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Housing Policies in Singapore

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Abstract

Singapore has developed a unique housing system, with three-quarters of its housing stock built by the Housing & Development Board (HDB) and homeownership financed through Central Provident Fund (CPF) savings. As a result, the country's homeownership rate of 90% is one of the highest among market economies. At different stages of its economic development, the Government of Singapore was faced with a different set of housing problems. An integrated land–housing supply and financing framework was established in the 1960s to solve the severe housing shortage. By the 1990s, the challenge was that of renewing aging estates and creating a market for HDB transactions. Housing subsidies in the form of housing grants were also introduced. Recent challenges include curbing speculative and investment demand, as well as coping with increasing income inequalities and an aging population. These have brought about carefully crafted macroprudential policies, targeted housing grants, and schemes to help elderly households monetize their housing equity. This paper analyzes key pillars of the housing policy, specifically land acquisition, the HDB–CPF system, the role of markets, housing market interventions, the Ethnic Integration Policy, and the Lease Buyback Scheme. It concludes with lessons learned for other countries.

JEL Classification: R21, R31, R38

Contents

1. INTRODUCTION

In 2015, Singapore's population was 5.54 million, of which 3.38 million were citizens, 0.53 million were permanent residents, and 1.63 million were foreigners. One-fifth of its land area of 719 square kilometers (km^2) comprised reclaimed land (Table 1). Land scarcity and high population density (over 7,600 persons per km^2) provide justification for the dominance of the state in land ownership and housing provision, and the high level of intervention in the housing sector. The homeownership rate for the resident population has been above 90% since the early 1990s. Among resident employed households, the 2014 median household income from work was S$8,292 per month,[1] or S$99,504 per year.[2] The median house type is a four-room (approximately 90 m^2) flat sold by the Housing & Development Board (HDB), the government housing agency, on a 99-year leasehold basis. The median house price (market values) to annual household income ratio for 2015 was estimated at 5.0 (Demographia 2016).

Table 1: Population, Land Area, and Density of Singapore, 1970–2015

Year	Land Area (km^2)	Population Density (per km^2)	Total Population	Singapore Residents	Proportion of Foreigners (%)
1970	586	3,540	2,074,507	2,013,563	3
1980	618	3,906	2,413,945	2,282,125	5
1990	633	4,814	3,047,132	2,735,868	10
2000	683	5,897	4,027,887	3,273,363	19
2010	712	7,130	5,076,732	3,771,721	26
2015	719	7,698	5,535,002	3,902,690	29

km^2 = square kilometer.

Source: Government of Singapore, Department of Statistics.

Table 1 shows the increase in population and its changing composition by nationality status. The foreign component of Singapore's population has increased significantly, from 10% in 1990 to 19% in 2000, and was 29% in 2015. Permanent residents (who are not citizens) accounted for another 10% and citizens comprised 61% of the population in 2015. These statistics on changes in population composition are relevant for housing policy as the housing market in Singapore is highly segmented according to households' nationality status.

In the decades since the first elections were held in 1959 for self-government and since independence in 1965, Singapore has been ruled by the People's Action Party (PAP). The successful public housing program is "a foundation stone upon which … the PAP … builds its legitimacy among Singaporeans" (Chua 1997, preface). The unique housing system has 75% of the housing stock in 2015 classified as "public housing" built predominantly by the HDB; 82% of the resident population live in HDB estates, of which 79% lived in HDB-sold flats. Demand for homeownership is driven by the housing pension fund system introduced in 1968 when Central Provident Fund (CPF) savings were allowed to be used for down payment and mortgage payments for HDB flats.

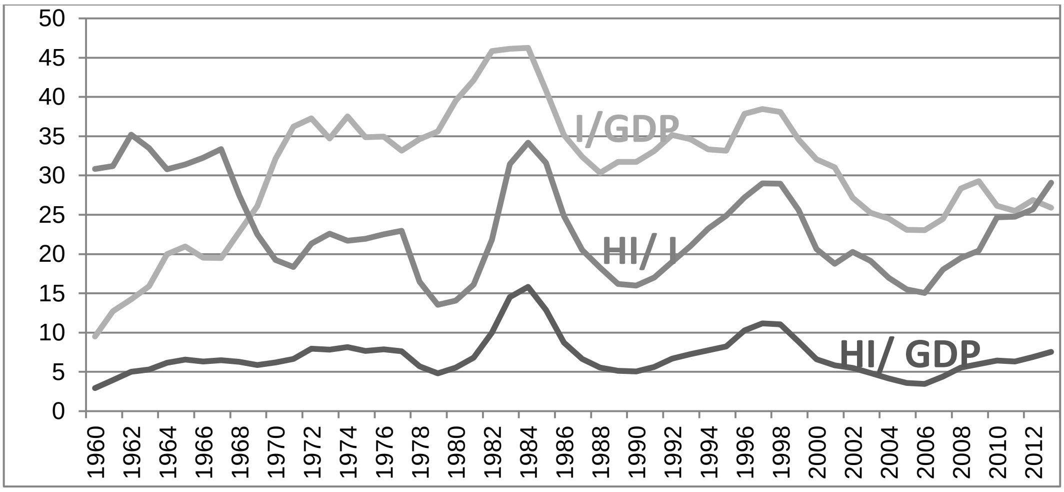
The HDB–CPF framework established in the 1960s has transformed the urban form of Singapore and remains largely intact 5 decades on. Between 1960 and 2013, the ratio of housing investment to gross domestic product (GDP) averaged 7%, with the ratio of housing investment to total investment averaging 23% (Figure 1). These ratios are high by

[1] Statistics are from Singapore government agency websites and Singapore Department of Statistics (2015).

[2] The exchange rate on 5 February 2016 was S$1.41 ≡ US$1.00.

international standards and reflect the policy attention and resources channeled into the housing sector.

Figure 1: Housing Investment Ratios in Singapore, 1960–2013
(%)



GDP = gross domestic product, HI = housing investment, I = total investment.

Data source: Government of Singapore, Department of Statistics website.

HDB rental and direct purchases (one unit per household) are restricted to citizens, with current monthly gross household income caps at S$1,500 for rental and S$12,000 for direct purchase, respectively. The Executive Condominium scheme, a hybrid public–private housing scheme for citizen households, has a household income cap of S$14,000. The resale HDB sector is available to citizens and Singapore permanent residents (SPRs). However, the HDB housing grants are made by taking into account to citizenship, marital status, and household income of purchaser households. The private housing sector is dominated by transactions by higher-income Singapore citizens, SPRs, expatriates, and foreign investors. Table 2 shows the distribution of resident households by dwelling type and average monthly household incomes. Of the 1.2 million resident households in 2014, 80% resided in HDB-built flats.

Table 2: Resident Households by Dwelling Type and Household Income in Singapore, 2014

Dwelling Type	Resident Households	Average Monthly Household Income from Work among Resident Employed Households (S$)
Total	**1,200,000 = 100%**	
Total HDB	**80.4%**	
1- and 2-room flats	5.3%	2,313
3-room flats	18.3%	5,805
4-room flats	32.2%	8,293
5-room and executive flats	24.4%	11,606
Private House Types		
Condominiums and other apartments	13.5%	19,843
Landed properties	5.8%	27,363

HDB = Housing & Development Board.

Note: Average HDB flat sizes estimated from 2015 resale transaction data: 1-room 33 m^2; 2-room 45 m^2; 3-room 73 m^2; 4-room 96 m^2; 5-room 115 m^2. Private housing has much wider variation in sizes and amenities.

Source: Government of Singapore, Department of Statistics (2015).

The housing policy in Singapore has evolved over time in response to different housing challenges. Phang (2015c, 12) states that "in the 1960s, the political turbulence of self-government, merger with Malaysia, and unexpected independence were not conducive to attracting long-term investments. On the housing front, the government was faced with a largely immigrant and growing population, a chronic housing shortage as well as insufficient private-sector resources and capacity to provide adequate solutions." Measures that had previously been undertaken by the British colonial government in town planning and the provision of rental houses and flats proved wholly inadequate. Public housing built by the Singapore Improvement Trust (SIT)[3] housed 8.8% of the population by 1959, with the majority living in overcrowded prewar rent-controlled apartments lacking access to water and modern sanitation. Others faced housing conditions comparable to today's slums. Given this lack of adequate housing, the newly elected government made it a priority to provide homes on a large scale. The government developed its housing policies based on three pillars: the establishment of the HDB in 1960, the enactment of the Land Acquisition Act in 1966, and the expansion of the role of the CPF to become a housing finance institution in 1968.

By the 1970s, the HDB–CPF housing framework, representing a tightly integrated land–housing supply and financing system, was working effectively to channel resources into the housing sector. With the HDB–CPF system in place, the housing shortage was resolved by the 1980s. In the 1990s, the challenge was that of renewing aging estates and of creating a market for HDB transactions as households upgraded to larger flats and private housing. Housing subsidies on the demand side in the form of housing grants were also introduced. The more recent (since 2000) housing policy challenges include the need to curb the speculative and investment housing demand, the increase in income inequalities, as well as an aging population. These have brought about the introduction of carefully crafted macroprudential policies, targeted housing grants to assist low- and middle-income households, and schemes to help elderly households monetize their housing equity.[4]

Sections 2–7 of this paper analyze the key pillars of Singapore's housing policy, specifically land acquisition, the HDB–CPF system of homeownership, the role of the market, housing market interventions, the ethnic integration policy, the land lease system, and the Lease Buyback Scheme. Section 8 concludes with lessons learned for other Asian countries.

