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INVESTISSEMENT ET CONSTRUCTION RESIDENTIELLE DANS LE CONTEXTE DE LA  
CROISSANCE DE SINGAPOUR, 1965-90

Author(s): Roger J Sandilands

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# SAVINGS, INVESTMENT AND HOUSING IN SINGAPORE'S GROWTH, 1965-90<sup>1</sup>

Roger J Sandilands

National University of Singapore and University of Strathclyde

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## 1. Introduction

Since it became an independent republic in 1965 Singapore has achieved one of the world's most rapid rates of economic growth, with widespread sharing in the benefits by all income groups. Real per capita incomes in Singapore today are more than six times higher than in 1965, having grown on average by over 7 percent a year (table 1). Its population, around 1.9 millions in 1965, grew to over 3.0 millions in 1990 (of whom 10 percent are foreigners without permanent resident status); but annual growth of population has fallen from about 2.5 percent in the sixties to around 1.3 percent today.

Slower population and labour force growth have been accompanied by rapid real wage increases in all sectors. Not all industrialists and politicians welcome rising wages and one commonly hears complaints of "labour scarcity". Although this is really a natural and desirable corollary of economic development, worries about labour scarcity, together with some concern about the relatively lower birth rate of the better educated and prosperous (mainly Chinese<sup>2</sup>), has led to some reversal of policy on birth control. Fiscal incentives and publicity campaigns now encourage larger families, particularly for the rich and better educated. Many industrialists have also been calling for a relaxation of immigration controls to relieve labour scarcity, but policy-makers have been resisting this recently, except in respect of more highly qualified foreign workers (and also of maids who, it is hoped, will encourage better educated women to have more children without interrupting their careers).

Labour scarcity and the associated rise in market wage rates are partly the cause and partly the consequence of rising levels of labour productivity in the economy as a whole. Rising productivity raises demand for labour relative to supply, and this drives up the supply price. This poses few problems for sectors that have improved levels of capitalization, technology and organization. They are willing and able to pay higher wages as and when market conditions make this necessary.

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1 A version of this paper was presented at the First National Savings Congress (Primer Congreso Nacional del Ahorro), Cartagena, Colombia, 22-24 August 1991. I am indebted to Mukul Asher, Vincent Chua, Phang Sock Yong and Amina Tyabji for useful discussions and material.

2 According to preliminary results from the 1990 population census, there was a slight fall in the proportion of Chinese in the total, from 78.3 percent in 1980 to 77.7 percent in 1990, with Malays accounting for 14.1 percent and Indians 7.1 percent in 1990. "Others" account for 1.1 percent. There was a big increase in the foreign (non-permanent resident) population from 131,800 (5.5 percent) in 1980 to 312,700 in 1990 (10.4 percent).

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**Table 1**  
SINGAPORE: GDP AT CURRENT AND 1985 MARKET PRICES (S\$ millions)

Year	GDP (current market prices)	% change in GDP deflator	GDP (at 1985 market prices)	annual % change in real GDP
1965	2,956.2	2.1	6,626.8	6.6
1966	3,322.7	1.6	7,328.3	10.6
1967	3,748.5	0.0	8,283.1	13.0
1968	4,315.0	0.7	9,464.3	14.3
1969	5,019.9	2.6	10,730.0	13.4
1970	5,804.9	1.9	12,172.4	13.4
1971	6,840.5	4.6	13,698.8	12.5
1972	8,195.0	5.8	15,526.2	13.3
1973	10,256.9	12.5	17,273.6	11.3
1974	12,610.1	15.2	18,441.2	6.8
1975	13,443.0	2.5	19,171.4	4.0
1976	14,650.9	1.7	20,548.5	7.2
1977	16,039.0	1.5	22,143.3	7.8
1978	17,830.4	2.5	24,046.0	8.6
1979	20,523.0	5.3	26,284.7	9.3
1980	25,090.7	11.4	28,832.5	9.7
1981	29,339.4	6.7	31,603.1	9.6
1982	32,669.9	4.2	33,772.3	6.9
1983	36,732.8	3.9	36,537.2	8.2
1984	40,047.9	0.7	39,572.5	8.3
1985	38,923.5	-1.2	38,923.5	-1.6
1986	38,653.5	-2.5	39,641.4	1.8
1987	42,609.3	0.7	43,387.4	9.4
1988	49,694.2	4.9	48,221.6	11.1
1989	56,235.1	3.6	52,669.6	9.2
1990	62,711.3	3.0	57,016.2	8.3

Sources: Department of Statistics, *Yearbook of Statistics*, Singapore, 1990; *Economic and Social Statistics, 1960-82*, 1983; *Singapore National Accounts, 1987, 1988*; Ministry of Trade and Industry, *Economic Survey of Singapore*, 1990.

By contrast, in the more labour-intensive sector where productivity growth has failed to keep pace with rising wages, many enterprises have been driven out of business by competitors in lower wage countries. But workers displaced from these low-productivity sectors have, with little delay, almost invariably found alternative, better paying employment in the expanding sectors. Unemployment has, except for brief periods, been very low. It averaged less than 4 percent in both the 1970s and 1980s. Despite tight labour market conditions and rising wages, inflation has been very modest

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by world standards, averaging 6.9 percent a year in the 1970s and 2.8 percent in the 1980s.

Singapore is an exceptionally open economy, with very few tariff barriers. Its early development was based largely on its status as a major entrepot strategically situated at the crossroads of important trade routes. In 1965 the bulk of its foreign exchange earnings was from the handling of entrepot cargoes. As one of the world's largest ports this continues to be an important source of earnings but over the years the economy has become much more diversified. Initially this took the form mainly of manufacturing labour-intensive commodities for export, largely thanks to multinational corporations attracted by fiscal incentives, a strictly disciplined labour force, and excellent infrastructure.

Over the years manufacturing has shifted towards more capital-intensive activities, with intensified specialization in relatively narrowly defined stages of the production of final products. The import content of commodity exports thus remains very high on average (around two-thirds of the value of what are officially defined as "domestic" exports is actually re-export of imported components; see Lloyd and Sandilands, 1986, and Woon, 1991). Standard data on Singaporean trade thus give an exaggerated impression of the share of exports in Singapore's GDP, but also an understatement of the growth rate of true "net domestic" (i.e. made-in-Singapore) commodity exports. In 1965 these accounted for about 10 percent of GDP (see table 2). In 1990 they accounted for 35 percent. Net service sector exports, meanwhile, increased from 25 percent of GDP in 1965 to 33 percent in 1990, with financial and business services registering particularly strong growth in recent years as Singapore strives to establish itself as a major financial centre. Thus the combined value of commodity and service sector exports, on a value added basis, rose from about 35 percent of GDP in 1965 to 68 percent in 1990.

