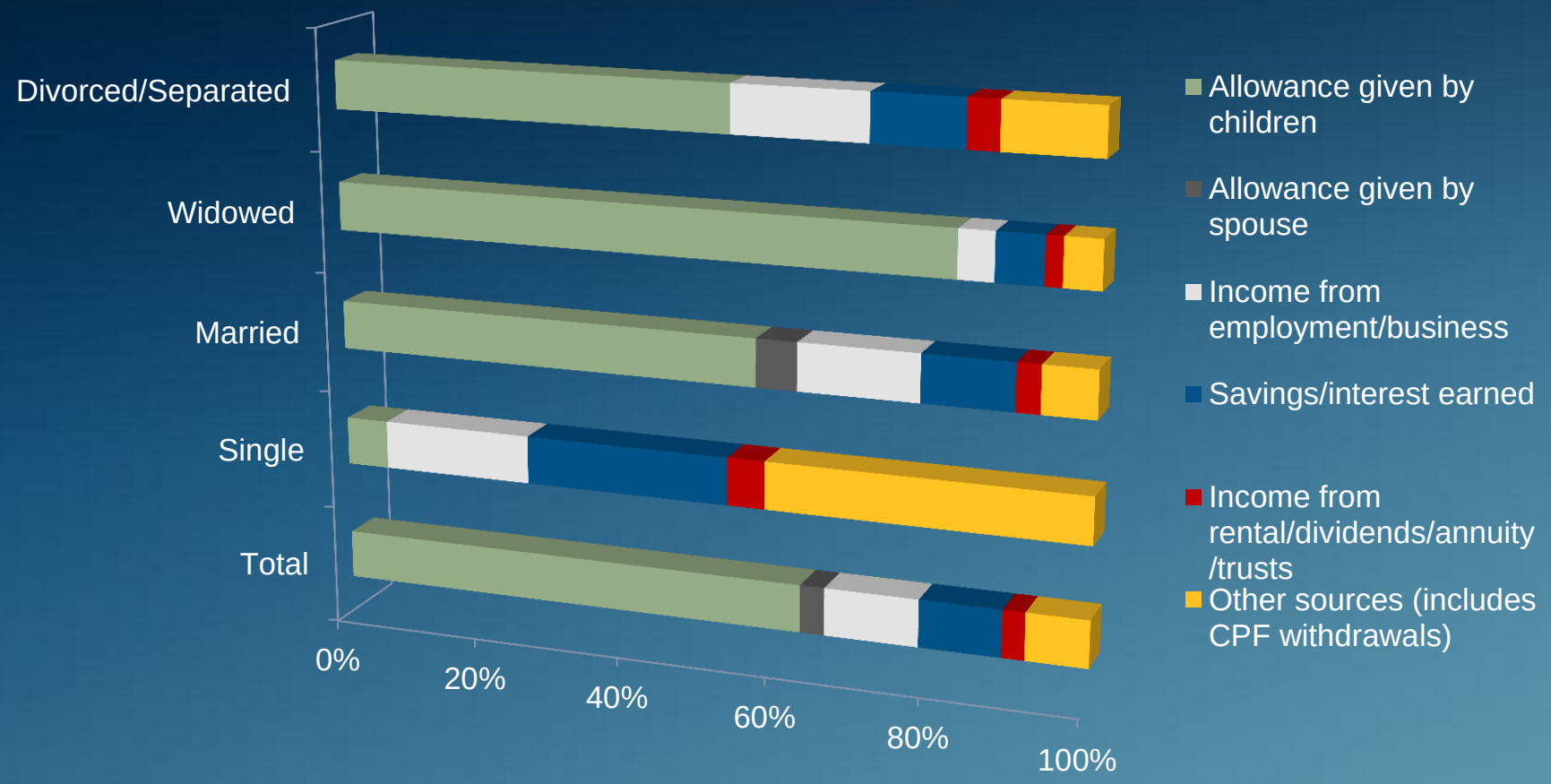
Singaporeans and Retirement: Planned Sources of Income



Compared to global experience, Singaporeans plan to depend more on personal investments rather than pensions for retirement

'Reproduced with permission from The Future of Retirement *The power of planning,* published in 2011 by HSBC Insurance Holdings Limited, London.'
*Pensions include state pensions, DB pension scheme, DC pension scheme.** Personal investment includes investment in stocks, rental income, selling investment property etc.

