John F. Kennedy School of Government
Harvard University
Faculty Research Working Papers Series

Using Markets to Govern Better in Singapore

John W. Thomas and Lim Siong Guan

August 2001

RWP02-010

Draft (8/15/01).

Using Markets to Govern Better in Singapore

By John W. Thomas and Lim Siong Guan[1]

Singapore is a leading example of success in development. The simple fact that GNP per capita rose from US$921 at independence in 1965 to US$23,285 in 2000 is eloquent evidence of this.[2] Even more impressive is that its success came about in the face of great obstacles. It was brought about by institutions with the capacity and discipline to perform their functions and promote growth in tandem with a high quality of life, and the development of policies that enabled it to do so rapidly.

In his classic trilogy Asian Drama, Gunnar Myrdal makes the distinction between “hard” and “soft” states. Hard states have the capacity to achieve development because they can make necessary policy decisions and enforce them, imposing even unpopular obligations on their citizens, while soft states cannot.[3] Singapore is a classically hard state. It was born in crisis. It was a British colony that became a part of independent Malaysia in 1959 but in August 1965 it was cut out of Malaysia and forced, against the opposition of Singapore’s Prime Minister Lee Kuan Yew and his top political leadership group, to become an independent state.

In 1965, when Singapore separated from Malaysia, Singapore’s prospects for survival looked bleak. It had little land and no natural resources; neighboring countries were overtly hostile, and it was heavily dependent on subsidies from Britain in exchange for allowing Britain to retain its major military base in Asia. In addition, it had a potentially explosive population mix of Chinese, Malays, and Indians. Its only assets were a strategic location and strong, pragmatic leadership. Singapore’s leaders quickly concluded that, to survive, their nation must be tougher, more disciplined, and more pragmatic than other nations. This mindset has permeated the country’s leadership perspective from 1965 to the present.

In 1965, Lee Kuan Yew’s view of Singapore’s prospects and what it would take to survive were clear:

"I concluded an island city-state in Southeast Asia could not be ordinary if it was to

---

[1] John W. Thomas is Lecturer in Public Policy at the John F. Kennedy School of Government, Harvard University, and Lim Siong Guan is the Permanent Secretary of Finance and Head of the Civil Service of the Government of Singapore. This paper was written for the Kennedy School of Government's Visions of Governance in the 21st Century project.

[2] Singapore Department of Statistics, Web Site

[3] Myrdal, Gunnar, Asian Drama: an Inquiry into the Poverty of Nations, Volumes 1, 2, 3. New York, 1968, Pantheon for the Twentieth Century Fund. Alternatively, in soft states “policies decided on are often not enforced, if they are enacted at all…. Further national governments require…few obligations to either to do things in the interest of the community or to avoid actions opposed to that interest.” Volume 1 page 66, Volume 2, Pages 895, 896.

survive. We had to make extraordinary efforts to become a tightly knit, rugged and adaptable people who could do things better and cheaper than our neighbors, because they wanted to bypass us and render obsolete our role as the entrepôt and middleman for the trade of the region. We had to be different."[4]

In recent years there has been a widespread shift from a vaguely socialist, state-centered model of government to a model that accepts that governments must encourage private enterprise under a capitalist economic model. Though most visible in the developing nations, it's also a perceptible trend in North America and Europe. It's a shift that has brought about many changes, two of which have been particularly important. First, nations are increasingly faced with international competition, which has meant that governments and national economies have had to become much more efficient to compete effectively; and second, rapid growth in the private sector has inevitably moved private enterprise into activities traditionally considered the domain of government.

Yet, long before the changes of recent years, Singapore had recognized that it had to become efficient and internationally competitive to survive. Part of its strategy was to use market mechanisms to make government more effective, and to open its economy to global competition. For many countries, the penetration of the market into areas previously considered government's domain was viewed as eroding the capacity and influence of government. However, Singapore recognized the potential of markets to enhance the process of governing and has selectively employed market mechanisms as instruments of government for some time. In few countries is the market used as extensively in the management of traditionally public functions; and no country has been more thoughtful in its approach to this issue, more selective in how it has used the market in governing, or more careful in evaluating the performance of markets and their impact on the quality of governance.

This paper examines Singapore's experience in employing market-based mechanisms to promote its goals. From a Singapore perspective it examines nine cases in which the government has used market mechanisms to improve governance. These cases provide an opportunity for others to examine and learn from Singapore's experience.