The corollary of this is that a smaller and smaller proportion of GDP is destined for local sale, and domestic demand is increasingly satisfied through imports. In fact, despite strong export growth Singapore ran a current account deficit on its balance of payments in every year between 1965-85 (with surpluses recorded thereafter). This, however, is partly a natural feature of a re-export economy in which goods are first imported and subsequently re-exported either as traditional entrepot goods or as the raw materials and components embodied in processed exports. Financing for this re-export flow comes largely from substantial net inflows of foreign funds deposited with banks in Singapore.

However, Singapore's own national savings rate (including reinvestment of profits on

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Table 2

## NET DOMESTIC COMMODITY EXPORTS (NDCX) AND NET SERVICES EXPORTS

Year	NDCX in 1985 market prices	NDCX/GDP percent	Net Services Exports (1985 prices)	Total Net Exports (1985 prices)	TNX/GNP percent
1965	600	9.6%	1,590	2,190	34.9%
1966	754	10.3%	1,808	2,562	35.0%
1967	773	9.3%	1,982	2,756	33.3%
1968	926	9.8%	2,215	3,141	33.2%
1969	1,126	10.5%	2,343	3,469	32.3%
1970	1,262	10.4%	2,632	3,894	32.0%
1971	1,518	11.1%	2,646	4,164	30.4%
1972	2,023	13.0%	4,854	6,877	44.3%
1973	2,673	15.5%	5,362	8,035	46.5%
1974	3,233	17.5%	6,103	9,336	50.6%
1975	2,771	14.5%	7,049	9,820	51.2%
1976	3,595	17.5%	7,258	10,853	52.8%
1977	4,267	19.3%	7,795	12,062	54.5%
1978	4,784	19.9%	8,405	13,188	54.8%
1979	6,283	23.9%	9,255	15,538	59.1%
1980	7,190	24.9%	11,350	18,540	64.3%
1981	7,372	23.3%	14,856	22,228	70.3%
1982	6,792	20.1%	16,281	23,073	68.3%
1983	7,404	20.3%	14,816	22,220	60.8%
1984	8,349	21.1%	12,114	20,462	51.7%
1985	8,143	20.9%	10,645	18,788	48.3%
1986	9,295	23.4%	10,528	19,823	50.0%
1987	12,209	28.1%	11,943	24,152	55.7%
1988	15,905	33.0%	13,685	29,590	61.4%
1989	17,060	32.4%	16,148	33,208	63.0%
1990	18,265	32.0%	18,755	37,019	64.9%

Source: Lloyd and Sandilands (1986), and Woon (1991).

foreign investments in Singapore) was also growing rapidly over this period to one of the highest in the world, rising from around 12 percent in 1965 to over 45 percent in 1990 (table 3). This, together with foreign financial inflows, made it possible to run current account deficits while also accumulating sizable foreign exchange reserves. By the end of 1990 these stood at around US\$ 27 billions.

**Table 3**  
**NATIONAL SAVINGS AND CAPITAL FORMATION, 1965-90**

Year	GDP at current prices	Gross capital formation	Net foreign borrowing [ = -(X-M)]	Gross national savings	GCF/GDP percent	GNS/GDP percent
1965	2,956	648	307	341	21.9%	11.5%
1966	3,323	729	189	540	21.9%	16.3%
1967	3,748	831	220	611	22.2%	16.3%
1968	4,315	1,075	210	865	24.9%	20.0%
1969	5,020	1,437	465	973	28.6%	19.4%
1970	5,805	2,246	1,115	1,130	38.7%	19.5%
1971	6,840	2,778	1,491	1,287	40.6%	18.8%
1972	8,195	3,393	1,392	2,000	41.4%	24.4%
1973	10,257	4,045	1,275	2,770	39.4%	27.0%
1974	12,610	5,710	2,490	3,220	45.3%	25.5%
1975	13,443	5,370	1,385	3,985	39.9%	29.6%
1976	14,651	5,982	1,402	4,580	40.8%	31.3%
1977	16,039	5,799	720	5,079	36.2%	31.7%
1978	17,830	6,957	1,029	5,928	39.0%	33.2%
1979	20,523	8,900	1,600	7,300	43.4%	35.6%
1980	25,091	11,628	3,346	8,282	46.3%	33.0%
1981	29,339	13,587	3,105	10,483	46.3%	35.7%
1982	32,670	15,659	2,774	12,885	47.9%	39.4%
1983	36,733	17,596	1,290	16,306	47.9%	44.4%
1984	40,048	19,417	821	18,596	48.5%	46.4%
1985	38,923	16,551	8	16,543	42.5%	42.5%
1986	38,653	14,895	(694)	15,589	38.5%	40.3%
1987	42,609	16,637	(472)	17,108	39.0%	40.2%
1988	49,694	18,135	(2,525)	20,660	36.5%	41.6%
1989	56,235	19,412	(4,968)	24,380	34.5%	43.4%
1990	62,711	24,246	(4,259)	28,504	38.7%	45.5%

Source: see Table 1

## 2. The Role of Urban Development in Singapore's Export-Oriented Growth Strategy

Singapore was already highly urbanised by third world standards when it attained independence from Britain in 1959 and from the Federation of Malaysia in 1965. As a city state Singapore has enjoyed tremendous advantages compared with most developing countries which are responsible for improving the living standards of populations that are more widely scattered and rural. These countries must therefore devote enormous resources to urban development and infrastructure in the face of unrelenting rural-

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urban migratory flows. Nevertheless, following self-government in 1959 Singapore accepted more readily than many less urbanised economies that a massive upgrading of its housing stock and infrastructure - good by the third world standards of that time - was required if it was to build a modern economy.

Hitherto, the bulk of housing and economic activity was concentrated in a central district around the busy Singapore River and docks, to handle the entrepot business upon which Singapore's prosperity had depended so heavily. But it was realised that this offered only limited scope for a rapid acceleration of economic development. A major manufacturing programme demanded that new industrial areas be developed, with extensive new factory and office building. But it also required large new housing estates and towns in which workers could live in less overcrowded conditions and also in locations closer to the new industries. Efforts were made to reserve 20-25 percent of the land in the new towns for industrial purposes; but the mix of jobs and residences has never been adequate and commuting has been heavy. This problem has, however, diminished over the years, particularly after the early 'eighties when the provision of housing near to the huge Jurong industrial estate, built on reclaimed swampland, was massively increased and the transportation system improved. The Economic Development Board (1961) and the Jurong Town Corporation (1968) were established to build advance factories on cleared sites (mainly in Jurong but also in other parts of the island), and to let these on attractive terms to foreign industrialists.

But the first and most important statutory body to be established, in February 1960, was the Housing Development Board (HDB), because massive investment in public housing was considered not a liability but a prerequisite to the overall development programme being planned. The board was set up under the Ministry of National Development with wide-ranging powers to acquire land and create self-contained new towns to house large numbers of people in high-rise apartment blocks with related public buildings and services. Until 1974, when an independent Urban Renewal Authority (URA) was established, the HDB was also responsible for slum clearance and redevelopment of prime sites in the central city area for corporate headquarters and for financial, commercial and administrative services.