Singaporeans and Retirement: Actual Sources of Income



Source: Singapore Department of Statistics "The Elderly in Singapore" September 2011

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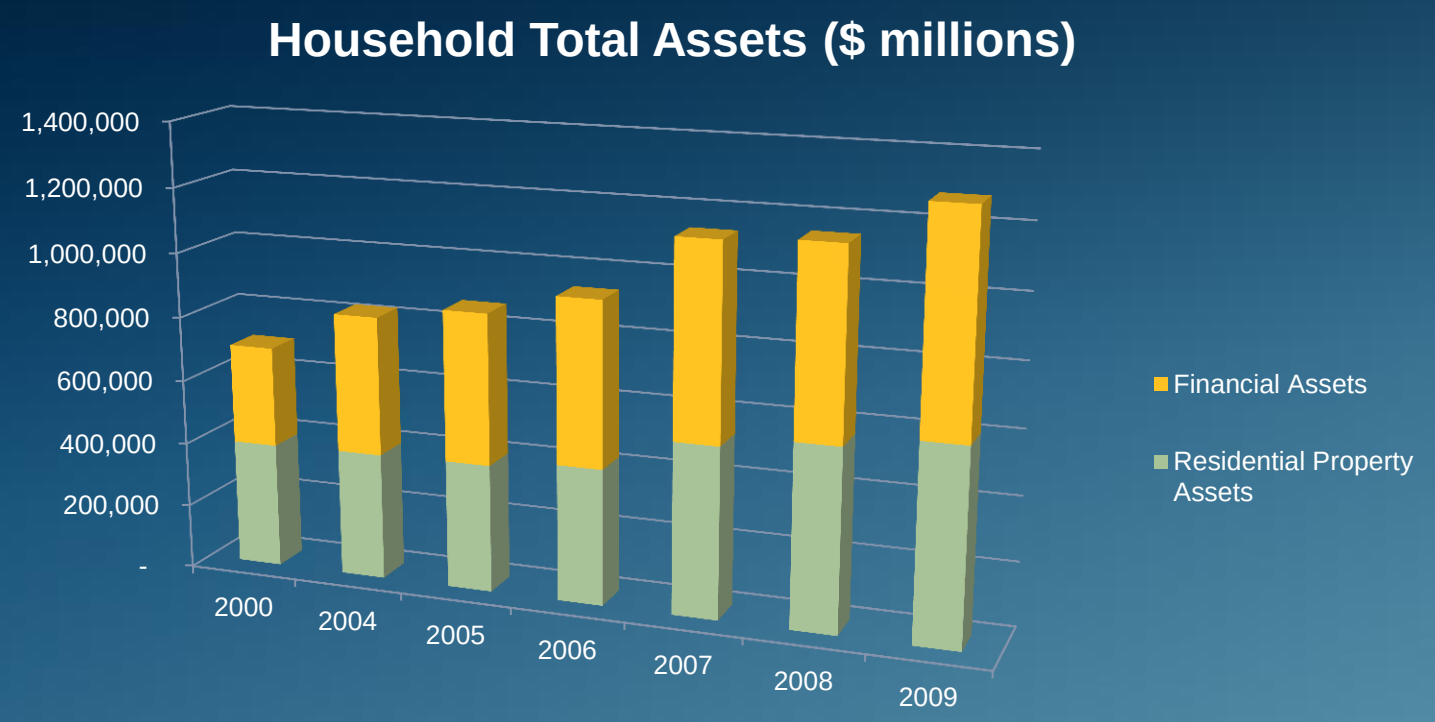
Is there a Market for Equity Release in Singapore?



Source: Singapore Department of Statistics

Almost half of the household assets are in the form of residential properties, both public and private housing.