2. THE LAND ACQUISITION ACT, 1966

Singapore, a former British colony, held its first general elections as a fully self-governing state in 1959, joined the Federation of Malaysia in 1963, and became an independent republic in 1965. The housing situation prior to independence was one of acute shortage, resulting in overcrowding, misery, slums, and squatter settlements. It was during such a period of political uncertainty and housing crisis that legislation and amendments for urban and housing sector transformations were passed. Recognizing that the prerequisite for a successful public housing program was the availability of inexpensive land, the government paid much attention to amending legislation on land acquisition by the state from the early 1960s. The Land Acquisition Act of 1966 was a crucial step in Singapore's housing policies and economic development and has had major redistribution effects (Phang 1996, 2015a).

[3] See Phang (1992, Chapter 3) for a description of the SIT and other public sector agencies involved in housing development in the 1960s and 1970s.

[4] See Phang (1992, 2007, 2015c) for historical accounts and updates of housing policies.

In 1964, the Land Acquisition Bill was debated in the legislative assembly while Singapore was a part of the Federation of Malaysia. Then Prime Minister Lee Kuan Yew explained that the approach to determining compensation for land acquired by the government should be the prevention of economic windfalls to landowners (Singapore Parliamentary Reports, 10 June 1964):

> *"First, that no private landowner should benefit from development which had taken place at public expense; and secondly, the price paid on the acquisition for public purposes should not be higher than what the land would have been worth had the Government not contemplated development generally in the area."*[5]

On the matter of land acquisition, the views expounded by the Prime Minister were, however, inconsistent with Article 13 of the Malaysian Constitution, which provides for the right to adequate compensation in the event of compulsory acquisition. Upon independence in August 1965, the Singapore Parliament adopted all the provisions of the Malaysian Constitution regarding fundamental rights except for Article 13.

The Land Acquisition Act, enacted in 1966, gives the state broad powers to acquire land:

> (a) for any public purpose;
>
> (b) by any person, corporation or statutory board, for any work or an undertaking which, in the opinion of the Minister, is of public benefit or of public utility or in the public interest; or
>
> (c) for any residential, commercial or industrial purposes.

Landowners cannot object to the decision, and appeals on compensation can only be made to an Appeals Board and not to the courts. Initially, almost all legal owners appealed the compensation awards and, in 1973, the concept of a statutory date was introduced. In the words of the Prime Minister (K.Y. Lee 2000, 118–119):

> *"Later, I further amended the law to give the government the power to acquire land for public purposes at its value on a date fixed at 30 November 1973. I saw no reason why private landowners should profit from an increase in land value brought about by economic development and the infrastructure paid for with public funds."*

Between 1975 and 1990, the annual GDP growth rate averaged 8%. The private housing price index grew at an average real rate of 10% per year. Land prices would have increased by much more than housing prices. Many private landowners were, however, unable to avail themselves of this high rate of return as the government acquired land not at market prices but at compensation fixed at the lower of 1973 prices or market values for most of that period. Compensation was capped at 1973 levels for about 14 years between 1973 and 1987, with no allowance being made for market valuation or the landowner's purchase price. Exceptions were made on a case-by-case basis.

Singapore has since moved to a more market-based approach for compensation of acquired land. Subsequent amendments to the Land Acquisition Act changed the statutory date for purposes of valuation for compensation to 1 January of 1986, 1992, and 1995. In 2007, the use of a historical statutory date was removed by Parliament, and compensation has since been pegged to full market value.

State land, as a proportion of total land, grew from 44% in 1960 to 76% by 1985, and was about 90% by 2005.[6] A significant portion of the increase in state land can be attributed to land reclamation. Land acquisition was an important step in Singapore's housing policies. However, it meant that existing owners had to be expropriated. In most other countries, such clearance would have encountered strong resistance by dwellers. This was also the case in

[5] See also Centre for Liveable Cities (2014, 12–18).

[6] Phang (1992: 24) and Singapore Land Authority website (http://sla.gov.sg; accessed on 25 Oct 2005).

1960s Singapore when resettlement was initially viewed with hostility and suspicion (Centre for Liveable Cities 2014, 21). To overcome resistance, the government's policy was to provide suitable alternative accommodation for *all* businesses and persons affected by its land acquisition programs. Planners at that time estimated that for every slum structure demolished then, seven new flats were required to relocate families affected (Choe 1975). This meant that the processes for public housing construction, land acquisition, slum clearance and resettlement, and urban renewal in Singapore were closely interrelated. Chua (1997, 132) shows how commitment to universal provision of housing "allowed the PAP government to take the strong moral high ground on acquisition of land for public housing."

A detailed study of land acquisition and resettlement can be found in Centre for Liveable Cities (2014). The study highlights several reasons for the relative success of land acquisition and resettlement in Singapore as compared with obstacles and resistance in other countries. These included the following factors:

(i) Legal and constitutional mandate as well as clear processes in the form of the Land Acquisition Act that established legitimacy and the rule of law in the conduct of public officials carrying out these duties.

(ii) Meticulous and detailed processes for record keeping and calculation of compensation for squatters' assets at market value.

(iii) The superiority of alternative accommodation, business premises, and environments offered by the government to affected people to replace the land or property that had been taken from them—although squatters had no legal interest in the affected land, they were compensated for improvements (such as shacks, vegetable plots, and livestock) and were also given priority allocation of new land in the case of farmers or HDB flats.

(iv) Effective forward planning and coordination to ensure smooth resettlement due largely to the integrated housing, resettlement, and estate planning functions of the HDB because the Resettlement Department was housed within the HDB from 1963.

Subsidiary legislation in the form of the State Land Rules, 1968 provided that titles for state-owned land should be for terms not exceeding 99 years. Through the Land Acquisition Act, the government cleared low-density housing, slums, villages, and squatter areas, and assembled land parcels. State land was leased to government agencies for the development of high-rise "public" housing which were sold on a 99-year leasehold basis to eligible households, as well as for the development of industrial estates, educational institutions, and other urban public amenities. Up to half of the land acquired by the state since the enactment of the act has been allocated for housing development by both the public and private sectors (Phang 1996).

Singapore's land policies can be described as land reform in an urban setting. It involved a massive transfer of land resource from private landowners to the state in the first 2 decades after independence. That large plots of land in Singapore were owned by a small number of wealthy landowners during the 1960s helped explain why acquiring land from this group was regarded as fair by Parliament (Centre for Liveable Cities 2014, 7).[7] Chua (1997, 134) writes that "the popularity of the government's action among the overwhelming propertyless electorate enabled it to bear the rejection of this very small minority." The major acquisition and redistribution of a critical resource contributed to the development of industrial estates, the financial district, commercial developments, the large public housing program, and public sector infrastructure development. The Land Acquisition Act of 1966 thus underpinned the successful economic development of Singapore (Phang 1996).

[7] Large agricultural plots outside the city were owned by wealthy individuals and British private companies.

Public land leasing for private sector development generally falls under the term Government Land Sales in Singapore.[8] Much urban redevelopment in Singapore has been achieved through this land sales program, administered mainly by the Urban Redevelopment Authority and, to a lesser extent, the HDB. Under the program, the government amalgamated or reclaimed land, inserted infrastructure, provided planning and urban design guidelines, and released the land for sale to private (including foreign) developers (Phang 2005). Sites are usually sold on 99-year leases for commercial, hotel, and private residential development, whereas leases for industrial sites are usually for 60 years or less. The lease tenure for other types of sites varies depending on the uses. The usual sale method is through public tender.

Proceeds from land sales do not constitute part of the government's operating revenue but are instead channeled into government reserves. Singapore's public wealth is estimated to be more than 2.5 times its GDP. These are the net assets of the two sovereign wealth funds (Temasek Holdings and the Government Investment Corporation) and the Monetary Authority of Singapore. Investment incomes from these institutions contribute to the government's annual operating revenue.

3. THE HDB–CPF HOUSING FRAMEWORK

The HDB is the key pillar of Singapore's housing system. The achievements of the HDB, including its dominant role in Singapore's housing sector, have been extensively documented elsewhere.[9] This section draws from the existing literature and provides a brief summary of the main features of the framework.

The HDB began operations on 1 February 1960. It replaced the SIT and was set up as a statutory board to provide "decent homes equipped with modern amenities for all those who needed them" (Teh 1975, 6). A target of 110,000 dwelling units to be built was set for 1960–1970. On 25 May 1961, a huge fire broke out in the Bukit Ho Swee squatter district which rendered about 16,000 people homeless. Housing the victims of the fire became the HDB's first major challenge. The government compulsorily acquired the burned-out land as a site for 12,000 low-cost flats and promised to complete the first blocks of flats within 9 months. The first five blocks of flats were completed by February 1962 and all 16,000 people who had lost their homes in the fire had been rehoused on the same site by the end of 1964 (see Latif 2009, 81–84).[10]

In its initial years of operation, the HDB followed the British public housing model of providing only rental units. It began offering housing units for sale on 99-year leasehold basis from 1964 under its Home Ownership for the People scheme.[11] The HDB priced housing units affordably for households with incomes not exceeding S$800 a month and offered loans such that owners paid less in monthly mortgage payments than they would have done in rents.

Price subsidies and housing grants are given to eligible households at the point of purchase and not deferred. Government support for the HDB is in the form of (i) annual grants from the current budget to cover its deficits incurred for development, maintenance, and upgrading of estates; (ii) loans for mortgage lending and long-term development purposes; and (iii) land allocation for HDB housing and comprehensive HDB town planning.