The HDB replaced the old Singapore Improvement Trust (SIT) that had been administered by the British Colonial Government between 1927-59. During that period the SIT had built only 27,000 public housing units and these housed only 8.8 percent of Singapore's population. By contrast, between 1960-90 the HDB used its extensive powers

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and resources<sup>3</sup> to complete more than 650,000 units (plus a substantial volume of related facilities), and rehoused more than 85 percent of the population (table 4).

Table 4

RESIDENTIAL UNITS COMPLETED IN PUBLIC AND PRIVATE SECTORS, SINGAPORE, 1965-90

Year	Public sector [units]	Value [1985 \$ m]	Private sector [units]	Value [1985 \$ m]	Total units
1965	10,103	146	5,104	448	15,207
1966	12,672	201	2,885	440	15,557
1967	11,929	227	3,189	510	15,118
1968	13,895	256	2,273	554	16,168
1969	13,379	242	2,811	620	16,190
1970	12,939	282	1,711	668	14,650
1971	17,975	334	1,630	743	19,605
1972	22,938	582	1,650	772	24,588
1973	22,350	599	1,970	844	24,320
1974	28,346	645	2,797	790	31,143
1975	29,397	776	2,174	758	31,571
1976	32,336	937	2,035	769	34,371
1977	30,936	1135	1,304	717	32,240
1978	31,665	988	2,581	543	34,246
1979	27,174	904	2,780	512	29,954
1980	23,886	997	2,212	576	26,098
1981	12,464	1145	3,186	816	15,650
1982	19,512	1977	2,476	1426	21,988
1983	19,275	3232	4,919	2320	24,194
1984	78,288	3424	5,441	3126	83,729
1985	59,633	2644	7,388	2621	67,021
1986	38,519	2157	5,173	1564	43,692
1987	32,859	1677	2,295	1499	35,154
1988	29,149		1,705		30,854
1989	12,328		3,741		16,069
1990	10,562		3,608		14,170

Source: Economic and Social Statistics, Singapore, 1960-82, p. 144. Yearbook of Statistics, 1990, table 8.14-15  
Singapore National Accounts, 1987, tables 15, 17.

3 The Singapore government inherited large areas of public land from the British, but the 1966 Land Acquisition Act, amended in 1973, gave the government greatly increased powers of compulsory purchase with compensation reflecting, at best, preexisting use values only. These provisions have greatly reduced the HDB's financial requirements, and this is reflected in the low selling prices of HDB flats. It should be noted, however, that purchasers do not acquire private property rights in land, over which the HDB retains ownership and control, and which was reported to have a value of around 50 percent of the market price of housing (Tyabji and Lin, 1989, p.33). This is one reason why prices of HDB flats continue to diverge from those of similar units in the private sector, and the price differential is therefore only partly a reflection of explicit cash subsidies (which are a very small proportion of total HDB operations). Also, unlike private sector housing, HDB flats are only sold on 99 year leases, not freehold (Wong and Yeh, 1985, chapter 2).

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Before 1960 the rate of new housing units constructed, mainly in the private sector, was falling far short of new family formations, with the result that the already acute problem of overcrowding was steadily worsening. The HDB initiated its activities with a five-year crash programme, 1960-65, when completion of public housing units jumped from around 1,000 a year to an average of more than 10,000 a year (with a further 3,000 in the private sector), at a time when population was growing by about 50,000 persons a year. Population growth fell to less than 40,000 a year in the late 1960s, slowing further in the 1970s before climbing again to around 50,000 a year in the 1980s. Yet the public housing programme accelerated to over 13,000 units a year between 1965-70, rising further to an average of nearly 23,000 a year between 1971-75, 27,500 a year between 1976-80, and over 40,000 a year between 1981-85, after which there was some decline, with greater emphasis on renovation and remodelling work.

The private sector continued to complete about 2,000 to 3,000 housing units a year between 1965-80 (table 4), rising to an average of nearly 5,000 a year during the 1980s, generally with a significantly higher average floor area and value than the typical HDB unit<sup>4</sup>. Thus, during this period the growth of the overall housing stock far outpaced the growth of population, permitting a considerable amelioration of the overcrowding problem and progressive improvement in the quality of the stock.

The initial emphasis by the HDB was on building small, rather basic apartments in high-rise blocks for rent to low-income families which, despite the low building costs, involved a heavy subsidy element. Rents were based on the premise that a family should not have to devote more than 20 percent of its budget to housing. But rich tenants paid the same rents as poor. Such a policy was clearly not feasible on a large scale and the HDB established eligibility rules in allocating housing for rent that have been progressively tightened over the years. Beginning in 1964 after the acutest housing needs had been met, the HDB has vigorously encouraged people to buy rather than rent. While the eligibility criteria for rental units were tightened, so the eligibility rules for the sale of apartments were progressively relaxed. In this way there was always adequate real demand to match the expanding supply.

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4 In 1984, for example, when public sector housing units completed was at its peak of 78,288, the average floor area was 127 square metres, while in the private sector the average floor area of the 5,441 units completed was 231 square metres. Derived from *Yearbook of Statistics*, 1989, pp. 156-58.

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The thinking behind the "Home Ownership for the People" programme has been that ownership gives Singaporeans a personal stake in the new nation and helps to build a sense of nationhood. It may also be seen as an effective way to increase the incentive to save (or, in Singapore's case, as discussed below, to increase the willingness to accept a very high rate of *compulsory* saving); and it reduces the degree of state subsidy that extensive application of a low rent policy would imply.

But the ownership programme experienced a slow start, due firstly to the relatively small number of units offered for sale in the face of continued heavy demand for rental units; secondly because people had difficulty in raising the required 20 percent cash down-payment; and thirdly because funds for mortgage loans were relatively scarce.

### 3. The Role of the Central Provident Fund in the Financing of Public Housing

A tremendous boost to the home ownership scheme came in 1968 when applicants were permitted to utilise their accumulated pension fund contributions for the downpayment and monthly mortgage repayments on their HDB flats<sup>5</sup>. The Central Provident Fund (CPF) pension scheme was started in 1955 with employers and employees each contributing 5 percent of wages to the fund. By 1960 net contributions plus interest amounted to around S\$30 millions, almost all of which was invested in government securities. This aided the financing of development programmes including those of the HDB. Total expenditure on new housing in that year came to S\$63 millions, or 2.9 percent of GDP at current prices<sup>6</sup>.

The rapid expansion of incomes and employment after 1960 boosted CPF savings but it was not until the CPF contribution rates were raised, in a series of steps beginning

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5 Prior to 1970 the mortgage loan period was 5, 10 or 15 years. The maximum period was extended to 20 years in 1970 and to 25 years in 1986. The interest rate charged was fixed at 6.25 percent until 1986, when it was set at 0.1 percentage points above the CPF savings rate. See Phang (1991, p. 78).