Existing Government Schemes

	Description	Application
Minimum Sum Scheme	A CPF scheme. CPF members are required to set aside a minimum amount in their account at age 55. The amount is calculated so that it will provide monthly payments for 20 years starting at age 65	Property pledge is allowed to make up the shortfall (up to 50%) of minimum amount
CPF Life	A new initiative introduced recently to replace minimum sum scheme. CPF has offered four[1] options under the scheme: (1) Life Plus, (2) Life Balanced and (3) Life Basic (4) Life Income. Life Plus and Life Income assumes the full retirement account is used to purchase annuities, while (2) and (3) assumes 30% and 10% of account used for annuity purchase accordingly.	Property pledge is only allowed for Life Balanced and Life Basic plans
Lease Buy-Back Scheme	Refer to next slide	

1. The government announced changes to the CPF Life program in March 2012, cutting down from the original 4 plans to only 2 plans – Basic & Standard (combination of Life Plus and Life Balanced), which will be available from 2013 onwards. (Channel News Asia "CPF Life plans refined from four to two" 5 March 2012)

Lease Buy-Back Scheme

Background

- Launched on 1 March 2009, the Leave Buyback Scheme was introduced as one of the ways to help the elderly increase their retirement income by unlocking part of their housing equity while continuing to live in their property for 30 years*

How It Works?

- Under the Lease Buyback Scheme, HDB will
  - Buy the remaining lease term of the property
  - Provide $10,000 additional subsidy
  - Provide upfront cash grant of $5,000 from the proceeds**
  - Use the remaining proceeds to purchase a lifetime immediate annuity from the CPF Board (CPF Life)

Eligibility

- At least one flat owner must be Singaporean citizens and currently lives in a 3-room or smaller HDB flats
- All flat owners must be at least at the CPF Drawdown Age
- Flat owners and spouses must not have received more than one housing subsidy in the past
- Gross monthly household income must not exceed $3,000
- All household members must have lived in the flat for at least 5 years
- Members of the household must not have previously owned a private residential property
- The household must not have any outstanding loan of $5,000 or more on the flat

* Assuming the property is on leasehold. ** Assuming the outstanding loan of the house is less than $5,000, otherwise the $5,000 would be used to cover the outstanding loan. Source: CPF Board

Lease Buy-Back Scheme

- Assuming the proceeds from the LBS are $109,000 (after taking in account any eligible subsidies and upfront cash grants), the following table shows a guide of the monthly payout from the purchase of the immediate annuity using the proceeds:

Monthly Income	Age 63	Age 65	Age 70	Age 80
Sole Male Flat Owner	$530 - $560	$540 - $580	$600 - $640	$780 - $820
Sole Female Flat Owner	$480 - $520	$500 - $530	$540 - $580	$680 - $720
Male & Female Joint Flat Owner	$510 - $540	$520 - $560	$570 - $610	$730 - $770

- Restrictions:
  - Not allowed to sell the flat or sublet during the 30-year term
  - Only 3-room or smaller flats are eligible for this scheme
  - The owner must not have owned any private residential properties in the past – current financial situation disregarded??

- Response towards LBS:
  - Slow due to the program being too restrictive and not many people fully understand how it works
  - The senior citizens also tend to become more cautious when it has to do with their house – possibly one of their most valuable assets

"HDB said 446 households have taken up the Lease Buyback Scheme in the past three years. This is less than two per cent of total eligible households."[1]

1. Quoted from Channel News Asia's "Lease Buy-Back Scheme sees low take-up rate" (published 27 February 2012)
   Source: HDB Board

Budget 2012 – The Focus on The Elderly

The recently announced 2012 Budget unveiled the government's effort in helping the senior citizens cope with the rising cost of living:

- CPF contribution rates for workers aged 50-65 to increase by up to 2.5%
- Income tax relief to increase for workers aged 55 and above
- Medisave contribution rates for self-employed persons aged 50 and above to increase
- "Silver Housing Bonus" of $20,000 to be awarded to older Singaporeans who are willing to sell off their existing houses and purchase a 3-room or smaller HDB flat.
- Incentives for "Lease Buyback Scheme" to double to $20,000

Private Sector

- Several products have been offered by two major providers in Singapore:
  - NTUC Income offered reverse mortgages from 1994
  - OCBC Bank introduced reverse mortgages in 2006

- Sales processes were sensitive to the reputational risks associated with the sales process:
  - Extensive measures have also been put in place by OCBC Bank to make certain that senior citizens clearly understand what the reverse mortgage entails before they sign up. These measures include thorough interviews with senior bank officers to assess if the scheme is suitable for them. In addition, their next-of-kin will have to be present during the entire process to ensure that the applicant's decision is made in consultation with his or her family members.