II. BACKGROUND: MARKETS vs. GOVERNMENTS

In pursuing its goals of being highly competitive internationally, insuring economic growth and maintaining a high quality of life, the Singapore government employs all available instruments. Its success is confirmed by the Global Competitiveness Report 2000, which shows that in "Growth Competitiveness Ranking" Singapore ranked first globally in 1999 and second in 2000.[5] In part, Singapore's competitiveness evolved because the country did not wait to use market mechanisms until the 1980s or 1990s when privatization and markets became fashionable solutions to the problems of

---

[4] Lee Kuan Yew, From Third World to First: The Singapore Story: 1965-2000, Singapore 2000, Times Media Pte. Ltd. Page 24.

[5] World Economic Forum and Harvard University, The Global Competitiveness Report 2000, New York, Oxford University Press, 2000, Page 11, Table 1.

governance. Instead, Singapore had incorporated the market in its governing repertoire back in the 1960s, when the idea was decidedly unfashionable.

What is absolutely key to understanding Singapore's success in applying market systems to public problems is the centrality of the state in assessing, controlling, and regulating the market. The hallmark of Singapore's use of the market has been strong government control and oversight. Private initiatives do not displace government unexpectedly or haphazardly—privatization has taken place only when and where the Government has become convinced that the private sector can do the job better. Government will test and determine where markets perform functions with social objectives. It applies the same rigorous standards to testing and evaluating market performance that it does to government policies. Frequently, this means a long process of testing alternatives and making adjustment, as it did with electronic road pricing. It is also worth noting the market instruments often used in conjunction with public sector involvement and regulation as in the case of transportation policy.

There are many ways in which a government can use market mechanisms to enhance governance. Singapore uses the private sector or the market to achieve four types of objectives:

1. To allocate scarce resources—in particular, space, a very scarce resource in a small island nation;
2. To carry out certain essential functions and services that the private sector can do better than the public;
3. To create responsibilities among the populace by giving them a stake in the nation and its success; and
4. To create incentives for economic behavior and to encourage multinational corporations to invest in Singapore.

There are variations on each of these types of objectives. It is widely accepted that market systems are more efficient in allocating scarce resources than government systems. The market, via the profit maximization process, generally provides resource owners and business firms with a strong incentive to undertake projects that create value. The efficiency of this mechanism, however, is dependent on competitive markets. Non-competitive markets fail to allocate resources efficiently governments must step in to correct the resultant problems. Such market failure takes many forms. One such example is the case of "externalities." Governments want to curb negative externalities such as pollution and promote positive externalities like basic education by means of regulation, taxation or subsidy, or public provision. Markets also fail in the provision of "public" goods. The "non-rival" and "non-excludable" characteristics of goods from national defense to street lighting (and the consequent inability to charge for them) imply that the private sector will lack the incentive to supply them.

While government has the potential to improve economic efficiency by correcting these market failures, there is no guarantee that society will benefit from such action.[6] Government failure is also possible due to reasons such as:

• "Buffet syndrome": Over-consumption of government services that are collectively-financed (via taxes), due to the absence of direct user costs.
• Special-interest effect: Lobby by interest groups in favor of selective area of expenditure, which skews the allocation of resources away from efficient outcomes.
• Absence of bottom-line or termination mechanism: Government output is generally not connected with any bottom-line for evaluating performance. Furthermore, there is no reliable mechanism to terminate government activities when they are not successful. Once public spending on an item has been committed, it is very hard to withdraw it.

Ultimately, the choice between markets and governments is complex. It is usually not pure or binary, but is rather a matter of degree and emphasis.[7] The case for government intervention varies across situations, depending on the circumstances and the type of activity involved. A more complete understanding of Singapore's experience requires a specific look at the ways in which Singapore has actually used market systems to insure better governance, which we will do in section IV.

III. SINGAPORE'S APPROACH

Fundamentals of Governance

Since the early days of independence, Singapore has had to learn by doing, alert to opportunities and threats at all times, while correcting and adjusting policies along the way. As a result, the need to be tough, disciplined, and pragmatic has permeated the mindset of Singapore's leadership. This has translated into the following fundamental tenets of governance:

First: the principle of self-reliance. No one owes Singapore an existence. Singapore has had to eke out a living with hard work and the ingenuity of her people. Second: a firm belief in the importance of "Reward for work; Work for reward." The Government discourages corruption and nepotism and promotes meritocracy for the best use of talent. There are minimal welfare benefits, and government subsidies are focused on education, health and public housing, with co-payment elements to discourage over-consumption. Third: test for results, not popularity. Policies should not be determined by ideology or dogma. Ultimately, the methods adopted are the ones that deliver the most effective results.