6 Table 5 shows that the value-added contribution of the construction sector as a whole to GDP in 1960 at current prices was 3.4 percent. About 55-60 percent of this was residential construction, or about 1.9 percent of GDP. There was a marked rise in the relative prices of construction between 1970-74 (perhaps partly reflecting improved quality of materials or type of building), so that in terms of constant 1985 prices its contribution to GDP was 5.3 percent in 1960 (and 3.0 percent for residential construction). In terms of expenditures, the relevant figures were 5.1 and 2.9 percent of GDP in current prices, and 7.3 and 4.4 percent in constant 1985 prices. See *Singapore National Accounts 1987*, Tables 1 and 13.

**Table 5**  
GDP AND EXPENDITURE ON CONSTRUCTION, 1985 PRICES.

Year	GDP in 1985 market prices	GDP of constrn sector	percent of GDP	Expenditure on constrn	percent of GDP	Expenditure on residentl constrn	percent of GDP
1965	6,627	638	9.6%	1,150	17.4%	649	9.8%
1966	7,328	630	8.6%	1,118	15.3%	690	9.4%
1967	8,283	709	8.6%	1,283	15.5%	794	9.6%
1968	9,464	842	8.9%	1,516	16.0%	872	9.2%
1969	10,730	947	8.8%	1,719	16.0%	935	8.7%
1970	12,172	1,153	9.5%	2,119	17.4%	1,026	8.4%
1971	13,699	1,320	9.6%	2,469	18.0%	1,161	8.5%
1972	15,526	1,542	9.9%	2,871	18.5%	1,421	9.2%
1973	17,274	1,405	8.1%	2,662	15.4%	1,519	8.8%
1974	18,441	1,481	8.0%	2,708	14.7%	1,500	8.1%
1975	19,171	1,721	9.0%	3,084	16.1%	1,584	8.3%
1976	20,549	1,913	9.3%	3,389	16.5%	1,744	8.5%
1977	22,143	1,875	8.5%	3,419	15.4%	1,866	8.4%
1978	24,046	1,731	7.2%	3,455	14.4%	1,531	6.4%
1979	26,285	1,853	7.0%	3,828	14.6%	1,417	5.4%
1980	28,833	2,056	7.1%	4,601	16.0%	1,573	5.5%
1981	31,603	2,418	7.7%	5,815	18.4%	1,961	6.2%
1982	33,772	3,299	9.8%	8,106	24.0%	3,403	10.1%
1983	36,537	4,267	11.7%	10,647	29.1%	5,551	15.2%
1984	39,573	4,927	12.5%	11,781	29.8%	6,550	16.6%
1985	38,924	4,168	10.7%	10,007	25.7%	5,265	13.5%
1986	39,641	3,234	8.2%	8,232	20.8%	3,723	9.4%
1987	43,387	2,917	6.7%	7,277	16.8%	3,135	7.2%
1988	48,222	2,788	5.8%	6,661	13.8%	3,186	6.6%
1989	52,670	2,831	5.4%	6,943	13.2%	3,038	5.8%
1990	57,016	3,035	5.3%	7,335	12.9%	3,071	5.4%

Source: as in Table 1

in 1968, that the increase in CPF savings began to outpace the HDB building programme. By 1970, when CPF rates for employers and employees were each raised to 8 percent, current CPF savings climbed to \$168 millions. These funds are indirectly invested in the government's Development Fund, which in turn makes long-term loans to the HDB for capital spending and for the HDB's own mortgage lending programme. In 1970 CPF funds exceeded that year's total spending (\$136 millions) on all public sector building projects, including factories, offices, schools and hospitals as well as housing. The HDB accounted for \$96 millions of these capital expenditures.

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Subsequently the CPF rates were progressively raised to a remarkable peak in 1984 of 25 percent of wages by both employers and employees (i.e. 50 percent total), subject to a maximum monthly contribution (tax deductible) of S\$3,000 (around US\$1,500). Currently (November 1991) the combined rate stands at 40 percent (17.5 percent for employers, 22.5 percent for employees), with a monthly ceiling of S\$2,575. CPF revenues were also boosted by the rapid expansion of the labour force as Singapore (i) achieved virtually full employment by the early 1970s and for most of the period thereafter<sup>7</sup>, and (ii) increased the female participation rate from less than 30 percent in 1970 to over 50 percent in 1990 (though the male participation rate fell from 84 percent to 79 percent over the same period).

In view of the enormous expansion in CPF savings brought about by these changes, the high CPF contribution rates have frequently been criticised as excessive<sup>8</sup>, particularly, it is said, in light of the fiscal conservatism of the Singapore government as measured (i) by consistently very large surpluses of fiscal revenues over current ("consumption") expenditures by the public sector, and (ii) by the fact that the overall budget (including capital expenditures) usually shows a small surplus also. Thus it is said that large CPF contributions are unnecessary and deflationary.

However, the public sector budget surpluses are tiny compared with the growth of foreign reserves. The government does not regard these reserves as excessive, and recently introduced changes to the Constitution designed specifically to preserve their size in the face of real or imagined threats to national security. While Singapore's external debt is negligible, its domestic debt has, naturally, risen almost *pari passu* with the accumulation of foreign reserves<sup>9</sup>. So CPF savings are indeed needed to ensure (i) that reserves can be built up without inflationary consequences, and (ii) that at the same time long-

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<sup>7</sup> The unemployment rate in 1960 was estimated at 13.5 percent. This had fallen to 6 percent by 1970 and to less than 4 percent for most years after 1974. With full employment immigration controls were relaxed in 1972 to permit more guest workers to be employed, especially in manufacturing and construction.

<sup>8</sup> See, for example, CPF Study Group (1986); and Lim (1988, pp. 35-7 and 234-5).

<sup>9</sup> In 1980 the domestic debt of the government stood at S\$14.7 billions while foreign reserves stood at S\$13.8 billions. By 1989 the former had risen to S\$46.2 billions and the latter to S\$38.6 billions. Most of the domestic debt is held by the CPF Board. In 1980 outstanding CPF balances due to members stood at S\$9.6 billions, in 1989 at S\$36.1 billions. More than 90 percent of these liabilities are invested in government securities, the rest placed mainly as advance deposits with the Monetary Authority of Singapore for subscription to future government bond issues (Phang, 1991, p.76). These are substantial sums but still inadequate to cover fully the accumulation of foreign reserves.

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term public development programmes, notably housing and infrastructure, can be financed in a non-inflationary manner and without recourse to heavy taxation.

Thus the CPF has performed two key roles in Singapore's massive housing and urban redevelopment programmes, one direct and the other indirect.