    Source: OCBC website

- Both products are understood to have met only modest success, possibly not helped by a celebrated case of litigation involving NTUC Income

NNEG
Singapore Context

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Can NNEG be a Possible Solution?

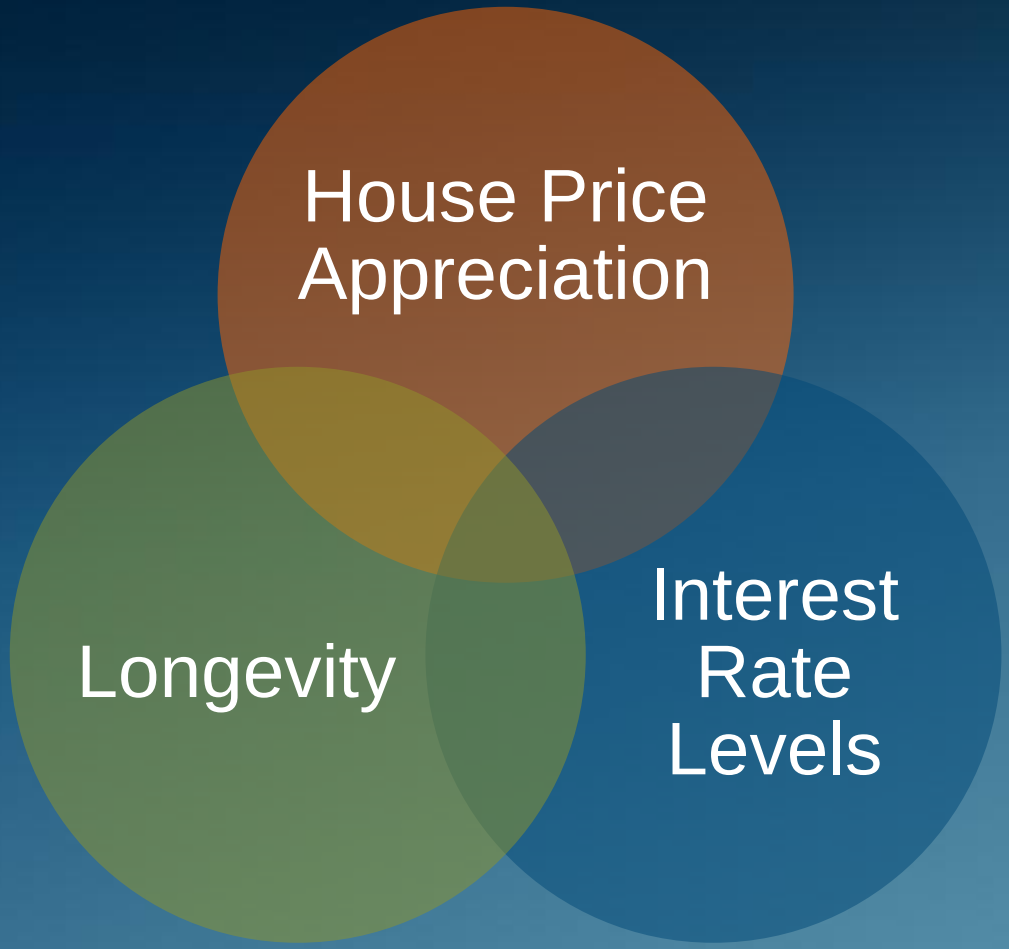
No Negative Equity Guarantee

- The first generation of equity release products in Singapore did not offer a No Negative Equity Guarantee (NNEG)
- This feature has become dominant in the UK, but not Spain, so it's existence may not be decisive, but may still be helpful in driving the market
- A No Negative Equity Guarantee (NNEG) prevents the amount of outstanding debt from going higher than the future value of the property.
- This further ensures that no debt will be passed on to the beneficiaries or that individual will have to be evacuated if house price falls below mortgage outstanding value.