---

[6] The comment made a century ago by British economist Henry Sidgwick is still relevant today: "It does not follow that whenever laissez-faire falls short government interference is expedient; since the inevitable drawbacks of the latter may, in any particular case, be worse than the shortcomings of private enterprise."
[7] Charles Wolf Jr., in his book "Markets or Governments" characterizes the choice as 'choosing between imperfect alternatives'.

Markets in Governance

The above fundamentals underscore the importance of rational analysis and economic principles in policy making. From the outset, Singapore's leaders recognized both the effectiveness of the market system in rewarding effort, innovation and enterprise, and the potential to make use of market forces to improve the functioning of government. Over time, Singapore has grown to rely on the market as the predominant mode of resource allocation. The Government intervenes only when market failures exist, i.e. when there are positive or negative externalities, or lack of competition and poorly informed buyers and/or sellers. Yet the form of government intervention employed is very much guided by market principles and processes as shown in Chart 1.

Chart 1:
Use of Markets for Governance in Singapore

Government Action:

Market Failures:	**Market-based Mechanisms**		**Non Market-based Mechanisms**
	Demand approach	*Supply approach*	
Positive externalities Negative externalities Lack of competition Imperfect information	• User-charge system: People only need to pay for services which they directly utilize • Co-payment; Co-investment: Government subsidies to companies and individuals are provided on basis of co-payment or co-investment	• Government regulation: - Promote competitive markets - Allocate resources through market mechanisms • Enhance operating efficiency through commercial attitudes and management practices	• Government allocation: Tax revenues finance government agencies, which provide services free

The use of market mechanisms can be grouped under two broad sets of measures: demand and supply. The key principles underlying each of them can be outlined as follows:

Demand aspect: This pertains to the way the Government charges for services. The key principles are:

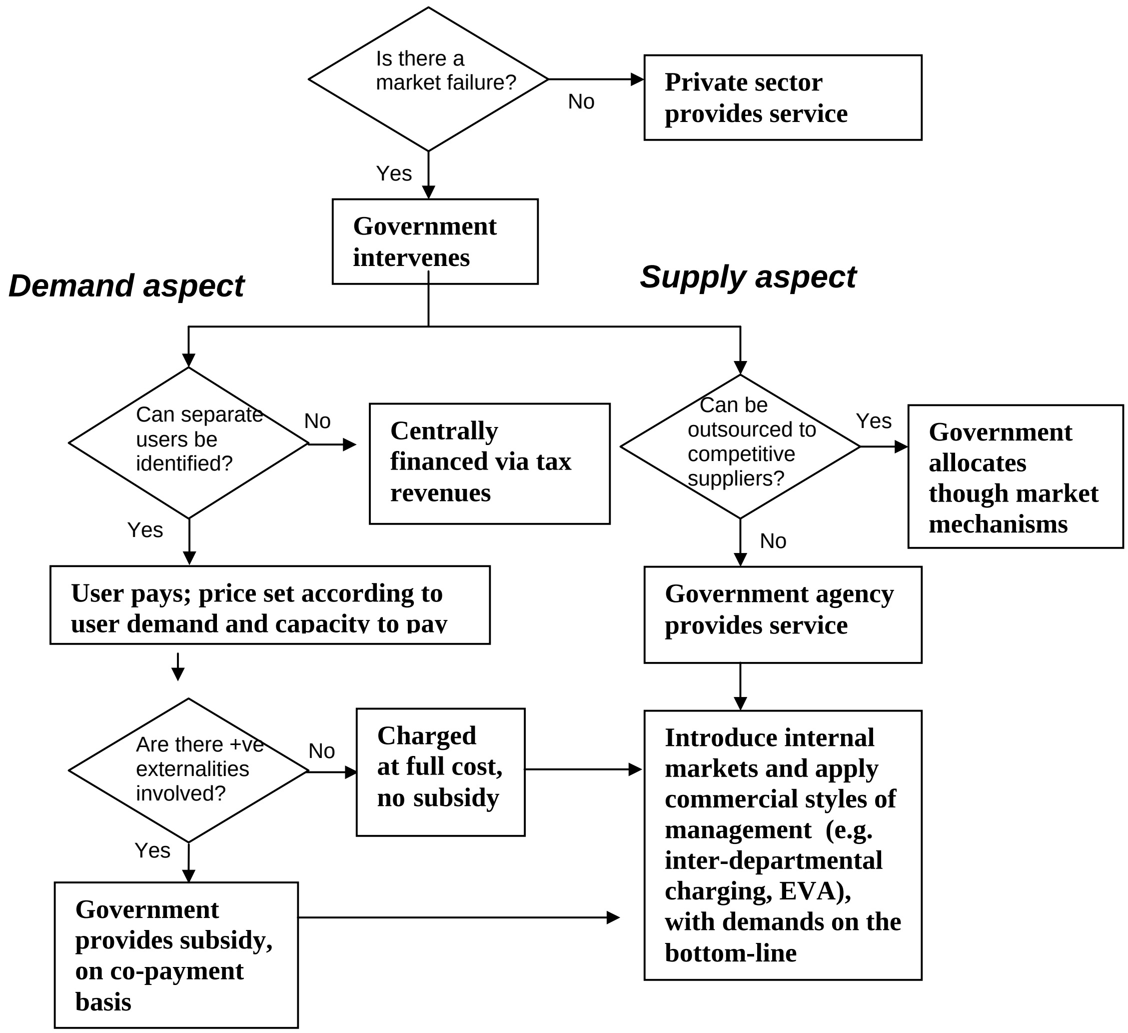
• To the extent that there is an identifiable user, adopt the "user-pays" principle, with prices set according to user demand.