The *indirect* role lies in the compulsory capture of personal savings which are indirectly channeled to the HDB, the Urban Renewal Authority (URA), the Jurong Town Corporation (JTC), and other statutory boards through the government's Development Fund. The HDB gets the lion's share of these funds, lent long term at rates of interest below market rates. These were fixed at 6 percent from 1968 until 1986 when the rate was lowered; but this rate has normally exceeded the rate of inflation, and the HDB charges its mortgagors a rate slightly in excess of this (6.25 percent between 1968-86). CPF members have also normally been paid around 6 percent interest, tax free; so the ultimate incidence of any implicit subsidy to the HDB on account of cheap loans has been borne by CPF members. In addition, the HDB often receives a direct government subsidy to cover any cash deficit on its annual operating budget. As noted above, the HDB has also acquired land very cheaply<sup>10</sup> (The state now owns 75 percent of all land in Singapore, mainly through the HDB).

The *direct* role of the CPF in Singapore's urbanization programmes lies in the use of CPF balances by members to buy their own homes. In 1970 \$23 millions was withdrawn from the CPF to finance down-payments and monthly servicing charges (see table 6). This was about a quarter of the HDB's capital expenditure in that year, and reduced the amount it had to borrow from the Development Fund. By 1984/85 when the HDB was budgeting for its largest ever capital expenditures of \$3.9 billions, around \$2.6 billions was being withdrawn from the CPF for approved housing, mostly HDB apartments<sup>11</sup>.

Table 6 shows the annual flow of CPF contributions and withdrawals, 1965-90. Gross contributions *plus* accrued interest *less* withdrawals for purposes other than housing

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10 In fiscal 1985/6 the HDB introduced a new accounting system in which the difference between the selling price of flats and an estimate of their market cost is recorded as a notional government subsidy. This makes it appear that buyers of HDB flats are getting a subsidy of a third to a half of the purchase price; but for reasons given in footnote 3 this may be an exaggeration.

11 In 1981 members were permitted to use their CPF balances to purchase private as well as public sector housing, so thereafter not all of the funds withdrawn for housing went to the HDB, though around 65 percent do still. (*Yearbook of Statistics, 1989*, table 12.16.) In 1989, as part of a major upgrading programme for public housing estates, CPF savings could be used to repay renovation loans offered by the HDB.

**Table 6**  
CENTRAL PROVIDENT FUND, 1965-90 FLOWS.

Year	CPF saving [gross contribns]	Net CPF accruals [incl. interest]	CPF withdrawn for housing	CPF accruals plus w/d for housing	Gross CPF savings as percent of GNS
1965	47	53		53	13.8%
1966	52	57		57	9.6%
1967	56	61		61	9.2%
1968	68	62	6	69	7.9%
1969	107	93	22	114	11.0%
1970	156	145	23	168	13.8%
1971	224	210	23	234	17.4%
1972	331	328	25	353	16.6%
1973	475	455	51	505	17.1%
1974	687	643	93	736	21.3%
1975	887	821	135	956	22.3%
1976	1,008	831	275	1,106	22.0%
1977	1,115	888	384	1,271	22.0%
1978	1,352	1,027	488	1,516	22.8%
1979	1,753	1,534	439	1,973	24.0%
1980	2,296	2,036	521	2,557	27.7%
1981	3,007	2,599	691	3,290	28.7%
1982	3,901	3,506	796	4,302	30.3%
1983	4,491	3,849	1,122	4,972	27.5%
1984	5,385	3,166	2,693	5,859	29.0%
1985	5,993	4,159	2,566	6,725	36.2%
1986	4,778	1,512	2,647	4,159	30.6%
1987	4,447	2,266	2,648	4,914	26.0%
1988	4,985	1,922	2,776	4,698	24.1%
1989	6,107	3,522	2,415	5,937	25.0%
1990	7,174	4,595	2,259	6,854	25.3%

Source: Economic and Social Statistics, 1960-82, p. 184; and Yearbook of Statistics, 1990, tables 12.15 and 12.16.

(for example, upon retiral or disposal of estate after death) may be taken as a rough measure of compulsory personal savings through the CPF. Table 3 gives official estimates of gross national saving (GNS) and table 6 shows that CPF savings have been a growing fraction of these rapidly growing national savings. As noted earlier, the latter rose from 12 percent of GDP in 1965 to 45 percent in 1990. CPF savings were 15.5 percent of GNS (and 1.8 percent of GDP) in 1965, and 25 percent of GNS (and 11.4 percent of GDP) in 1990.

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Voluntary personal savings understandably are relatively small for most people in Singapore because compulsory CPF savings are more than adequate for those eligible for HDB housing to satisfy the two most important motives for personal saving, namely to acquire equity in housing and to provide old-age security. This has been particularly true since 1981 when the government allowed withdrawal of CPF balances to finance the purchase of private as well as HDB housing. Despite the expansion of public housing it is nonetheless significant that private housebuilding has also expanded rapidly, mainly to cater for higher income groups and expatriates not eligible for public sector housing. However, the share of the private sector in total housebuilding activity has declined, in value terms, from about two-thirds in the 1960s to around 40 percent in the 1980s.

To some extent the two major motives for saving overlap and are substitutes. This is a main reason why the government allows CPF savings to be used to buy housing. Over the years the proportion of Singaporeans owning their own homes has increased rapidly, and most mortgage debts are amortised completely by the time the owner has retired.

By 1980 59 percent of Singaporean households (citizens and permanent residents) were owner-occupiers (with 42 percent owning HDB flats). By 1990 the proportion was more than 90 percent (with 79 percent owning HDB flats). The government is aiming to increase this to 95 percent. The maintenance of high CPF contribution rates is clearly designed to help achieve this goal by sustaining growth of demand and ensuring an adequate flow of personal savings into the HDB and the private construction sector to finance the building programme in a non-inflationary fashion.

With the expansion of the public and private housing stock the floor area and quality of the typical residential unit have also improved markedly. In 1980 68 percent of households lived in HDB flats, but only 13 percent of these had four or more rooms. The massive HDB building programme of the early 1980s allowed more low-income families to move out of cramped quarters in the private sector. Also, some of the older and smaller HDB flats were remodelled or demolished to make way for larger units. There was also a very large expansion of better quality private sector residential construction in the 1980s. This averaged about a third of the total, though a large part of it was for renting to the expatriate community. By 1990 86 percent of the permanent Singaporean population was living in HDB flats, 42 percent of which had four or more rooms.

Nevertheless, in view of the typically large Asian extended family structure a majority of Singaporeans still live in apartments too small relative to their needs and aspirations.

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These aspirations can be translated into effective demand as their real incomes and savings continue to grow. So there does remain considerable scope for further residential construction and upgrading.

#### 4. Actual and Potential Effective Demand for Housing and Infrastructure

This observation calls into question the claim of many commentators that there may have been overinvestment in housing. These claims were most vocally expressed after the severe recession of 1985-86. The claim has various aspects: (i) it is said that CPF rates are too high and, since housing has, until recently, been almost the only purpose for which the rapidly accumulating CPF savings can be withdrawn before retiral, then investment in housing was obviously too high also.<sup>12</sup> Related to this is (ii) the claim that housing investments have displaced other forms of investment, partly because of an unusual degree of subsidy to housing. And (iii) it is claimed that it was the construction boom of the early eighties, together with the raising of CPF rates, that precipitated the ensuing slump.