NNEG

- Has become a pretty standard feature in most equity release products as most of the time it is a requirement
- What are the risks to the lenders?
  - Future house price fluctuation – risk that house prices experience slow growth or sharp drop (which triggers NNEG)
  - Longevity risk – Improving mortality further delays the time which the lender can realize the capital gains of the property
- Who is more suitable to offer it?
- What is the price?
  - Some “benchmark” – HECM Standard charges an initial premium of 2% (of the appraised value of the property at inception) plus a renewal rate of 0.5% (of outstanding loan)

Key Factors in Pricing NNEG



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Pricing an NNEG (1)

- Important reference: On Pricing and Hedging the No-Negative-Equity-Guarantee in Equity Release Mechanisms (Johnny Siu-Hang Li, Mary R. Hardy and Ken Seng Tan)
- Impact of NNEG is similar to an European Put Option

Example:

Property value at 0 = S0
Loan in advance = X
Interest Rate = i
Loan outstanding at future time t =Y = Xe^{it}
Property value at time t = ST
At time T,
If ST>Y, Payoff = 0;
If ST<Y, Payoff = Y-ST
Value of Payoff = MAX(Y-ST,0)

- Payoff is similar to European put option with strike price Y and written on an underlying asset with time-zero value S0.

Pricing an NNEG (2)

- Some key differences with standard European Put Options

Property market is infrequently traded

Time to maturity is random

House price returns are highly auto-correlated, with significant effects of leverage and heteroscedasticity

- Li, Hardy and Tan examined UK data and concluded that an ARMA(1,3)-EGARCH(1,1) model best explained the data
- Geometric Brownian Motion formula can be used to give quick approximation to the value

Singapore Property Market Outlook (1)

Slowing Demand

- Recent government efforts to control property price inflation – Additional Buyer Stamp Duty

High Supply

- Loads of upcoming planned developments

Uncertain Global Economic Conditions

- Eurozone Debt Crisis

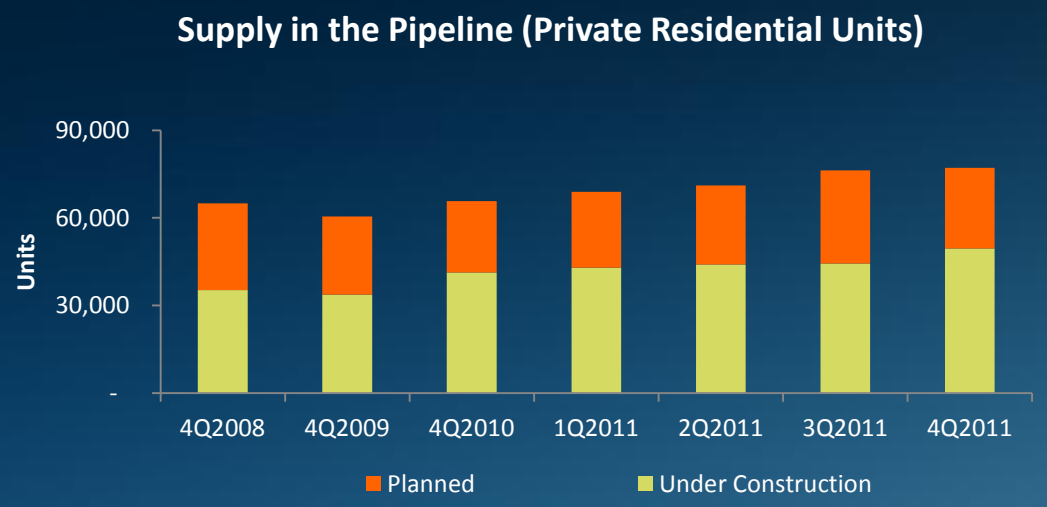
Moderate Local Economic Outlook

- "Growth is likely to slow to 1% to 3% this year (2012), following the close to 5% growth in 2011"[1]