• Where significant positive externalities exist (e.g. in the case of a public good), the Government will step in to provide subsidies.
• Subsidies are provided on a co-investment/co-payment basis. This creates the correct market incentives, as it is based on the principle of willingness to pay, with the appropriate price signals to get efficient allocation/distribution.
• The extent of government subsidies (and the corresponding co-payment element) depends on the criticality of the service concerned and the extent of the externalities associated with it. For example, housing, education and health care services receive the largest amounts of government subsidies in the budget.

Supply aspect: This is about the way the Government supplies public services. The key principles are:
• Provision of services should be left to the private sector if market solutions are available.
• Where it is more efficient to have a few private operators (due to Singapore's small size and limitations of land and space), government will allocate resources through market mechanisms (e.g. auction for operating licenses). This allows the Government to appropriate the rent and subsequently redistribute to the public. This is preferred to private sector monopolies, which may extract the rent from consumers in the form of high margins.
• Internal markets are put in place within the government sector to introduce market forces and impose discipline and incentives on providers and consumers of internal services.
• Commercial attitudes and management practices are adopted to enhance the operating efficiency of public organizations.

Chart 2 provides a schematic representation of the above principles, summarizing how these can be applied as part of an overall decision-making framework.

Chart 2:
Market-based Principles at Work



IV. SPECIFIC POLICY EXAMPLES FROM SINGAPORE'S EXPERIENCE
Market principles are integrated into many government policies, programs, and operations. Some examples include social security; public housing; health care; education; road congestion and vehicle ownership and usage; the foreign workers' levy; government-linked companies' technology and cluster development; and markets in government agencies. It's illuminating to take a brief look at how these policies were developed, and to consider the use of market principles in each.

Social Security—Central Provident Fund
The Central Provident Fund (CPF) is a mandatory save-as-you-earn social security scheme, premised on the principles of thrift, self-reliance and individual responsibility. The CPF was established in 1955 to encourage savings for a basic income in retirement. It is mandatory for all public and private employees, but optional for the self-employed.

Today the CPF has 2.8 million members, and only 40,000 adult Singaporeans do not have CPF accounts.

Originally intended purely for retirement savings, the CPF has since evolved into a comprehensive savings scheme to help finance CPF members' healthcare, housing, education and retirement needs. However, its salient features have not changed since 1955. The returns on members' CPF balances continue to reflect market interest rates,[8] and there is a direct link between contributions and benefits, as all contributions are earmarked to individual accounts, with no redistribution among members. More importantly, the CPF is fully funded by both employees and employers, which discourages any notion that retirement benefits are a free good.

Every employee is required to contribute 20% of his income to CPF, with a matching contribution from his employer.[9] Government does not contribute to the CPF other than as an employer for the public sector, and in the provision of tax concessions—CPF contributions, accumulations, and withdrawals are untaxed. While the total CPF contribution rate may represent a large wedge between the cost of labor and a worker's take-home pay, it is successfully implemented with minimal distortions to the labor market because of widespread acceptance among employers and employees. In addition, labor market flexibility is ensured through other measures like the introduction of variable wage packages and the establishment of the National Wage Council in 1973—a tripartite body to strengthen relations between the government, workers and employers and provide guidelines on annual wage adjustments.