With respect to the first claim — that CPF rates are too high — it should be noted that in Singapore the government appears to have used the policy as an alternative to heavier taxation. Total tax revenues which were only about 13 percent of GDP in 1965 were still only about 16-17 percent in the 1980s. (Fees, charges, and investment income bring in a further 7-10 percent of GDP). It is true that the government consistently runs budget surpluses, but the additional revenues from sale of securities to the CPF have been consciously sought in order to build up foreign reserves, the earnings from which largely finance the interest paid on securities held by the CPF and in turn credited to members' balances. It can safely be argued that forced savings that accumulate as personal CPF assets or equity in housing are resented and resisted much less than higher taxes would be. They can and have been manipulated for macroeconomic stabilization purposes with as much or more flexibility than the tax weapons.

Because of the fungibility of funds, CPF revenues can be viewed not as the means by which foreign reserves have been accumulated but rather as the means by which the

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<sup>12</sup> In 1978 CPF balances could be used to purchase shares in the Singapore Bus Service; in 1984 other approved financial assets could be acquired; in the same year a "Medisave" scheme was introduced with a portion of CPF balances reserved for this purpose; and in 1989 withdrawals were allowed for some educational expenses.

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government has financed its other spending programmes, in which case it is tax revenues that finance foreign reserves. One of the biggest spending programmes has, of course, been the HDB's building programme and related infrastructure; and the question then is whether high CPF rates have generated excessive funds for these.

It is clear that decisions on the size and quality of public infrastructure could not be left to the private sector. Housing, on the other hand, is not so obviously a public good and so the magnitude of investment there could be left to the private market, within the framework of the usual urban planning regulations.

However, this does require that an efficient capital market is established, capable of attracting just that volume of savings consistent with what people are willing to spend on housing at current prices and debt servicing schedules. In practice many of the preconditions for the development of an efficient private market in housing finance did not exist at the time that the big public housing programme started in the early 'sixties. Rent controls, slow economic growth and high levels of unemployment militated against both the supply of and demand for funds for long-term housing loans on manageable terms.

These problems could have been resolved without resort to forced savings and public housing. However, in view of the serious housing deficit there appears to have been general approval of the total amount of resources put into this sector.

Resources have come partly from general fiscal revenues (i.e. subsidies from taxpayers) as well as from personal savings. Fiscal subsidies (sizeable initially, but decreasing over the years) have been endorsed on the grounds that housing is a merit good like education and health and, indeed, a necessary concomitant of these. It has also been used as an element in nation-building and improved race relations, through the way in which resettlement programmes have been administered.

As for personal savings, it is possible, perhaps probable, that these have increased much faster than in the absence of a compulsory savings scheme. But recall that if the compulsory CPF rates had not been increased, and if voluntary savings had not risen at the rate desired by the government, there would certainly have been higher taxes to finance welfare programmes for the aged and/or to increase housing subsidies. It is not obvious that this would have been possible without seriously weakening the powerful economic growth incentives that have characterised Singapore's recent history.

Despite the heavy direct involvement of the public sector in the building programme and in the capture of funds for its financing, the Singapore experience differs from that of

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many other countries with a similar degree of state intervention. Firstly financing has generally been achieved out of real personal savings rather than from tax revenues or the printing press. It has thus avoided conflict with incentives or with control of inflation. Secondly, it has emphasised ownership (albeit conditional ownership) rather than renting. It has thereby been able to achieve a lower degree of state subsidy than is typical of most public housing programmes, though we have seen that the HDB keeps prices and rents low because it can acquire land at well below the market price and pass the benefit to HDB owners and tenants. Such an important redistributive feature is found in few other countries.

## 5. Housing and Other Investments

It is difficult to answer definitively whether investment in housing and related infrastructure has been at the expense of other investments, or whether overall economic growth and/or welfare would have been greater if less had been spent in these areas. In a trivial sense it can be said that every investment has an opportunity or displacement cost. What matters, however, is whether social returns on other possible spending patterns would have been greater. The answer depends not only on whether spending on, say, the electronics or textile sectors, or on education and health, would immediately yield more welfare or utility, but on whether it would have been possible to sustain the same rate of economic growth by investing more in these sectors and less in housing.

In the public sector there can only be as much spending overall as can be extracted from the private sector in fiscal revenues and borrowings. We have seen that there may be a real constraint on the proportion of national income that can be raised in taxes without conflicting with incentives. A smaller proportion of a rapidly growing GNP spent on education, health and defence may be far preferable to a large fraction of a stagnating GNP. In this sense it is possible that certain items of expenditure have a very much higher dynamic opportunity cost than others, if the consequence of expanding them prematurely is to slow the overall growth process.

In the private sector net incomes are spent on consumer or investment goods. The latter are undertaken only if there is the prospect of buoyant demand for the final products. In Singapore investment in the *traded goods* sector is predominantly to satisfy export demand (while home demand is largely satisfied through imports). In the private *non-traded goods* sector the bulk of demand is for housing (in the public sector non-traded

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goods include not only housing but also the social infrastructure). Expenditure on housing includes not only the value added in that sector, but also all the components of a house that are assembled together by builders: reinforced cement, bricks, glass, electric cables, sanitary fixtures, elevators, etc. Local manufacturers of these products will make investments in the factories, offices, machinery and equipment needed for these only if an adequate final demand exists.

From this perspective the growth process is largely driven by final demand conditions. Without the prospect of adequate demand there will be little incentive to invest in new and more productive equipment or to switch to new or improved products, processes and organizations.

In Singapore, the two main areas in which policy has operated to accelerate the growth of real demand<sup>13</sup> have been in the fields of manufactured exports and in housing and related infrastructure.

Success on the export front appears to have followed from policies that have (i) made Singapore one of the world's most open economies in terms of trade and foreign investment; (ii) kept inflation strictly under control via prudent fiscal, monetary and labour management, while at the same time ensuring that (iii) at least until the early 1980s the nominal exchange rate was held in such a way as to ensure that in real terms it was normally highly competitive, enabling Singaporean goods to capture an increasing slice of world demand. Success has bred success in that export revenues have been reinvested in reequipping and diversifying the range and quality of exports.

In the field of housing and infrastructure real demand has been expanded by diverting real tax revenues and savings to them. But it is significant that even though the government progressively raised the compulsory CPF savings rate and, until 1981, allowed withdrawals only for the purchase of public housing, there remained a substantial amount of additional voluntary saving to finance better housing in the private sector as incomes increased. For many years long waiting lists for HDB units showed that, despite expansion in supply far greater than in other countries at similar or lower levels of development, latent demand for housing was far from exhausted.