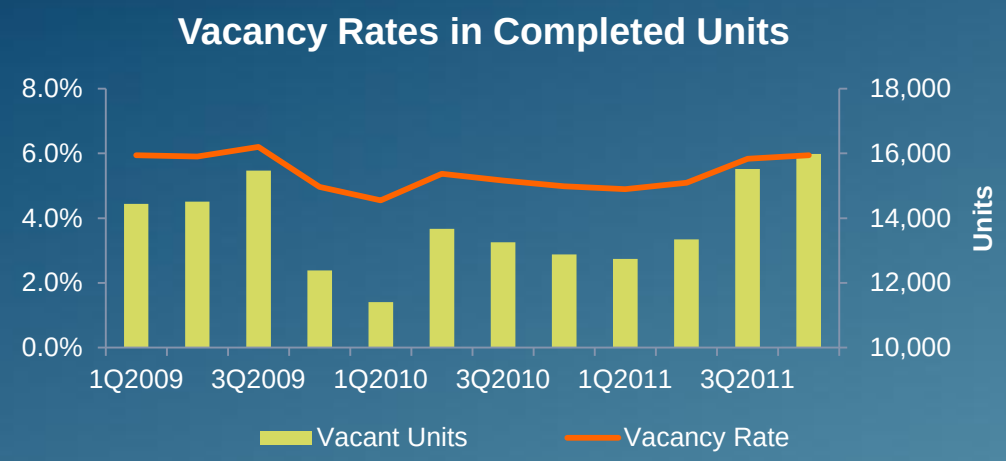
Record Low Interest Rates

1. MAS Recent Economic Developments in Singapore, Updated 8 Mar 2012

Singapore Property Market Outlook (2)



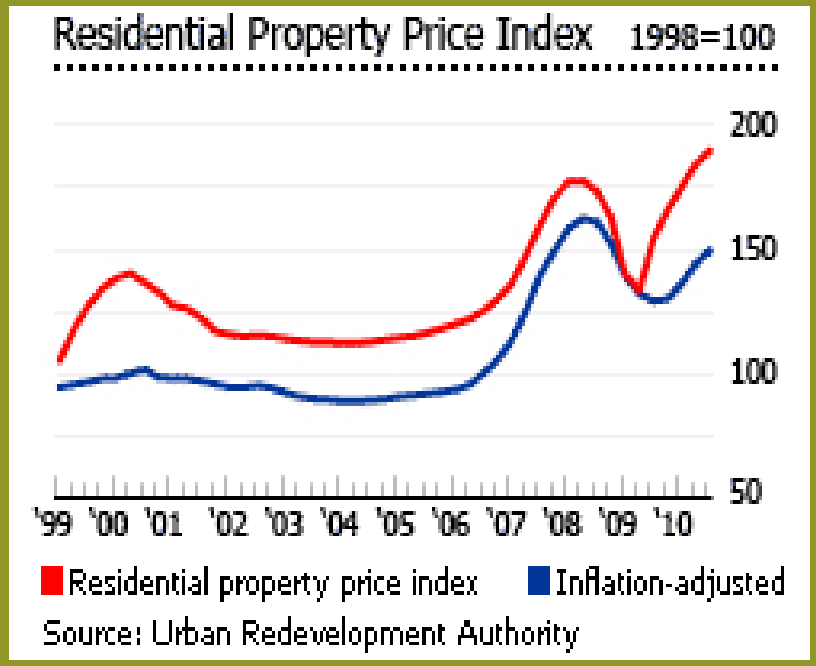
"The pipeline supply of 77,089 units (as at 4Q2011) was the highest ever recorded since such data was first available in 1999" URA