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[8] See Urban Redevelopment Authority web page at https://www.ura.gov.sg/uol/land-sales.aspx

[9] Notable government publications include Yeh (1975), Wong and Yeh (1985), Fernandez (2011), and Centre for Liveable Cities and HDB (2013). Academic publications include Chua (1997), Phang (1992, 2007, 2013a, 2015c), and Kim and Phang (2013).

[10] As a consequence of the fire, an amendment was passed to allow land that had been devastated by fire to be acquired at not more than one-third of the value of the vacant site, unless the minister specified otherwise. The one-third figure was to ensure that landowners did not benefit from an appreciation in the value of their land that would then be free from encumbrances.

[11] See references in footnote 9, and HDB website at http://www.hdb.gov.sg

The HDB brought about a transformation on the housing supply side. Table 3 shows the rate of increase in population and the stock of housing from 1970 to 2015. Housing units increased by about 50% in each decade from 1970 to 2000, outstripping population growth. In particular, HDB housing displaced private housing as low-density shophouses, squatter settlements, and villages were acquired by the government and demolished to make way for high-rise flats. The homeownership rate doubled within 1 decade, from 29% in 1970 to 59% in 1980, and reached 88% by 1990. From 2000 to 2010, the pace of housing construction slowed dramatically and was below the population growth rate of 26% (Table 3).

Table 3: Housing Stock, Housing Supply, and Homeownership Rate, 1970–2015

	Population ('000)	**Total Housing Stock**	**HDB Housing**	**Private Housing**	**Persons per Dwelling Unit**	**HDB Dwellings as Proportion of Housing Stock**	**Resident Home-ownership Rate**
1970	2,075	305,833	120,138	185,695	6.8	39%	29.4%
1980	2,414	467,142	337,198	129,944	5.2	72%	58.8%
1990	3,047	690,561	574,443	116,118	4.4	83%	87.5%
2000	4,017	1,039,677	846,649	193,028	3.9	81%	92.0%
2010	5,076	1,156,732	898,532	258,200	4.4	78%	87.2%
2015	5,535	1,296,304	968,856	327,448	4.3	75%	90.3%
% Change							
1970–1980	16%	53%	181%	–30%	–24%	84%	100%
1980–1990	26%	48%	70%	–11%	–15%	15%	49%
1990–2000	32%	51%	47%	66%	–12%	–2%	5%
2000–2010	26%	11%	6%	34%	14%	–5%	–5%
2010–2015	9%	12%	8%	27%	–3%	–4%	4%

HDB = Housing & Development Board.

Sources: Data from Singapore government publications and websites.

A major policy innovation in 1968 was for the government to utilize the CPF as a vehicle for housing finance. In 1968, a new law was introduced to allow withdrawals from the fund to finance the purchase of housing sold by the HDB. Both employers and employees contributed a certain percentage of the individual employee's monthly salary toward the employee's personal and portable account in the fund. When the CPF was established in 1955, the contribution rate was 10% (5% each by employees and employers) of the monthly salary. With the new law in 1968, the contribution rates were raised steadily, and by 1984, they were 25% of wages. The contribution rates in 2016 are 20% of wages for employees and 17% of wages for employers, up to a monthly salary ceiling of S$6,000.[12]

Figure 2 shows a schematic view of the mobilization of domestic savings for housing finance through the CPF. Between 1968 and 1981, CPF savings could only be for payments related to the purchase of public-sector-built housing (such as down payment or stamp duties). At the beginning of the 1980s, the scheme was gradually liberalized, allowing for withdrawals for other, non-housing-related purposes, such as medical expenditures. The interest rate on CPF Ordinary Account savings yields a minimum of 2.5%.[13]

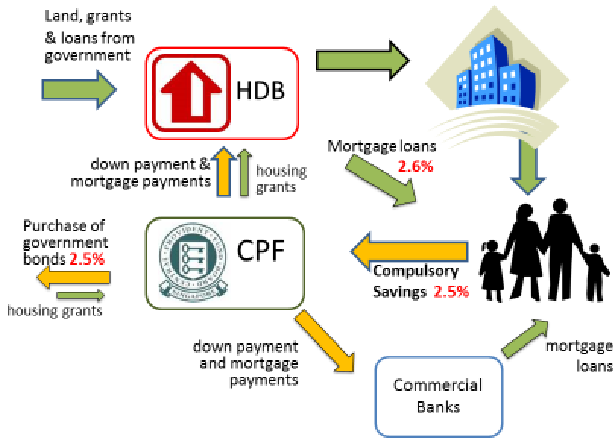
The HDB receives government loans to finance its mortgage lending and pays interest at the prevailing CPF savings rate. The HDB uses the loans to provides mortgage loans and mortgage insurance to buyers of its leasehold flats (both new and resale). The typical loan represents 80% of the price of the flat. The maximum repayment period is limited to 25

[12] For details, see the CPF web page at https://mycpf.cpf.gov.sg/employers/employerguides/employer-guides/paying-cpf-contributions/cpf-contribution-and-allocation-rates.

[13] From 1 January 2008, an extra 1% interest per year is paid on the first S$60,000 of a member's combined balances. See the CPF web page on details of interest rates payable for various accounts at https://mycpf.cpf.gov.sg/Members/AboutUs/about-us-info/cpf-interest-rates. Historical interest rates can be found at https://mycpf.cpf.gov.sg/Assets/common/Documents/InterestRate.pdf.

years. Every household can apply for a maximum of two HDB loans. The mortgage interest rate charged by the HDB is pegged at 0.1 percentage point above the CPF ordinary account savings interest rate. (The latter is based on savings rates offered by the commercial banks, subject to a minimum of 2.5%.)

Figure 2: Mobilization of Domestic Savings for Housing through the CPF



CPF = Central Provident Fund, HDB = Housing & Development Board.

Sources: Modified from Phang (2007, 2013a).

Table 4 shows data for net assets, contributions, and withdrawals made by CPF members as a proportion of GDP for 2014. Net assets of the CPF are 71% of GDP, contributions by members comprise 7% of GDP, and net withdrawals are 4% of GDP. Withdrawals for the purpose of housing payments dominate and comprised 55% of total net withdrawals.

The integrated HDB–CPF framework contributed to the growth of housing loans and the development of the mortgage sector as homeownership rates increased. The ratio of housing mortgage loans to GDP was only 4% in 1970; it increased to 10% by 1980 and to 62% by 2000. In 2014, the resident households' housing mortgage loans to GDP ratio was 55.5%. Between 1970 and 2000, HDB outstanding mortgage loans accounted for more than 50% of total housing loans (Phang 2001). In 2002, the government amended its policy to allow banks instead of the CPF to have first claim on a property should a borrower default on his or her mortgage loan (Phang 2003). This paved the way for commercial banks to enter the HDB mortgage market from 2003. With the low interest rate environment in recent years, commercial banks have been able to offer loans at rates below the HDB mortgage loans' 2.6% interest floor. Financial institutions have since increased their share of outstanding housing mortgage loans to more than 80% of the total (see Table 4).

Table 4: CPF Assets, Contributions and Withdrawals by Purpose, 2014

	S$ million	% of GDP
GDP	390,089	–
Resident households' outstanding mortgage loans with financial institutions	179,578	46.0
Resident households' HDB mortgages	37,178	9.5
CPF net assets	277,778	71.2
CPF contributions by members	27,917	7.2
CPF total withdrawals (net of refunds)	17,298	4.4
Purpose of Withdrawal	**S$ million**	**% of CPF total net withdrawals**
HDB housing	6,892	39.8
Private housing	2,706	15.6
Attained the age of 55 years*	4,266	24.7
Medisave and medical insurance	2,162	12.5
Purchase of life-long annuity	2,069	12.0

CPF = Central Provident Fund, GDP = gross domestic product.

* Or leaving Singapore and West Malaysia permanently, as well as on grounds of death or permanent incapacitation.

Sources: Singapore Department of Statistics and CPF Financial Statements, 2014.

4. THE ROLE OF MARKETS

In a heavily state-dominated and highly regulated sector, marketization of HDB flats has taken place in phases. In the 1960s and 1970s, when there were long waiting lists for HDB flats, the HDB allocated flats with priority given to households affected by resettlement and on a first-come-first-served basis for other households. Separate waiting lists were maintained for rental and sale flats, and applicants could state their preferred zone and type of flat desired. The waiting lists averaged 70,000 households per year between 1971 and 1985 (Phang 1992, 166). During this period of general shortage, there was policy concern that HDB dwellings should not become a vehicle for speculation by allowing the price subsidies to be capitalized on a secondary market. There were thus numerous regulations concerning the resale of HDB flats which restricted household mobility.

Restrictions on resale took the following forms:

- Ban on market transactions prior to 1971: The HDB required owners who wished to sell their flats to return them to the HDB at the original purchase price plus the depreciated cost of improvements.
- Minimum occupancy period: In 1971, HDB allowed owners who had resided in their flats for a minimum of 3 years to sell their flats at market prices to buyers of their choice who satisfied the eligibility requirements for HDB homeownership. The minimum occupancy period before resale was increased to 5 years in 1973 and has remained in place since.
- Debarment period: In 1971, when resale became permitted, those who sold their flat were debarred from buying another HDB flat for a year. The debarment period was increased to 2.5 years in 1975. The debarment period did not allow for household mobility within the HDB sector and was a great deterrent for any household considering sale of its dwelling. This was abolished in 1979, thereby greatly facilitating transactions within the public housing sector.
- Resale levies: In 1979, in place of the debarment period, a 5% levy on the transacted price of the dwelling was imposed on the seller to "reduce windfall profits." A system of graded resale levies, based on flat type, was introduced in 1982. Rules regarding

circumstances under which levies could be waived were fine-tuned in the 1980s. The resale levy system in its current form ensures that the subsidy on the second new flat purchased by the household from the HDB is smaller than that for the first-time HDB flat buyer.