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13 Policy to increase real demand refers here to the classical concept of reciprocal demand through which there is a greater real supply of goods and services by both parties to exchange. It is distinguished from an increase in purely monetary demand. Increased real demand is usually accompanied by a higher stock of money, but the process is not normally due to an increase in monetary demand, rather to policies operating on institutions and *relative* prices. Measures that boost real demand can be accompanied by relatively austere Keynesian demand management and monetary control. For elaboration of this subtle but important distinction, see Sandilands (1990, chs. 12-13).

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The supply of housing, meanwhile, responded elastically to the massive expansion of effective demand that was stimulated in a non-inflationary way by the direct and indirect policy measures described above<sup>14</sup>. A further, automatic expansion of demand for housing resulted from the rapid growth in real national income. GDP growth in turn was itself surely in large part due to the direct and indirect impact on the economy of a dynamic construction sector.

In answering the question whether all this investment in the construction sector might have starved other industries of investible resources, let us look at the resources that were in fact available to the private sector after deducting the huge investments undertaken (i) by the public sector on housing and infrastructure of all kinds, and (ii) by the private sector itself on residential construction.

Table 7 shows that the share of GDP devoted to private *non-residential* gross fixed capital formation (GFCF) actually increased dramatically after CPF rates were increased in 1968 and members allowed to use these funds to buy housing. Far from savings and investment in housing diverting resources from other sectors, they appear to have had a complementary and stimulatory effect on other investments. Private non-residential GFCF rose from 9.4 percent of GDP in 1965 to 12 percent in 1969 and 25 percent by 1972 during a major residential construction boom. The ratio was at its peak of 29 percent in 1981-82 when construction was again experiencing a major boom. Since GDP was itself growing very rapidly over this period, the *absolute* increase in the gross volume of private investment was even more impressive.

Table 7 also shows that gross investment in machinery and equipment (including transport equipment) in the private sector also held up strongly during periods when the construction sector was booming. As a proportion of GDP it averaged 9.5 percent in 1965-69; 19 percent through the 1970s; and about 17 percent during the 1980s.

No data are available in Singapore on depreciation, so it is not possible to compare directly the *net* investment figures with those for the United States, for example, where private

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14 The relative prices of construction materials have not risen despite the pressures of demand. Between 1974 and 1985, when building activity was increasing very strongly, the price index for building materials rose by only 4 percent, while general wholesale prices rose by 38 percent. Between 1985-89, when building was relatively slack, building materials' prices rose while prices of manufactured goods in general were falling. Property prices, however, did rise rapidly during the construction boom period 1979-83. This must have been mainly a reflection of land prices (a transfer payment). Construction sector wage rates rose more slowly over that period than in the rest of the economy (*Yearbook of Statistics, 1989, p. 67*).

**Table 7**  
**GROSS FIXED CAPITAL FORMATION: PRIVATE SECTOR, IN CONSTANT 1985 PRICES**

Year	Residential building	Non-residential building	Machinery and equipment
1965	448	124	467
1966	440	97	477
1967	510	155	598
1968	554	206	898
1969	620	360	1301
1970	668	575	1857
1971	743	815	2470
1972	772	850	2694
1973	844	676	3315
1974	790	620	3841
1975	758	646	3330
1976	770	535	3377
1977	717	501	3440
1978	542	868	4111
1979	512	1296	5142
1980	575	1623	6155
1981	816	2286	6574
1982	1426	2939	6577
1983	2320	3107	5834
1984	3126	2972	6285
1985	2621	2316	5548
1986	1564	1286	5576
1987	1499	1139	7085

Source: Singapore National Accounts, 1987, pp. 81-2

net investment in machinery and equipment in recent decades has averaged only around 2 percent of GDP (Council of Economic Advisers, 1989, table B-17). In a more rapidly growing economy the rate of physical depreciation and economic obsolescence of capital is no doubt much greater than in the US.<sup>15</sup> Nevertheless, it is clear that the volume of resources available to private investors in Singapore has been ample to satisfy

<sup>15</sup> Thus estimates of the rate of growth of Singapore's capital stock, in a neo-classical "accounting-for-growth" exercise using estimated depreciation rates of the United States as a proxy for Singapore, are almost certainly exaggerated. This may help explain why one well-know study (Tsao, 1985) concluded that there had been very little "total factor productivity growth" in Singapore's manufacturing sector in the 1970s.

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the needs of rapid expansion both in structures and equipment. The picture is therefore one of complementarity between investments rather than trade-offs.

### 6. Was the 1985-86 Recession Caused by the Construction Boom?

An alarmingly severe recession hit the Singapore economy in 1985 and 1986, though it bounced back very strongly in 1987 and the growth rate has remained high since then.

Prior to the recession the construction sector (both residential and non-residential) had been expanding very rapidly for several years. The average annual rate of growth of real construction expenditures between 1980-84 was over 25 percent (and growth of construction GDP was 22 percent). This coincided with an average annual GDP growth rate of 8.5 percent. But growth slowed to only 3 percent in the last half of 1984; and in 1985 the economy contracted by 1.6 percent, the first time since 1964 that negative growth had been recorded.

An influential review of the causes of this slump placed much of the blame on "over-saving... coupled with misallocation of such resources into the construction sector rather than into more productive investments in the manufacturing and allied sectors" (Lim, 1988, p. 37).<sup>16</sup> Actually real private sector investment outside of construction increased by 7.7 percent in 1984, though in 1983 these had fallen by nearly 9 percent (*Singapore National Accounts 1987*, 1988, p. 83).

Clearly problems were building up outside the construction sector in the early 1980s. The real exchange rate appears to have been informally pegged to the US dollar and in these years the dollar was appreciating very strongly against other currencies, including those of Singapore's major competitors. Singapore's export-weighted effective exchange rate index increased by a crippling 27.9 percent between 1980 and 1985.

The consequences appear to have been insufficiently understood (as explained in section 1 above) due to the misleading nature of Singapore's official "domestic" exports. When allowance is made for the import content of "domestic" exports, appropriately weighted, the true performance of net exports is seen to have

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<sup>16</sup> This diagnosis echoes that in the report of the Economic Committee (1986) prepared under to chairmanship of the Minister of Trade and Industry. One of its main recommendations was to cut the CPF contribution by employers from 25 to 10 percent.

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been very bad after 1981. Their growth slowed from over 19 percent in 1980 and 1981 to only 3.8 percent in 1982 after which they fell by 3.7 percent in 1983, by 7.8 percent in 1984, and by a further 8.2 percent in 1985<sup>17</sup>.

By contrast, the official export data showed some modest growth in exports throughout the period to the middle of 1985. "Thus", it was mistakenly concluded, "there seems no reason why the fall in external demand should have caused GDP growth to collapse so dramatically in 1985" (Lim, 1988, p. 40).