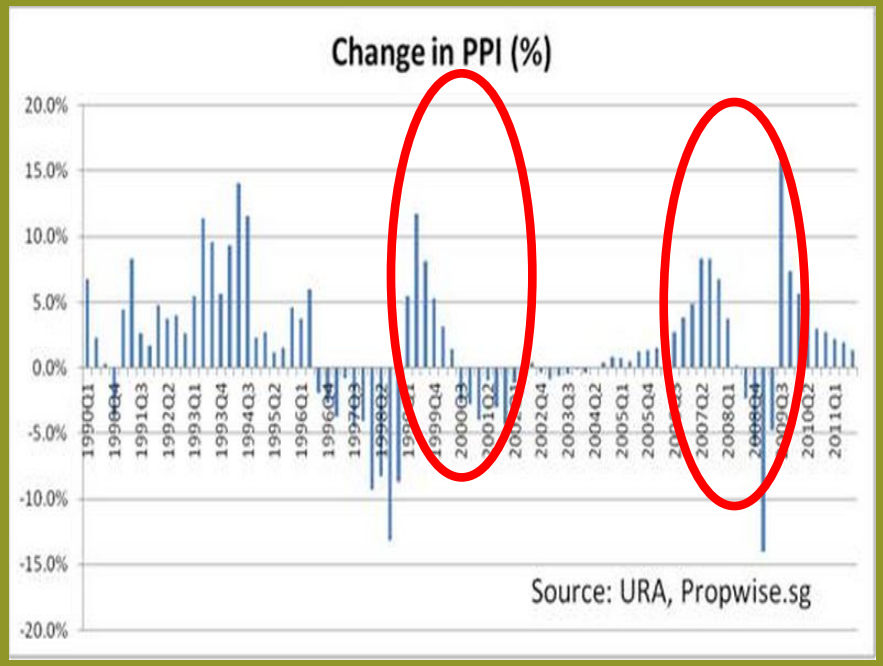


In terms of completed units, more vacant units are found in the market, with the vacancy rate grew from 5.0% in 4Q2010 to 5.9% 4Q2011

1. URA Quarterly Real Estate Statistics

Singapore Property Market Outlook (3)