Only citizens, non-owners of any other residential property, households with a minimum size of two persons with household incomes below the income ceiling set by the HDB, were eligible to purchase new or resale HDB flats prior to 1989. These rules restricted mobility even as household incomes increased. Phang (1992) found that, in 1981, 31% of multiple-worker HDB households with length of tenure greater than 5 years were no longer eligible to purchase HDB flats. The consequence for commuting time was that, on average, workers residing in HDB housing commuted greater distances by 2.2 minutes of auto time or 5.6 minutes of transit time, as compared with those residing in private apartments.

As the housing shortage eased and households sought to upgrade their housing or change their location, there was a need to amend resale regulations on the eligibility of buyers in order to facilitate household mobility within the HDB sector, as well as from the HDB to the private sector and vice versa. Facilitating the development of a HDB resale market through deregulation speeded up in the late 1980s and early 1990s. This could also be considered to be in line with the then worldwide trend toward privatization and deregulation.

The following restrictions on purchasers of HDB resale flats were relaxed in 1989:

- Income caps for buyers: The income ceiling restriction was removed for buyers of HDB resale flats.
- Nationality status of buyers: Permanent residents were allowed to purchase HDB resale flats for owner-occupancy.
- Private housing ownership: Private housing owners were allowed to purchase HDB resale flats for owner-occupancy. HDB flat-owners, who could not own any other residential property before, could also invest in private-sector-built dwellings.

From 1991, single citizens above the age of 35 years were allowed to purchase HDB resale flats for owner-occupancy. This was the first instance of HDB's recognition of the needs of single citizens to own their own homes independently.[14] In 1993, measures to deregulate HDB financing for resale flats were introduced. At that time, the HDB was the only source of finance for buyers of resale HDB flats.

The volume of transactions of resale HDB flats increased from fewer than 800 units in 1979 to 13,000 units in 1987 and 60,000 units in 1999. The number of resale transactions was 31,000 in 2004 and 37,000 in 2009; it declined to 17,000 in 2014 (a 10-year low)—a result of numerous interventions to "cool" the property market.[15] The effects of these policy measures on housing prices are further discussed in the next section.

5. SUPPLY-SIDE VS. DEMAND-SIDE INTERVENTIONS

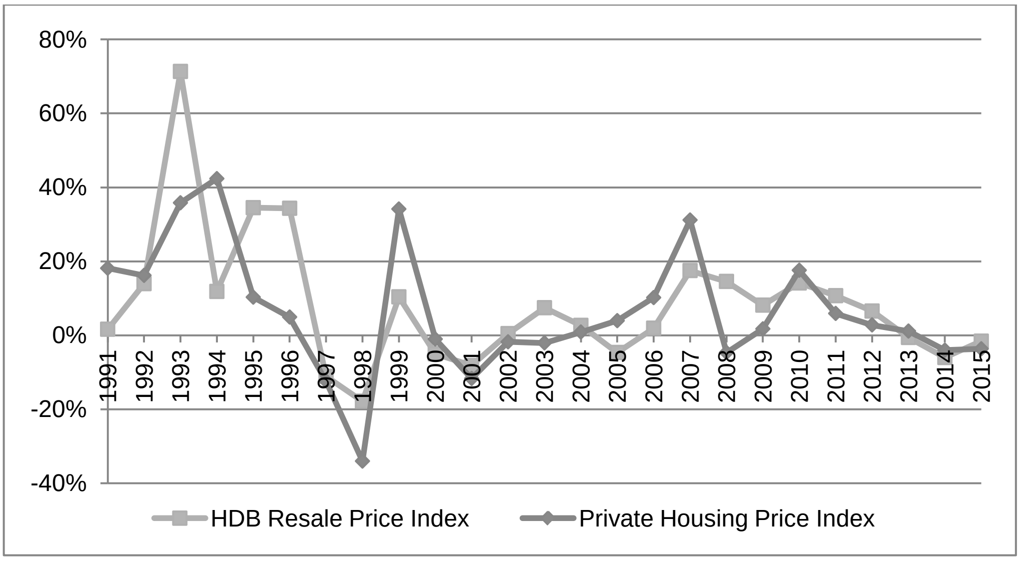
Consistent with the shift toward a greater reliance on the market, the government introduced CPF housing grants for the purchase of resale HDB flats in 1994. This demand-side policy was a shift from the previous supply-side interventions. The subsidy was provided to eligible first-time applicant households and deposited in their CPF accounts. The grants, however, carried the risk that they could be capitalized into housing prices. The risk was exacerbated

[14] The CPF housing grant was extended to single citizens (age 35 and above) in 1998. Since 2013, eligible single citizens above 35 can buy a new 2-room HDB flat direct from the HDB. They may also apply for Additional and Special Housing Grants. See: http://www.hdb.gov.sg/cs/infoweb/residential/buying-a-flat/new/single-singapore-citizen-scheme

[15] Resale volume data from HDB Annual Reports and HDB website at: http://www.hdb.gov.sg/fi10/fi10321p.nsf/w/BuyResaleFlatNumberofResaleApplications?OpenDocument

by the simultaneous deregulation of the resale market, in particular the removal of the income ceiling and citizenship restrictions, and the resale HDB prices indeed started to increase. Figure 3 shows the rate of increase in price indices for both private housing and HDB resale flats from 1991. Following housing finance deregulation in 1993, HDB resale prices increased sharply (by 71%) within the same year. The HDB resale prices rose further after the introduction of CPF housing grants in 1994. This price increase had to be expected, because resale public and private housing markets had become less segmented since high-income citizens as well as permanent residents could purchase HDB resale flats.

Figure 3: Changes in Housing Price Indices, 1991–2015



HDB = Housing & Development Board.

Sources: Data from Urban Redevelopment Authority and HDB websites.

The government reacted by an increase in the HDB supply of new housing, the introduction of a new Executive Condominium scheme, as well as an increase in government land sales for private housing development. However, the housing prices continued to soar, with HDB resale price increases much higher than private housing price increases in the 1993, 1995, and 1996 (Figure 3). To bring prices down, the government introduced a package of anti-speculation measures on 15 May 1996. These measures included capital gains taxes on the sale of any property within 3 years of purchase, stamp duty on every sale and subsale of property, limitation of housing loans to 80% of property value, as well as limiting foreigners to non-Singapore-dollar-denominated housing loans. The HDB also changed various regulations to bring demand down, such as limiting HDB flat buyers to two loans from the HDB where there had been no limit before.

The effects of these measures coincided with the onset of the Asian economic crisis in 1997 and housing prices fell sharply. The decline in HDB resale prices was less than the decline in private housing prices in 1998. In order to avoid too steep a fall, the government stopped land sales and reduced stepwise the CPF housing grants. As a consequence, both the private and public housing sectors were confronted with a situation of unsold units. As described in Phang (2007), in early 2002, the HDB suspended its Registration for Flats (queuing) System and ensured that new flats were only built when there was sufficient demand for them. Other major restructuring measures followed, which resulted in a sharp curtailment of the HDB building program; from 2000 to 2010, the number of HDB dwelling units increased by a mere 6% (Table 3).

During the global financial crisis of 2008, HDB prices were remarkably resilient and continued to increase while private housing prices fell. In the post-2008 global financial crisis period, limited supply, rapid population increase, the low interest rate environment, and high global liquidity, resulting from accommodative monetary policies of central banks in developed economies, led to accelerated price increases of Singapore property. Over the decades, the upward trend in Singapore real estate prices had caused housing (both HDB and private) to be viewed as an attractive investment class as compared with other asset classes. This view has been reinforced by official statements from the government that HDB flats are assets which it commits “to upgrade” and “whose value can be unlocked for retirement, if needed” (Ministry of National Development 2011b). This approach raises intergenerational equity implications and questions about the longer-term sustainability of relying on appreciating house prices to finance retirement (Phang 2012).

The continuous upward trend in prices and the economic and political risks of a housing bubble and increasingly unaffordable housing compelled the government to intervene. Since 2006, the Government of Singapore has announced several consecutive rounds of “cooling” measures to curb investment demand for housing. Over the same period, to enhance housing affordability, housing grants which allowed the HDB to better price-discriminate based on household incomes became a feature of the HDB pricing policy. As eligibility for HDB new subsidized flats and CPF Housing Grants (of S$40,000) extended to over 80% of Singapore citizen households, subsidies needed to be better calibrated to household incomes.

The Additional CPF Housing Grant (AHG) was introduced in 2006 (and enhanced in 2007 and 2009) to allow families with lower incomes to receive a higher grant amount which could be used for either a new flat or a resale flat. The amount of the AHG depends on the average gross monthly household income. Households with monthly household incomes less than S$5,000 are eligible for the AHG. The AHG ranges from S$5,000 (for households with incomes from S$4,501 to S$5,000) to S$40,000 (for households with incomes below S$1,500).

The Special Housing Grant (SHG) was introduced in 2011 to help households buy four-room or smaller new flats in non-mature estates directly from the HDB. The SHG was enhanced in 2012, significantly expanded in 2013, and expanded again in 2015.[16] The amount of the SHG depends on the average gross monthly household income. Households with household incomes less than S$8,500 per month are eligible for the grant. The amount of the grant ranges from S$5,000 for households with incomes from S$8,000 to S$8,500, to S$40,000 for households with incomes below S$5,000.