In 1985 drastic measures were taken to reduce domestic costs, particularly wage costs and public utility charges; and in 1986 and 1987 there also were significant depreciations of the Singapore dollar. After this net exports recovered strongly.

It seems reasonable to argue that had Singapore not allowed itself to be priced out of its export markets in the early 1980s there would not have been such a slump in incomes in 1985 and 1986. In that case demand for housing and other construction projects would not have fallen so far short of the expanding supply. As incomes recovered after 1987 the increased building stock was rapidly taken up - much of it by expatriates returning to work for their export-oriented multinational companies - and in 1989 new building activity picked up strongly once again.

The construction boom of the early 1980s - much of it deliberately encouraged, directly or indirectly, by government action on the capture and disbursement of CPF savings for both HDB and private sector housing, together with a number of other major projects by the URA which included a huge hotel expansion programme for tourists and business visitors (who were then deterred by the high Singapore dollar) - acted for a while as a much needed offset to the decline in production for export.

There was, however, a limit to the extent to which construction could sustain economic growth without support from the other major sector (exports) that was subject to exogenous influences (mainly an uncompetitive exchange rate) on its demand. That part of construction activity that was "endogenously" sensitive to the decline in exports and tourism had turned down sharply in the second quarter of 1984; and the whole sector was falling at an annual rate of 10 percent in the last quarter of that year (*ibid.*, p. 20). Overall economic growth also slowed sharply in the second quarter of 1984; declined throughout 1985; and began a slow recovery in 1986 when exports bounced back.

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<sup>17</sup> It is notable that there is little correlation between the state of overall world market demand (depressed in 1980-81 and quite buoyant thereafter) and Singapore's own export sales. It appears that strength or weakness of the Singapore dollar had a greater influence on ability to sell abroad.

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Construction, however, remained in the doldrums until 1989, since when there has been a strong recovery.

### 7. Exports and Construction as "Leading" Sectors in Singapore

The secular growth rates of the construction and export sectors between 1965-84 (averaging 13.9 and 13.2 percent per annum respectively) were well above the average rate of growth of overall GDP (9.7 percent). In this sense they were clearly "leading sectors" in the economy, while growth was, in a relative sense, much slower in other sectors geared to domestic consumption demand and public services.

However, the data also reveal a relative volatility of fluctuations in the leading sectors. They can lead the economy into depression as well as rapid expansion. It is a characteristic of such sectors that their own growth rates are relatively *independent* of the overall growth rate, being influenced more by "exogenous" variables that affect real demand for them, such as movements in the real exchange rate or the availability of finance for housing on terms that are manageable for final buyers. Their performance affects the overall growth rate more than the latter affects them. Though naturally there is some symbiosis, it is less than for "following" sectors. The latter depend much more on their specific income elasticities of demand (associated with growth of GDP) than on extraneous influences such as exchange rates, interest rates or CPF rates. These most strongly impact on effective demand for exports or housing, and policy-makers can manipulate them for purposes of macroeconomic stabilization and growth.

Taking the period 1965-91 as a whole, Singapore has clearly been an extremely successful economy. There is now a general consensus that open, outwardly oriented economies have achieved "export-led growth" that is generally much more impressive than that of more closed economies. There is perhaps less awareness of or agreement on the role of a dynamic construction sector in accelerating and sustaining rapid growth. Given that Singapore has accorded greater priority to housing and construction than almost any other economy in the world, and yet has achieved an almost unparalleled overall growth record, this is at least *prima facie* evidence that the relationship is not coincidental; that the tremendous pace of urbanization has not been merely an automatic concomitant of economic growth but has largely been a matter of the conscious priority given it by policy-makers.

Mistakes there have been, of course, not least in 1984-86 when both of the main leading

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sectors were allowed to lead the economy down at the same time. Also, it seems that residential construction has been justified mainly on social and political grounds while in economic terms it is often described, even by its defenders, as a "necessary burden". The economic record of Singapore in fact suggests no such conflict. The ultimate purpose of economic life is to satisfy individual and social demands in the most efficient way possible. In Singapore, as surely in all countries, the latent demand for decent accommodation and related infrastructure is enormous and at least as legitimate and natural an aspiration as for television sets or automobiles, about which there is usually less argument or defensiveness.

The trick is to ensure that latent demand is translated into real effective demand through the mobilization of genuine (non inflationary) savings out of rising real incomes and output. In many countries the latent demand for housing is frustrated or repressed by inadequate financial institutions and inflation, so resources flow instead into other areas of lower intrinsic value or potential dynamism. Singapore's experience with dynamic leading sectors through the conscious mobilization of relatively insatiable potential or latent demand surely offers valuable lessons to the world.

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**Abstract**

*This paper summarises the main features of Singapore's exceptionally rapid growth performance since 1965, and examines why its savings rate has increased to one of the highest in the world, at 45 percent of GDP in 1990. The main focus is on the way in which this was used to support a major housing and urban renewal programme that in turn supported an export-led industrialization strategy as well as diversification into financial and other services.*

*It shows how policies can ensure that massive increases in personal, government and business sector savings are channeled into investments that complement each other, so that not only is aggregate effective demand maintained (with very little inflation) but resources allocated into highly productive, growth-promoting areas. It offers support to the hypothesis that the construction and export sectors can be converted into dynamic "leading sectors" through exogenous government policy. Occasionally, however, policy errors can cause a leading sector to lead the economy into recession rather than fast growth. It is shown that this was particularly true in Singapore in 1984-86.*

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**EPARGNE, INVESTISSEMENT ET CONSTRUCTION RESIDENTIELLE DANS LE CONTEXTE DE LA CROISSANCE DE SINGAPOUR, 1965-90**

**RESUME**

*Cette étude résume sommairement les grands traits de la croissance exceptionnellement rapide de Singapour depuis 1965, et approfondit la question du taux d'épargne qui est devenu un des plus élevés du monde, à 45 pourcent du PNB en 1990. Le principal point du papier porte sur la façon dont ce taux a été utilisé pour encourager un grand programme de renouvellement résidentiel et urbain. Cela à son tour a entraîné une stratégie d'industrialisation basée sur l'export ainsi que la diversification des services financiers et autres.*

*L'étude montre comment des politiques peuvent assurer qu'une augmentation massive de l'épargne (individuelle, gouvernementale et du secteur d'affaires) soit utilisée pour des investissements qui se complètent. Ainsi, non seulement la demande effective consolidée peut être maintenue avec très peu d'inflation mais les ressources peuvent être dirigées vers les secteurs hautement productifs, générateurs de croissance. Cela conforte l'hypothèse qu'on peut convertir les secteurs d'export et de construction en des secteurs dynamiques leaders grâce à une politique gouvernementelle exogène. De temps en temps, cependant, des erreurs de politique peuvent amener à ce qu'un secteur leader conduise l'économie à la recession plutôt qu'à la croissance. On montre que cette hypothèse s'est avérée particulièrement vraie à Singapour de 1984 à 1986.*