Besides providing a mechanism to encourage retirement savings, the design of CPF also ensures that basic needs like housing, health care and education are taken care of. Members are free to use their CPF savings for property purchase, financial investment, medical fees, and higher education.[10] Investment options have been liberalized such that members who believe they can, by their own efforts, earn higher returns on their CPF balances may now invest in a wide array of professionally managed financial products, including fixed deposits, approved insurance policies, unit trust and fund management accounts. In short, beyond the minimum state-specified provisions, the CPF is essentially a self-reliant pension fund.

To maintain the longer-term objective of ensuring financial security in old age, the Minimum Sum Scheme was introduced in 1987 to ensure that all retirees have sufficient savings to support a modest standard of living during retirement. Under this scheme, members who turn 55 are required to set aside a Minimum Sum of US$38,200, of which

[8] The interest on members' balances is based on the weighted average of 20% of the savings and 80% of the 12-month commercial bank deposit rates.
[9] CPF contribution from the employer was reduced by 10% points in Jan 1999, in response to the 1997-99 economic downturn, but has been partially restored to 12% points in April 2000 and subsequently to 16% points in Jan 2001. It will be restored to the full 20% points as the economy recovers.
[10] Early withdrawals for other forms of consumption, however, are not permitted, and funds withdrawn for investments cannot be used for consumption prior to age 55.

US$14,700 must be kept aside in cash and the remaining US$23,500[11] can be pledged with a property. The Minimum Sum may be used to fund a pension through the CPF, or used to purchase an approved annuity or pension from a commercial bank. This ensures that at least part of the retirement benefit is taken in the form of a pension and cannot be consumed rapidly.

Public Housing

Singapore's public housing program can be characterized as an integrated government-and-market-based system, aimed at universal provision of housing, without raising it to the level of rights or entitlement. Singapore's program was initiated in 1960, a year after internal self-government was gained from the British Colonial Office. The program began modestly, providing basic rental units for the poor who were living in over-congested urban dwellings. After one year of establishment, the new public housing authority, the Housing and Development Board (HDB), saw to the completion of more than 7,000 rudimentary apartments. Construction activities proceeded rapidly. Quality of apartments vastly improved. The apartments today are far from rudimentary and over 90% of Singaporeans own public housing properties bought with CPF savings. In fact, Singapore's successful public housing program stands out as a marked contrast to the many instances of public housing failures in other countries.

The HDB is entrusted with the mission to provide high-quality and affordable homes to the majority of the population. The eligibility income ceiling for HDB lease ownership is reviewed and raised periodically, in step with economic growth, to include up to 90% of households.[12] Allocation of HDB apartments is on a first-come, first-served basis. The selling price of HDB apartments is based on affordability considerations. For example, new 4-room HDB apartments are priced so that 70% of the households will be able to afford them.[13] Larger room-types are subsidized at a progressively reduced rate. At the top end of the spectrum, Executive Condominiums, charged at full costs, are offered to meet the new aspirations and rising expectations of a younger generation. Executive condominiums are comparable in design and facilities to private condominiums, and are developed and sold by private developers.

The market mechanism enters the housing system in that housing consumption is tied exclusively to affordability. The type of apartment purchased is dependent entirely on what the household is prepared to pay. This motivates families to upgrade their housing as their income levels rise, leading to a filtering down of older housing units to the lower-income group.

This upgrading process has developed steadily since the 1970s, reflecting Singapore's economic success and growing affluence. It is also partly the consequence of HDB's resale policy. A HDB apartment owner is entitled, after five years of occupancy, to resell

[11] Converted from S$65,000 (S$25,000 in cash and S$40,000 in property) based on exchange rate of US$1: S$1.7. This exchange rate is used throughout the rest of the paper.
[12] Currently, the income for an eligible household to qualify for public housing is $10,000 per month.
[13] The nominal number of rooms includes sitting-dining room and bedrooms; kitchen and bathrooms are excluded from the count.

the apartment to anyone eligible for public housing (at a price that is agreed upon between themselves without HDB intervention) and apply for a new upgraded HDB apartment with the proceeds of the sale. Market forces are allowed their full impact in determining the resale values of the apartments. Through this resale mechanism, public housing effectively serves as an investment asset for Singaporeans.

The HDB is able to generate a fairly substantial return from its public housing program, with income derived from sale of apartments, rent collected from commercial and industrial premises, and revenues from ancillary services such as parking lots and markets. The return is reinvested into successive cycles of housing production. This helps to contain the amount of government subsidy required to finance HDB's operations. For example in fiscal year 2000, government's capital grant to HDB was less than 3% of the annual government budget.