A Step-Up Housing Grant (of S$15,000) was introduced in 2013 to help families in subsidized two-room HDB flats in non-mature estates upgrade to purchase three-room HDB flats in non-mature estates. The net effect of these several housing grants is to allow the HDB to price its flats based on a household’s ability-to-pay thus ensuring that almost all employed citizens can afford to own a home.

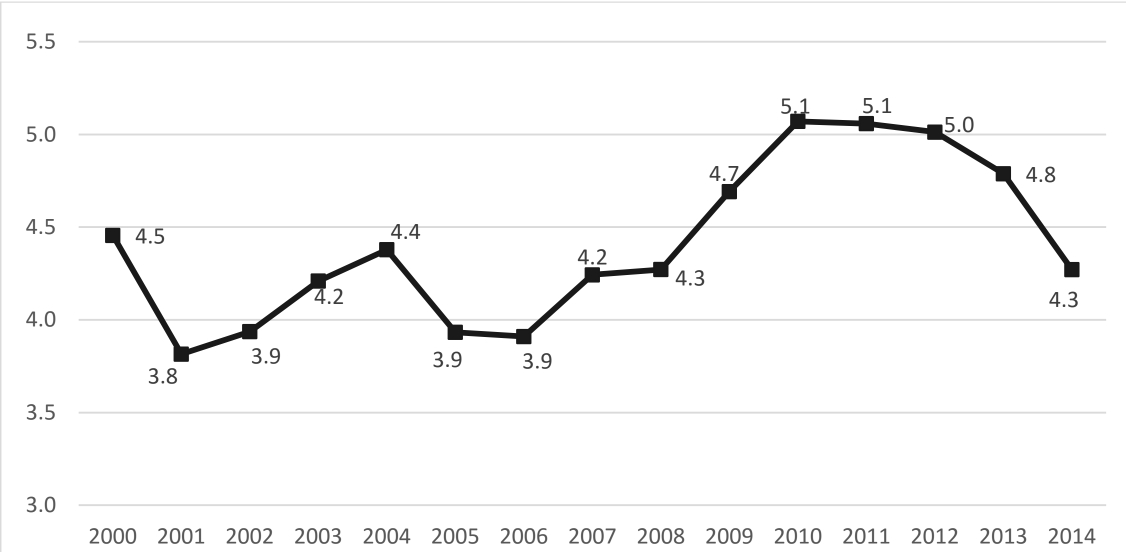
From independence, homeownership affordability has always been a very visible symbol of the government’s “ability to fulfil its promise to improve the living conditions of the entire nation” (Chua 1997, 139). The ratio of the price of a new HDB four-room flat to median household income was generally 4.0 or less prior to 2005 (Phang 2009, 2010). HDB resale prices are generally higher than new flat prices as they are market-determined and there is no waiting period for construction to be completed. Figure 4 shows the ratio of the median HDB 4-room flat resale price to median resident employed household annual income. The ratio was generally below 4.5 prior to 2008 and rose to above 5.0 from 2010 to 2012. As prices in the HDB resale market rose, new HDB flat prices followed a similar trend, outstripping income growth. Although the median-income household would be able to easily afford a new HDB five-room flat in a new town location at around 4 times the annual income in 2006, the price had increased to closer to 6 times the annual income by 2011 (Phang

[16] In August 2015, the government increased the maximum grant amount from S$20,000 to S$40,000. The income ceiling for households to qualify to receive the SHG was raised from S$6,500 to S$8,500.

2012). The introduction of new housing grants enhanced affordability but contributed to house price increases during the period when new HDB housing supply was minimal.

Moreover, what is affordable may not be available, as new HDB build-to-order (BTO) projects were reportedly oversubscribed (e.g., by up to 5 times in a February 2011 exercise). Dissatisfaction over rising prices and difficulties in securing HDB housing were among the factors that contributed to a 6% swing in votes against the PAP in the May 2011 elections (from the 2006 elections) to 60%, its lowest since independence. The opposition Workers' Party won six seats in Parliament, including a Group Representation Constituency of five seats, the first time a Group Representation Constituency had been won by an opposition party. In what may be interpreted as a response to these developments, the government increased the household income ceiling for the purchase of new HDB flats from S$8,000 a month to S$10,000 a month in August 2011 (Ministry of National Development 2011a). The income ceiling for eligibility to purchase an Executive Condominium was also increased, from S$10,000 to S$12,000. In August 2015, the government further increased the monthly household income ceilings from S$10,000 to S$12,000 for purchasing a new HDB flat, and from S$12,000 to S$14,000 for a new Executive Condominium (H.L. Lee 2015). These changes enable even more young Singaporean households to enjoy housing subsidies for homeownership—the median household income among all employed households was S$8,292 in 2014 according to the Department of Statistics.

Figure 4: Median HDB 4-Room Flat Resale Price to Median Household Income Ratio



HDB = Housing & Development Board.

Sources: Calculated from data from government websites.

In what can be described as a retreat from the market, new HDB flats have since 2013 been offered at prices that are "delinked" from market prices. In 2013, the Minister for National Development announced that he aimed to bring down BTO prices from about 5.5 times applicant households' median annual income to 4 times their median annual income. In 2014, after grants, three-room BTO flats cost 4.57 times the annual median applicant households' annual income (Table 5). Four- and five-room flats were at prices that are at 5.26 times and 5.36 times applicant households' annual incomes, respectively (*The Straits Times*, 17 November 2014).

Numerous measures have been introduced to cool the housing market between 2006 and 2013. The measures introduced include the following:[17]

[17] For details of these measures, see Lee et al. (2013) and http://www.srx.com.sg/cooling-measures

- Prohibiting developers from allowing purchasers to defer stamp duty and interest payments to a later date
- Prohibition of interest-only housing loans
- Seller stamp duty
- Loan-to-value ratio limits
- Additional buyer stamp duty
- Tenor restriction limit
- Three-year waiting period before new SPRs are eligible to purchase resale HDB flats
- Mortgage service ratio limit
- Total debt service ratio limit

Table 5: Price Affordability of HDB Flats in 2014

HDB Flat Type	Average BTO Price	Average BTO Price after Grants	Applicants' Median Annual Household Income	Ratio of Price (after Grants) to Income
2-room	$110,000	$55,000	$19,200	2.86
3-room	$187,000	$137,000	$30,000	4.57
4-room	$295,000	$265,000	$50,400	5.26
5-room	$386,000	$386,000	$72,000	5.36

BTO = build-to-order, HDB = Housing & Development Board.

Note: BTO refers to HDB flats. Prices are for BTO flats in non-mature estates.

Source: *The Straits Times*, 17 November 2014.

With the numerous market intervention measures introduced since 2006, it is difficult to isolate the price effects of a particular cooling measure or the extent to which housing grants were capitalized (Lee et al. 2013). The measures to cool the market can be viewed as macroprudential policies to stabilize housing prices, reduce the returns for housing investors, and pre-empt a housing bubble from developing.

The housing tax and subsidy framework in Singapore is highly progressive. The basic idea is that wealthy property owners and investors are taxed and the receipts used to subsidize homeownership of lower-income groups. Table 6 provides a simplified picture of the progressivity of the housing tax and subsidy framework at the point of purchase. The housing wealth redistribution is codified in a complex law. Aiming for a fair and targeted outcome, the effective housing subsidy is based on multiple criteria. For example, in 2015, the Proximity Housing Grant (PHG) was set up to enhance grants for households purchasing a resale HDB flat close to their parents or children.

Table 6: Progressivity of Housing Purchase Taxes and Subsidies

Residency/Incomes/Housing Types	Additional Buyer Stamp Duty (+) Price Subsidy (–)
Foreigners	15%
SPR investors	10%
Singaporean investors	7%
SPR homeowners	5%
Singaporean high-income homeowners	0%
Executive Condominium	–10%
HDB 5-room	–12%
HDB 4-room	–20%
HDB 3-room	–35%
HDB 2-room	–50%

HDB = Housing & Development Board, SPR = Singapore permanent resident.

Note: Estimates of price subsidies based on difference between resale market prices and new flat prices.

In order to further curb the housing demand, the government has been increasing the supply of HDB flats since 2011. With the increase in supply of both HDB and private housing, the shortage of housing has started to decline. The government, however, aims to ensure that housing remains an attractive investment; one reason being that the wealth of many citizens is locked into housing and a sudden fall of housing prices would have considerable negative wealth effects.

6. PROMOTING RACIAL INTEGRATION: THE ETHNIC INTEGRATION POLICY

Singapore hosts citizens from different racial and religious backgrounds. The HDB's objective has always been to integrate the various income and racial groups within the public housing program and to avoid the emergence of low-income or ethnic ghettos. This policy was a consequence of events in the 1960s, when there were episodes of ethnic violence between the Chinese and the Malays that resulted in several deaths and injuries. Racial harmony has since been a goal of the government (Ooi, Siddique, and Soh 1993). Beginning in the 1970s, the HDB allocated new flats in a manner that would give a "good distribution of races" to different new towns. However, by 1988, a trend of ethnic regrouping through the resale market was highlighted as a social problem which could lead, over time, to the re-emergence of ethnic enclaves.