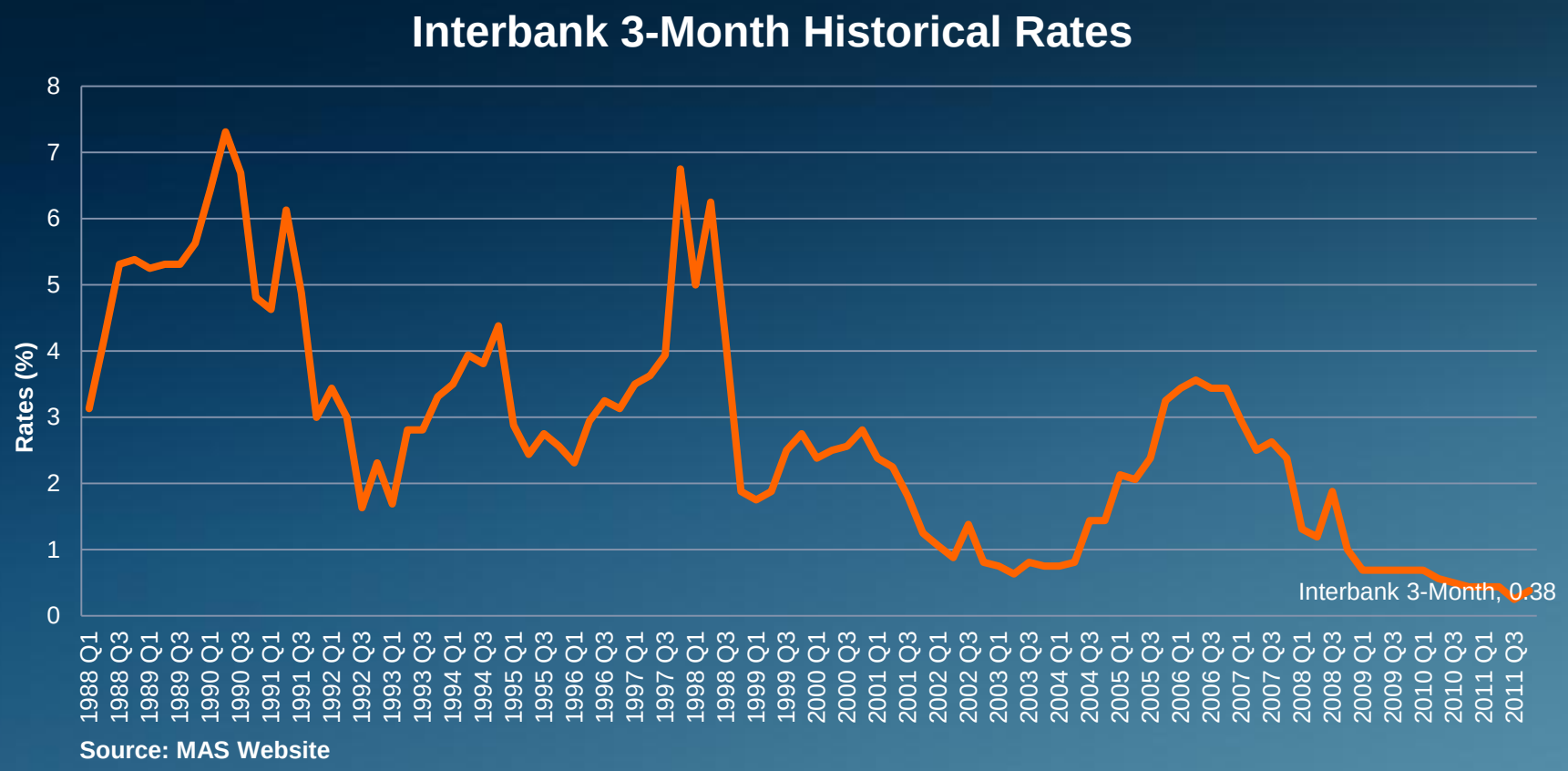




Source: Property Market Outlook for 2012, Yahoo! News article

The growth of property price indices in recent quarters, have seem to have started slowing down. Would this lead to negative growths in the property market just like what the slowdown did in 2000 and 2008?

Singapore Interest Rate Environment



Source: MAS Website

Large decline in interest rate particularly during the start of the financial crisis. Will interest rates continue to remain at these levels?

Singapore Population and Longevity

Annual Rate of Mortality Improvement Per Year

	Insured Lives	Population
Males	5.3%	2.9%
Females	4.8%	3.2%

Source: SAS AA Symposium presentation on Mortality Investigation 2004 to 2008

Central Intelligence Agency (CIA) estimates the life expectancy for Singapore Males to be 79.53 and females to be 84.96. The annual mortality improvement rates are around 5% for the insured live and 3% for the population. Is this improvement expected to continue into the future or will be plateau at some stage?

Pricing an NNEG for Singapore (1)

	A	B	C	D
Age	60	70	80	90
Sex	Male	Male	Male	Male
Property Value	S$1 million			
Loan Amount	S$250,000 (25% of property value)			
Mortality	70% S9702			
Interest Rate	15 year government bond rate (3.50%)			
Mortgage Rate	4.41% (Long term 15 year rate)			
Rental yield	3% (based on current rental yields)			
House price volatility	10% (based on historical volatility of PPI Index)			
NNEG (% Loan Amount)	17.58%	5.37%	0.71%	0.01%
NNEG (yield per annum)	0.54%	0.24%	0.05%	0.00%

Cost of the NNEG is particularly sensitive to age. Based on the assumptions, the cost of NNEG is close to 18% of loan value for policyholder age 60.

Pricing an NNEG for Singapore (2)

	Sensitivities (% Loan Amount)			
	A (Age 60)	B (Age 70)	C (Age 80)	D (Age 90)
Base	**17.58%**	**5.37%**	**0.71%**	**0.01%**
Revised NNEG if:				
- Mortality reduce to 50% S9702	22.38%	7.50%	1.08%	0.01%
- Risk free/mortgage rate increase by 1%	17.45%	5.33%	0.70%	0.01%
- Volatility increase by 1%	19.71%	6.61%	1.06%	0.02%
- Loan amount increase by 5%	24.02%	8.71%	1.60%	0.03%

Price of NNEG is very sensitive to amount of loan borrowed, house price volatility as well as mortality. Impact of interest rate is not significant.

Conclusion

- While Equity Release Scheme is well-suited for the Singaporean market, how will the “Asian sentiment” come into play in reality?
- What are Singaporean’s perception on possibly not being able to leave behind (at least) a property to their children/next generation?
- NNEG can be expensive particularly if loan is taken early on during retirement (age 60 or less).
- While there has been historically high expectation of getting profits from the eventual sale of their houses, how would they react when they realise that they have to share with the bank and they are not getting as much as expected? (for SAM plans)

Summary

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Challenges and Opportunities

• Proportion of assets in property	• The amount by which the crude mortality rate for Singapore males aged 65-69 has reduced since 1980	• The number of Singaporeans who have no financial plan in place for retirement
>50%	**60%**	**28%**

- Singapore represents an opportunity for equity release schemes, but there are challenges to overcome

Q&A

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