Health Care

Health services have significant positive externalities, and are often cited as grounds for government intervention and expenditure. Health care financing systems, however, vary considerably from country to country, as governments grapple with solutions to provide high quality and cost-effective health care services. At one extreme is a completely tax-funded system of universal health coverage where patients bear little or no co-payment at the point of consumption—the British National Health Service being a case in point. This, however, tends to encourage over-consumption, resulting in rationing by queuing. At the other end of the spectrum is the American healthcare system, with little state involvement. This, on the other hand, leads to problems of high costs, incomplete coverage and wide variations in the quality of care.

Singapore's solution to health care financing is premised on two key market-based principles: individual responsibility, with community and government support for those in need, and patient co-payment to discourage over-consumption and to avoid the pitfalls of a completely free medical system.

In line with the above principles, a compulsory Medisave scheme was introduced in 1984 as part of the CPF to help Singaporeans build up sufficient savings for their hospitalization expenses. Under this scheme, a portion of the individual's monthly CPF contributions (6–8 percentage points depending on age) is set aside in a personal Medisave account. This approach places the responsibility on the individual to save and utilize his Medisave funds judiciously. It also helps to discourage over-utilization of medical services, since individuals can keep their savings for retirement if they do not draw on their Medisave.

Medisave preserves the individual's freedom on choice of health care provider and hospital ward type. Primary care services at the polyclinics are subsidized at 50% of cost by the government. Hospital wards are subsidized according to the level of comfort chosen by the patient. Generally, the percentage of government subsidy increases with decreasing levels of comfort. For example, Class-A wards with single-bedded room, television, attached bathroom, and air-conditioning are charged at full cost, while Class-C wards, which are open, multi-bedded wards, are subsidized at around 80% of cost. Despite the variation in subsidy, however, the level of medical care provided is the same for all and provided by the same medical staff. In short, patients can "self-select" into the appropriate class ward according to their willingness to pay, without being forced into a particular subsidy bracket.

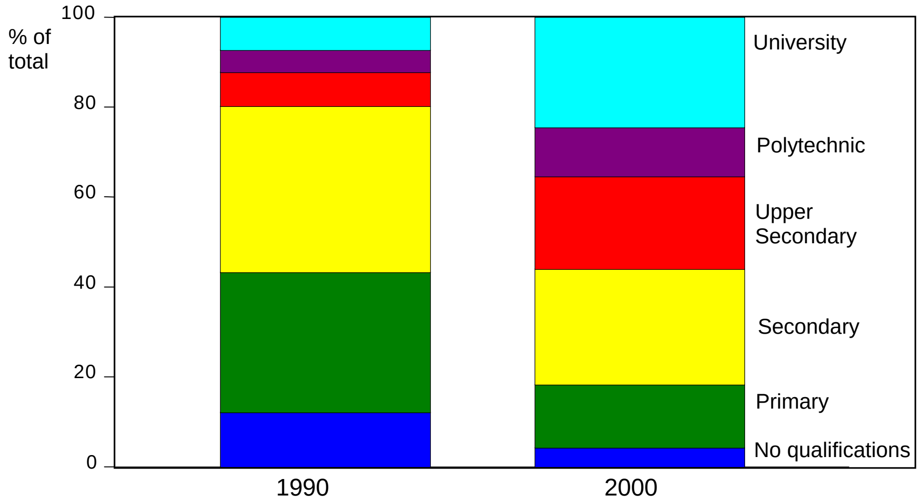
The Medishield—a national low-cost insurance scheme—was introduced in 1990 to provide Singaporeans with financial protection against high expenses arising from prolonged or serious illnesses. Medishield automatically covers all Medisave account-holders below 75 years old unless they opt out. Unlike most national health insurance schemes, Medishield is run on actuarial, not social, principles, whereby the premiums and benefits are determined based on actual health risk factors in the population. Thus, those who are at higher risk have to pay higher premiums. This minimizes the hidden cross-subsidies between the healthy and unhealthy. There is also no subsidy across age bands.

Despite Medisave and Medishield, there still are a few Singaporeans, mainly poor and elderly, who are unable to pay their hospital bills. In such cases, government has provided a help of last resort through Medifund, an endowment fund set up as a safety net to help poor and indigent Singaporeans pay for their medical care. Medifund was established in April 1993 with initial capital of US$118 million. The capital sum currently stands at US$412 million. Only interest income from the capital sum is used. Patients in public hospitals who are unable to pay their hospital bills even after utilization of Medisave and Medishield can apply to the Medifund Committees for Medifund assistance.