In 1989, the government implemented an Ethnic Integration Policy under which racial limits were set for the HDB blocks and neighborhoods.[18] The Chinese, Malay, Indian/Others neighborhood limits were set at 84%, 22%, and 10%, respectively.[19] The block quotas were 3% above each neighborhood limit. For new flats, a particular ethnic group will not be able to buy a flat from the HDB if the quota for that group has been reached for the particular block or neighborhood (Centre for Liveable Cities and HDB 2013, chapter 5). For the resale market, when the set ethnic group limits for a particular block or neighborhood are reached, those wishing to sell their HDB flats in the particular block or neighborhood are constrained

[18] Dodge (2006) devotes a chapter to Singapore's Ethnic Integration Policy in his book on Thomas Schelling. Schelling's models on the neighborhood "tipping" phenomenon that would quickly lead to total segregation of different ethnic groups were influential in the Singapore government's adoption of policies to control the movement of population groups in the public housing sector.

[19] In March 2010, in response to changing demographics, the neighborhood limit for Indian/Others was raised to 12%.

to sell them to another household of the same ethnic group. The government had emphasized that "our multiracial policies must continue if we are to develop a more cohesive, better-integrated society. Singapore's racial harmony, long-term stability, and even viability as a nation depend on it" (quoted in Ooi, Siddique, and Soh 1993, 14).

The HDB for its housing estates has worked remarkably well in Singapore and has contributed to social integration of the different races. In a May 2015 interview, Deputy Prime Minister Tharman Shanmugaratnam described this policy as "the most intrusive policy in Singapore" which "has turned out to the most important."[20]

However, the restriction in selling to the same ethnic group has resulted in some market-distortionary effects. In a careful study, Wong (2013) matched more than 500,000 names in the phone book to ethnicities to calculate ethnic proportions at the apartment block level. She then investigated transaction price and time-on-market duration differences for constrained and unconstrained blocks using 35,744 transactions between April 2005 and August 2006. On average, Wong (2013) found the transaction prices for Chinese constrained units to be 5% higher than transactions in comparable unconstrained blocks. Conversely, the prices for Malay and Indian constrained units were 3% lower.[21] She also estimated longer time-on-market durations of between 1 and 1.4 months for constrained sellers.

In March 2010, in response to the increase in the number of SPRs living in public housing estates, the HDB introduced a new SPR quota for non-Malaysian SPR families buying flats to facilitate better integration and to prevent new SPR enclaves from forming in public housing estates. The SPR quota is set at 5% and 8% at the neighborhood and block levels, respectively. Malaysian SPR buyers are not subject to the SPR quota as they are considered to have close cultural and historical similarities with Singaporeans.[22]

7. LAND LEASE SYSTEM AND THE LEASE BUYBACK SCHEME

Land Lease System

With about 90% of the land owned by the state, all HDB flats and most high-rise private condominiums are sold on a 99-year leasehold basis. The limited number of freehold properties command a premium over comparable leasehold properties as the value of leasehold properties at the termination of the lease is expected to fall to zero. The Singapore Land Authority provides a Leasehold Table which expresses the value of the residual tenure as a percentage of freehold value of land.[23]

Capozza and Sick (1991) have shown that leasehold landowners will redevelop earlier and at a lower intensity as compared with freehold owners, because the value of the developed

[20] "An Investigative Interview: Singapore 50 Years after Independence", 45th St Gallen Symposium, May 2015. See https://www.youtube.com/watch?v=hpwPciW74b8.

[21] Using an average price of units sold (S$234,000), Wong (2013) estimated these price differences to represent 5 times the median monthly income of the Chinese (S$2,335) and 3 times the median monthly income of the Malays (S$1,790) and the Indians (S$2,167).

[22] A non-Malaysian SPR household buyer must satisfy both the ethnic proportion and SPR quota to qualify to buy a resale HDB flat. The ethnic proportions and SPR quota are updated on the first day of every month and buyers/sellers can check the status of a unit online. See HDB web page at http://www.hdb.gov.sg/fi10/fi10296p.nsf/PressReleases/C515273FA068DD58482576DD00169155?OpenDocument.

[23] The Leasehold Table is used together with the Table of Development Charge for the computation of differential premiums payable when state title restrictions involving change of use and/or increase in intensity of use for leasehold land are lifted. See http://www.sla.gov.sg/Portals/0/Services/Land%20Lease%20Conditions/DP%20policy%20wef%2031%20Jul%202000.pdf

land at the termination of the lease is lower (or zero) as compared with the freehold case. This may represent an unintended consequence of having a housing and land market based on a lease structure. However, in the case of Singapore, these lower development intensity effects do not exist for land leases sold by the government because the government defines the land use, development intensity (plot ratio), and time-to-project completion under the Government Land Sales Programme. The detailed planning regulations basically strip away development options and reduce the uncertainty linked to the optimal time to exercise the real option of land development, thus accelerating investments (Cunningham 2007).

Another effect of leaseholds is that investment in maintenance for properties may be lower as compared with freehold properties. One may hypothesize that a similar argument may apply to HDB flats and private leasehold properties: because capital investments are lost when the lease expires, there is a disincentive for households to improve—or even hold constant—the flat quality. This disincentive may be responsible for the more rapid deterioration of the housing stock built on leased land as compared with freehold land.

In the case of Singapore, as a consequence of rapid economic growth and increases in population, economic obsolescence has preceded physical obsolescence for many buildings several decades before the typical 99-year lease runs out. Moreover, the typical housing-filtering process does not operate in Singapore because private housing does not filter to the middle-income segment of the market which is served by the HDB. In the case of privately owned properties, en bloc sales have facilitated redevelopment (Phang 2005).

Until 1991, Singapore operated with two plans for land-use purposes: the Master Plan was statutory and revised every 5 years; the Concept Plan was approved but not released to the public (Dale 1999, 85). The 1990s was another period with regard to important policy decisions for physical land-use planning. The government adopted a more open approach to planning. A major review of the Concept Plan was completed and the revised plan was made public in 1991.

The broad strategies of the 1991 Concept Plan were translated into a forward-looking Master Plan which has since been reviewed every 5 years.[24] The development guide plans for 55 planning areas contain the planning vision for its area, and sets out the control parameters such as land use, plot ratio, building height, provision of facilities, and amenities. Zoning and plot-ratio prescriptions contained within each development guide plan could deviate from the current land use with the objective of guiding the physical development in a specific planning area and “unlocking” the redevelopment potential of privately held land parcels.

To take advantage of the increase in development potential arising from the above changes in planning regulations, the developer would have to pay a differential premium based on the development charge (which had been introduced in 1965.[25] The Development Charge Table is updated by the Ministry of National Development in consultation with the Chief Valuer every 6 months (on 1 September and 1 March). The current prescribed average land rates are based on 70% of estimated land values by 8 land-use groups in 118 geographical sectors. In the case of leasehold land, developers are able to apply to top-up the land lease.[26]

However, many of these sites were held under residential strata title, which, prior to 1999, required that all the strata-titled property owners must unanimously agree to a sale. Many sales had to be aborted when a minority (in some cases, just one) of the owners refused to

[24] The Master Plan can be accessed at https://www.ura.gov.sg/uol/master-plan.aspx?p1=View-Master-Plan

[25] The Development Charge Table can be accessed at https://www.ura.gov.sg/uol/DC/apply-check-pay/apply-permission/DC-rates-archive.aspx

[26] See the Singapore Land Authority web page for the document on “The Differential Premium System” at http://www.sla.gov.sg/Portals/0/Services/Land%20Lease%20Conditions/DP%20policy%20wef%2031%20Jul%202000.pdf The topping-up of a lease tenure allows for a better Pareto optimum to be reached, as explained by Dale-Johnson (2001). The computation of the premium payable for the topping-up of lease tenure is assessed by the Chief Valuer on a case-by-case basis.

participate in the sale. Frustrated owners appealed to the government and, in 1999, the Land Titles (Strata) Act was amended to facilitate collective sales. The concerns of the majority were accepted by Parliament as legitimate and the actions of dissenting minority owners were described as "impeding efforts to maximize the development potential of en-bloc-sale sites and preventing the rejuvenation of older estates".[27]

In 1999, Parliament passed amendments to the Land Titles (Strata) Act that changed the 100% requirement for en bloc sale to a majority vote. The new provisions applied to only strata developments with more than 10 units. Where a development is less than 10 years old, there must be 90% agreement; for developments 10 years old or more, at least 80% agreement suffices for collective sales (both figures based on share values). The Strata Titles Board reviews applications for collective sales. The Land Titles (Strata Titles Boards) Regulations 1999 sets out the procedure for applications to the board, the proceedings of the board, and other matters such as appeals to the board and the High Court. A study by Christudason (2010) shows that between 1999 and 2008, there were a total of 312 collective sales that resulted in 13,755 old private housing units being displaced by 35,888 new housing units.

In the HDB sector, a spatial age gradient for HDB estates had become evident by the late 1980s. As the city expanded outward from the central business district (CBD), older estates had been built closer to the CBD and new towns were built at distances further away. Also evident was the trend of younger families moving out of older HDB towns because they were allocated new flats in outlying new towns. In 1989, HDB upgrading programs to improve existing HDB estates were announced by the government. The upgrading programs vary in nature and scale and are substantially subsidized by the government (Centre for Liveable Cities 2013, 20). The government also launched the Selective En bloc Redevelopment Scheme (SERS) in 1995 under which older low-density blocks of HDB flats were acquired and demolished. From 1995 to 2014, 79 sites were redeveloped through the SERS. Affected households are resettled in new and higher-density housing with fresh 99-year leases within the same neighborhood.[28]

Housing Wealth and Retirement Financing: The Lease Buyback Scheme

In 2015, data from household sector balance sheets show housing assets owned by the resident household sector to be about 2.1 times GDP.[29] The ratio of the net housing wealth to GDP was 1.5, while the ratio of the total net wealth to GDP was 3.8. The typical household in Singapore thus has a large fraction of its wealth invested in housing. However, housing wealth is illiquid and the study by McCarthy, Mitchell, and Piggott (2002) shows that the average worker in Singapore is often asset-rich but cash-poor upon retirement, as 75% of the retirement wealth is locked into housing assets. A report by the government-appointed Economic Review Committee (2002) came to a very similar conclusion.