Education

It is well recognized that education, especially at primary and secondary levels, is a quasi-public good, because society realizes distinct benefits from improved education beyond the private, individual benefits that would be reflected in market pricing. Through government investment in education, the education profile of Singaporeans has improved significantly over the last decade. Today, 56% of the 25 to 34-year-old cohort have above secondary-level qualifications. This is almost a three-fold increase compared to a decade ago, as shown in Chart 3.

Chart 3:
Educational Attainment of Singapore Residents (age 25-34 years)



While the Government continues to play an important role as an education provider, it has also embraced market mechanisms to enhance the public school system. In particular, a co-payment mechanism is put in place to drive home the fact that there is a cost to providing public education. The extent of individual co-payment increases with the level of education. Minimal amounts of co-payment are required for primary and secondary students, as basic education is almost 100% subsidized by the government. At higher levels, education serves not just a public benefit but is also a form of enhancement to the individual's future income stream. Hence, the percentage of co-payment is higher for technical college (polytechnic) and university students—Government subsidizes about 83% of operating costs for technical colleges and 75%–84% for university undergraduate courses. The current plan is for university tuition fees will be increased over the next two years, in line with the policy to have university students bear 25% of the cost of their education.

At the same time, various loan and financial assistance schemes are provided to ensure that no student is denied the opportunity for higher education because of financial difficulties. The Education Scheme, for example, is a loan scheme, in which CPF members can utilize their CPF savings to finance their children's or their own tertiary education.

On the supply side, education in Singapore has been gradually liberalized with innovations like Autonomous Schools. This entails providing schools with greater operating autonomy, so that they can maximize the use of resources and experiment with new ideas and innovations in education for the benefit of their students. All schools in Singapore are subject to assessment according to a “School Excellence Model” linked to the Singapore Quality Award for Organizational Excellence, a national award directly equivalent to the Malcolm Baldridge Award in the United States.

Road Congestion and Vehicle Ownership and Usage
Land is a very scarce resource in Singapore, where approximately 4 million people share about 660 square kilometers of land (Singapore is about four-fifths the size of New York city's Manhattan island, and one-third the size of Tokyo). Besides transport infrastructure, land is needed for residential, commercial, and industrial purposes, military training, water catchment, and recreational purposes. Moreover, there are no distinct zones for various types of land use—business and residential areas can often be found adjacent to each other. This means that the roads have to accommodate all types of vehicles travel throughout the island. Hence, traffic congestion could impose a severe drag on the economy.

Given the limited road space, there are significant negative externalities each time a motorist decides to travel on the road, especially during peak hours. The full costs attributed to the driver include not only the private costs of driving (such as gasoline costs, parking fees and vehicle maintenance costs), which he pays directly, but also the public costs of congestion and resultant loss of efficiency in the economy. Without government intervention, there will be market inefficiency, as resources (in this case, road space) are under priced, overused and not optimally allocated.

The Government currently employs a range of vehicle usage and ownership restraint measures to manage the demand for road space and control traffic congestion:

• Vehicle Usage Restraint Measures
Electronic Road Pricing (ERP): Road pricing, when implemented in a form that imposes higher charges on motorists who travel at times and places where the road system is congested, encourages motorists to find ways to reduce congestion by changing their own travel modes, times, routes, or frequencies. It optimizes the usage of the road network and helps to spread out peak period traffic. Therefore, road pricing provides the demand-side solution for the problem of limited road space.[14]

The ERP system is a road pricing mechanism that attempts to optimize traffic flow through "market-induced" prices. The first ERP gantries were located at major expressways and at entry points to the Central Business District. Thereafter, the ERP expanded progressively to relieve traffic congestion on outer ring roads, where warranted by traffic conditions. Under the ERP system, motorists are charged every time they drive past an ERP controlled point demarcated by a gantry during operational hours. ERP prices are adjusted quarterly based on traffic conditions to keep speeds within the optimal ranges of 45 to 65kph for expressways and 20 to 30kph for arterial roads. Since implementation, there has been a marked reduction in traffic volume on ERP-priced roads. In all, traffic volumes have reduced by 15% and traffic speeds have been maintained within the optimal speed ranges.

[14] Solutions on the supply side, e.g. building more roads, are less sustainable. Over time, the "latent demand" – people who have been travelling on other modes of transport, at other times or places because of previous congestion – would come into the road network once there is a relief, pushing congestion levels back up again. Road pricing dampens not only the existing demand, but also the latent demand.