With a high homeownership rate and aging homeowners, there was a need for instruments through which households could monetize their housing asset (Phang 2015b). A local insurance firm, NTUC Income, was the first to introduce a reverse mortgage scheme for private housing in 1997. In 2006, a Singaporean bank, OCBC Bank launched a reverse mortgage scheme for owners of private property, and NTUC Income extended reverse mortgages to HDB homeowners. However, both institutions have since discontinued the schemes citing a lack of demand. Koh (2015) highlighted the lease system as the primary challenge for designing a viable reverse mortgage instrument. The instruments on offer

[27] See Report of the Select Committee on the Land Titles (Strata) (Amendment) Bill, presented to Parliament on 19 April 1999. See Christudason (2010) for details of the legislation and the effects on private housing supply.

[28] See the HDB web page on the SERS at http://www.hdb.gov.sg/fi10/fi10329p.nsf/w/eSERSOverview?OpenDocument and the list of SERS sites (79 sites) from 1995 to 2014 at http://www.teoalida.com/singapore/serslist/

[29] See Department of Statistics web page at http://www.singstat.gov.sg/statistics/browse-by-theme/household-sector-balance-sheet

stipulated that the property had to have at least 70 years of lease remaining to be eligible, with the condition that, at the end of the reverse mortgage, there had to be at least 50 years of lease remaining.

To address the problem, the HDB introduced the Lease Buyback Scheme (LBS) in 2009 for low-income elderly (aged 63 or older) living in three-room or smaller flats. In 2014, the Prime Minister announced the enhancement of the LBS to four-room flats (H.L. Lee 2014). To illustrate, an HDB four-room flat, bought for approximately S$24,300 in 1980, lived in for 34 years, is valued at S$450,000 in 2015. It can be retained for the next 30 years, and have the 35 years of its end-lease purchased by the HDB in 2015 for S$190,000 to help finance the retirement of the now elderly homeowners. This is the provision of a retirement safety net based on ownership of an HDB flat, with the HDB taking on both interest-rate risk and housing price-depreciation risk over a long period of 30 years (Koh 2015). The housing price-depreciation risk is likely to be exacerbated by the homeowner's disincentive to invest in flat renovation and maintenance as the property approaches the end of the retained lease period. Although this disincentive might be negligible for low-income households which may have less financial ability to meet these costs, it is likely to be significant for middle-income households. The impact of the disincentive would have increased substantially with the extension of the LBS to four-room flats.[30]

Other monetization options that have been provided or made possible by the HDB for eligible elderly households include the following:

- A Silver Housing Bonus incentive (of up to S$20,000) to sell their current flat and buy a smaller flat (right-sizing)
- A related measure, the two-room Flexi Scheme, was introduced in 2015 which allows households, whose heads are over the age of 55, to buy two-room HDB flats on shorter leases than 99 years. The shorter lease means the price of the home is significantly reduced. The household can choose the lease duration to purchase, with the minimum duration dependent on the age of the household members.[31]
- Subletting a room or putting their flat up for rental for a steady flow of income[32]

8. CONCLUSION: LESSONS LEARNED FOR OTHER ASIAN COUNTRIES

Singapore's housing system has evolved over time as a symbiotic relationship between the HDB and the CPF, with generous support from the Ministry of Finance. The HDB–CPF system has contributed to high savings and homeownership rates, and very effectively mobilized savings for housing and growth of housing loans. The provision of affordable housing has contributed to social stability, economic growth, and the development of communities. The large HDB sector with its regulations on ownership and resale contributes to reducing speculative demand for housing. The CPF rate adjustments, with their impacts on inflation and wage costs, have been useful as a macroeconomic instrument for a very open economy. It is not surprising that the HDB hosts numerous visits each year from foreign delegations wishing to learn from Singapore's housing experience.

[30] The Enhanced LBS took effect in April 2015, and the HDB received 450 applications in April and May, of which 214 were owners of four-room flats. A total of 965 households took up the LBS between 2009 and March 2015 (*The Straits Times*, 12 June 2015).

[31] Shorter lease periods range from 15 to 45 years. Under the scheme, buyers must choose a lease period that will last them and their spouse until they are at least 95 years old. The two-room Flexi Scheme merges and replaces the two-room flat scheme and Studio Apartment (30-year lease) scheme. For details, see http://www.hdb.gov.sg/fi10/fi10321p.nsf/w/BuyingNewFlatEligibility2roomFlexiflats?OpenDocument.

[32] See H.L. Lee (2014) and HDB web page at http://www.hdb.gov.sg/fi10/fi10325p.nsf/w/MaxFinancesOverview?OpenDocument

Lessons that can be learned from the Singapore model of housing include the following:

(i) **Housing's contribution to economic development:** The housing and housing finance sectors can contribute positively and significantly to the economic and financial development of a country. Singapore's macroeconomic environment has been one of high savings and income growth, low unemployment, inflation and interest rates, and government budgetary surpluses, as well as exchange rate appreciation. Housing policy has also been used to promote racial integration, which, in turn, has contributed to social stability and economic growth.

(ii) **Homeownership affordability:** Establishing an integrated land, housing supply, and mortgage finance framework can deliver dramatic increases in housing supply and improvements in homeownership affordability.

(iii) **Urban governments:** In urban areas, governments can greatly facilitate the speed of urban development and redevelopment through appropriate legislation, regulations, and institutions that enable increases in housing supply for a growing population.

(iv) **Private sector:** Notwithstanding the importance of the government's role in urban development and mobilization of domestic savings, financial institutions and private developers play an equally important role in the real estate sector. As markets mature, governments need to review policies periodically to assess their continued relevance.

(v) **Enabling markets:** Markets are very important and creating and/or enabling markets to work more efficiently and allowing for private initiatives are very important aspects of housing policy. A symbiotic partnership between the government and private sector has helped Singapore to avoid the worst outcomes of the extremes of central planning and unplanned urbanization.

(vi) **Market transparency:** Governments can play an important role in improving market transparency through provision of timely real estate market information.

(vii) **Housing subsidies:** The short- and long-term implications of housing subsidies, explicit or implicit, supply- or demand-side, within the entire system, need to be fully understood and periodically reviewed for sustainability and effective housing market intervention.

(viii) **Macroprudential regulation:** The government has deployed multiple mitigations in parallel to reduce the risk of housing becoming a source of financial sector instability. Housing markets are carefully segmented and carefully regulated. The main source of capital for housing finance comes from domestic savings. That these are in the form of compulsory savings lowers default risks.

(ix) **Monetizing housing assets:** The CPF system has been used to mobilize pension fund savings for housing mortgage payments by young households. With an aging population, it is also necessary to design instruments for elderly homeowners to monetize housing assets for retirement financing.

(x) **Governance:** The need for strong legislation and sound governance of housing agencies and financial institutions cannot be overemphasized.

The system is not, however, without its critics and risks. The mandatory nature of the CPF, together with the dominance of the HDB, could have resulted in overallocation of resources to housing. The CPF collects from members more than what is required for housing. This could have crowded out consumption (Phang 2004) and, as CPF savings are illiquid, it has been cited as a reason behind a weak domestic start-up sector (Bhaskaran 2003). The large allocation of savings for housing and the risk of housing price declines pose risks for retirement financing (McCarthy, Mitchell, and Piggott 2002; Asher 2002; Phang 2007; Low 2014). The phrase "asset rich and cash poor" neatly captures the basic problem, and policies in the past decade to help aging households monetize their housing equity, provide health subsidies for the elderly, and workfare for lower-income workers represent steps toward a more comprehensive social security system.

The affordable rental segment of Singapore's housing market has also been marginalized by the deliberate and long-standing policy bias toward homeownership. The small proportion of HDB social rental housing comprises mostly one- and two-room flats that house low-income families.[33] There is generally a shortage of affordable market rental units in the HDB sector as evident by the higher rental yield for HDB flats as compared with private housing. With the increase in the foreign population in Singapore, there is a need to expand the affordable rental sector. One suggestion is to establish housing real estate investment trusts to help cater to the rental housing needs of an increasing number of SPRs and foreigners in Singapore as well as Singaporean households in transition (Phang 2013b; Phang et al. 2014).

While the Singapore model has attracted much interest from other Asian countries (Micklethwait and Wooldridge 2014), the transferability of Singapore's experience to other countries needs to be juxtaposed with the local political and social context. In the housing policy sphere, a housing provident fund is relatively simple to set up if designed as a savings and payments institution. The more complex institution to replicate is the HDB, in particular its resettlement, town planning, and estate management capabilities, as well as attention to developing good-quality affordable housing on a large scale. Moreover, the tactics on which Singapore relies—compulsory savings, state land ownership, and state provision of housing—can easily spawn widespread inefficiency and corruption in other sociopolitical contexts.

[33] The government recognizes the need to support low-income households renting one- and two-room HDB flats. The reasons for their financial hardship are often social in nature, and community support workers provide support to these households. In the National Day address in August 2015, the Prime Minister introduced a Fresh Start Housing Scheme meant to help households that have sold their homes and subsequently cannot afford a new home.

REFERENCES

Asher, M.G. 2002. The Role of the Global Economy in Financing Old Age: The Case of Singapore. *ADBI Research Paper Series* 37. Tokyo: Asian Development Bank Institute.

Bhaskaran, M. 2003. *Re-inventing the Asian Model: The Case of Singapore*. Singapore: Eastern Universities Press for the Institute of Policy Studies.

Capozza, D.R., and G. Sick. 1991. Valuing Long-Term Leases: The Option to Redevelop. *Journal of Real Estate Finance and Economics* 4: 209–223.

Centre for Liveable Cities. 2014. *Land Acquisition and Resettlement: Securing Resources for Development*. Singapore: Centre for Liveable Cities.

Centre for Liveable Cities and Housing & Development Board. 2013. *Housing: Turning Squatters into Stakeholders*. Singapore: Cengage Learning.

Choe, A.F.C. 1975. Urban Renewal. In *Public Housing in Singapore: A Multi-disciplinary Study*, edited by S.H.K. Yeh. Singapore: Singapore University Press for Housing & Development Board.

Chua, B.H. 1997. *Political Legitimacy and Housing: Stakeholding in Singapore*. London and New York: Routledge.

Christudason, A. 2010. Legal Framework for Collective Sale of Real Estate in Singapore: Pot of Gold for Investors? *Journal of Property Investment and Finance* 28(2): 109–122.

Cunningham, C.R. 2007. Growth Controls, Real Options, and Land Development. *Review of Economics and Statistics* 89(2): 343–358.

Dale, O.J. 1999. *Urban Planning in Singapore: The Transformation of a City.* Malaysia: Oxford University Press.

Dale-Johnson, D. 2001. Long-Term Ground Leases, the Redevelopment Option and Contract Incentives. *Real Estate Economics* 29: 451–484.

Demographia. 2016. *12th Annual Demographia International Housing Affordability Survey: 2016*. http://www.demographia.com/dhi.pdf (accessed Feb 2016).

Dodge, R. 2006. *The Strategist: The Life and Times of Thomas Schelling.* Singapore: Marshall Cavendish.

Fernandez, W. 2011*. Our Homes: 50 Years of Housing a Nation*. Singapore: Straits Times Press for Housing & Development Board.

Government of Singapore, Department of Statistics. 2015. *Key Household Income Trends, 2014*. Singapore.

Government of Singapore, Ministry of National Development. 2011a. Good Affordable Homes for All Singaporeans. News release. 15 August. http://app.mnd.gov.sg/Newsroom/NewsPage.aspx?ID=2862&category=Press+Release&year=2011&RA1&RA2&RA3 (last updated 16 Sep 2015).

———. 2011b. Reflections on Housing a Nation. http://www.mnd.gov.sg/reflections_housing/

Government of Singapore, Ministry of Trade and Industry, Economic Review Committee, Sub-committee on Taxation, CPF, Wages and Land. 2002. *Main Report: Refocusing the CPF System for Enhanced Security in Retirement and Economic Flexibility*. https://www.mti.gov.sg/ResearchRoom/Pages/ERC%20Reports.aspx (accessed Feb 2016).

Kim, K.H., and S.Y. Phang. 2013. Singapore's Housing Policies: 1960–2013. In *Frontiers in Development Policy: Innovative Development Case Studies*. Seoul: KDI School and World Bank Institute.

Koh, C.W. 2015. *Financial Sustainability of Monetising Housing Equity in a Leasehold Environment.* Senior Thesis. Singapore: School of Economics, Singapore Management University.

Latif, A.I. 2009. *Lim Kim San: A Builder of Singapore*. Singapore: Institute of Southeast Asian Studies.

Lee, D., S.Y. Phang, K.F. Phoon, and K. Wee. 2013. Evaluating the Effectiveness of Cooling Measures on Property Prices: An Exploration of Alternative Econometric Techniques. Paper presented at the 2013 Asian Meeting of the Econometric Society, Singapore, 2–4 August.

Lee, H.L. 2014. National Day Rally Speech. 17 August. http://www.pmo.gov.sg/mediacentre/prime-minister-lee-hsien-loongs-national-day-rally-2014-speech-english (accessed 7 February 2016)

———. 2015. National Day Rally Speech. 23 August. http://www.pmo.gov.sg/mediacentre/prime-minister-lee-hsien-loong-national-day-rally-2015-speech-english (accessed 7 February 2016)

Lee, K.Y. 2000. *From Third World to First: The Singapore Story 1965–2000.* Singapore: Singapore Press Holdings.

Low, D. 2014. Rethinking Singapore's Housing Policies. In *Hard Choices: Challenging the Singapore Consensus,* edited by D. Low and S.T. Vadaketh. Singapore: National University of Singapore Press.

Micklethwait, J., and A. Wooldridge. 2014. *The Fourth Revolution: The Global Race to Reinvent the State*. New York: Penguin Press.

McCarthy, D., O.S. Mitchell, and J. Piggott. 2002. Asset-rich and Cash-poor: Retirement Provision and Housing Policy in Singapore. *Journal of Pension Economics and Finance* 1: 197–222.

Ooi, G.L., S. Siddique, and K.C. Soh. 1993*. The Management of Ethnic Relations in Public Housing Estates.* Singapore: Times Academic Press.

Phang, S.Y. 1992. *Housing Markets and Urban Transportation: Economic Theory, Econometrics and Policy Analysis for Singapore.* Singapore: McGraw Hill.

———. 1996. Economic Development and the Distribution of Land Rents in Singapore: A Georgist Implementation. *American Journal of Economics and Sociology* 55: 489–501.

———. 2001. Housing Policy, Wealth Formation and the Singapore Economy. *Housing Studies* 16(4): 443–459.

———. 2003. The Social Compact in Singapore: The Changing Role of Housing. In *Singapore Perspectives 2003,* edited by M.T. Yap. Singapore: Institute of Policy Studies and Eastern Universities Press.

———. 2004. House Prices and Aggregate Consumption: Do They Move Together? Evidence from Singapore. *Journal of Housing Economics* 13(2): 101–119.

———. 2005. Government and Private Sector Roles in Inner City Redevelopment: The Case of Singapore. Paper presented at Seoul International Seminar on Real Estate 2005 organized by Korea Housing Association. December.

———. 2007. The Singapore Model of Housing and the Welfare State. In *Housing and the New Welfare State*, edited by R. Groves, A. Murie, and C. Watson. UK: Ashgate.

———. 2009. Affordable Homeownership Policy: Implications for Housing Markets. Paper presented at the European Real Estate Society Conference. Stockholm, June.

———. 2010. Affordable Homeownership Policy: Implications for Housing Markets. *International Journal of Housing Markets and Analysis* 3(1): 38–52.

———. 2012. Public Housing—Appreciating Assets? In *Singapore Perspectives 2012: Singapore Inclusive—Bridging Divides,* edited by S.H. Kang and C.H. Leong. Singapore: Institute of Policy Studies and World Scientific.

———. 2013a. *Housing Finance Systems: Market Failures and Government Failures*. UK: Palgrave Macmillan.

———. 2013b. Do Singaporeans Spend Too Much on Real Estate? Keynote presentation at Institute of Policy Studies, Lee Kuan Yew School of Public Policy, National University of Singapore. 10 May.

———. 2015a. Home Prices and Inequality: Singapore Versus Other Global Superstar Cities. *The Straits Times*, 3 April.

———. 2015b. Monetizing Housing for Retirement in Singapore. Asia Pathways: A blog of the Asian Development Bank Institute. http://www.asiapathways-adbi.org/2015/10/monetizing-housing-for-retirement-in-singapore/ (accessed 7 February 2016)

———. 2015c. Singapore's Housing Policies: Responding to the Challenges of Economic Transitions. *The Singapore Economic Review* 60(3): 1550036 (25 pages). Reprinted as S.Y. Phang. 2016. Singapore's Housing Policies: Responding to the Challenges of Economic Transitions. In *Singapore's Economic Development: Retrospection and Reflections*, edited by L.Y.C. Lim. Singapore: World Scientific.

Phang, S.Y., D. Lee, A. Cheong, K.F. Phoon, and K. Wee. 2014. Housing Policies in Singapore: Evaluation of Recent Proposals and Recommendations for Reform. *The Singapore Economic Review* 59(3): 1450025 (14 pages).

Phang, S.Y., and W.K. Wong. 1997. Government Policies and Private Housing Prices in Singapore. *Urban Studies* 34(11): 1819–1830.

Teh, C.W. 1975. Public Housing in Singapore: An Overview. In *Public Housing in Singapore: A Multi-disciplinary Study*, edited by S.H.K. Yeh. Singapore: Singapore University Press for Housing & Development Board.

Wong, M. 2013. Estimating Ethnic Preferences Using Ethnic Housing Quotas in Singapore. *Review of Economic Studies* 80(3): 1178–1214.

Wong, A., and S.H.K. Yeh, eds. 1985. *Housing a Nation: 25 Years of Public Housing in Singapore*. Singapore: Maruzen Asia for Housing & Development Board.

Yeh, S.H.K., ed. 1975. *Public Housing in Singapore: A Multi-disciplinary Study*. Singapore: Singapore University Press for Housing & Development Board.

Singapore government agency websites:

Housing & Development Board at www.hdb.gov.sg

Central Provident Fund at www.cpf.gov.sg

Urban Redevelopment Authority at www.ura.gov.sg

Singapore Land Authority at www.sla.gov.sg

Department of Statistics at www.singstat.gov.sg

Inland Revenue Authority at www.iras.gov.sg