Gasoline taxes are imposed at 40% ad valorem and are used primarily as a traffic management tool.

• Vehicle Ownership Restraint Measures

Vehicle Taxes: Measures to restrain vehicle ownership include registration fees, additional registration fees, and custom duties. In addition, car owners must pay an annual road tax based on the engine capacity of the car. The registration fee is a flat charge of US$82. The additional registration fee and custom duties are progressive taxes calculated as a percentage of the open market value of a car. The rates are 31% and 140% respectively. This means that more expensive cars attract proportionately higher fees than less expensive cars. This progressive tax structure serves a useful function from a social equity standpoint.

The Vehicle Quota System was implemented in May 1990. This system controls the growth of the vehicle population at a sustainable rate. The vehicle quotas are revised annually, taking into account vehicle de-registration patterns and the sustainability of growth rates. Currently, the target is about 3% vehicular growth per year until year 2005 to keep congestion under control. This target is reviewed every 5 years.

The key features of the system are as follows: Anyone who intends to register a vehicle must first bid for a Certificate of Entitlement (COE) in a public tender. This method was chosen because pricing is the most efficient way to ration scarce resources, in this case, the right to own a car. Successful tenderers need only pay the lowest successful bid price. This competitive bidding process has been refined over the years to ensure efficient allocation. A trial of on-line bidding will be conducted in the second quarter of 2001. This should result in members of the public being able to make more informed bids. The COE is valid for ten years. Beyond that, the owner must either remove the vehicle from service or renew the COE for another ten years by paying the prevailing quota premium. If he de-registers his vehicle, the Land Transport Authority will recycle the COE and put it up for bidding by new buyers. This is, in fact, a system of renewable rights of usage.

By setting vehicle quotas and pricing them through the bidding process, government effectively appropriates the rent instead of allowing it to become profits for car dealers (while a ballot system would have passed the rent on to just the lucky individuals). The revenue collected from motor vehicle-related taxes and COE constitute part of government operating revenue and are redistributed back to the public through government expenditure.

Foreign Workers' Levy

Singapore has always leveraged foreign manpower at all levels to enhance economic growth. The employment of foreign manpower is a deliberate strategy to enable Singapore to grow beyond what its indigenous resources can produce. The workpass system seeks to attract the different groups of foreign manpower through a graduated scale of privileges, with greater privileges for those who are better qualified. There is a very open policy in offering employment passes for skilled and talented foreigners who wish to work in Singapore, with progressively tighter controls applied to regulate the employment of lower-skilled and unskilled foreign workers who are recruited on renewable 2-year or 3-year work permits.

There are currently more than 500,000 work permit holders in Singapore, including more than 100,000 foreign domestic workers. While these workers help to supplement the local workforce and contribute to economic growth, there are serious social costs arising from the presence of a large unskilled foreign workforce in Singapore. Hence, control mechanisms are put in place to moderate the inflow of unskilled workers. One form of control is the foreign worker levy (implemented in 1980) that seeks to regulate the inflow of workers through the pricing mechanism. Market forces are introduced in that the foreign workers are distributed to the various economic sectors and industries, according to their employers' capacity to pay.

The foreign worker levy scheme ensures that foreign labor does not artificially depress local wages and become a cheaper alternative at the expense of domestic labor. It effectively helps to keep up the wages of local workers at the bottom end.

Government Linked Companies (GLCs)

In the early 1960s, at the time of independence, Singapore faced massive unemployment, acute housing shortages, and a decline in the entrepôt economy. There was a severe lack of private management expertise, entrepreneurship and capital in many sectors of the economy. It was a matter of urgency to restructure the economy from one based on import substitution to one based on export-oriented industrialization supported by foreign capital, markets, and technology. Given these circumstances, the Government adopted an activist approach to help speed up the process of economic restructuring. Multi-National Corporations (MNCs) were freely welcomed. A number of Government Linked Companies (GLCs) were established in specific sectors of the economy where private enterprise was lacking such as shipbuilding, air transport, shipping and development banking.

At that time, for example, the banking industry was still nascent and fragmented. Few banks in Singapore were prepared to lend beyond a 3-year term or finance the fledgling manufacturing companies. Government stepped in to address this market failure by providing development finance to manufacturing companies, including equity capital. This eventually led to the formation of the Development Bank of Singapore (DBS) in 1968. Shortly after its formation, DBS was floated on the Stock Exchange, primarily to foster private sector participation and subject the bank to the rigor and discipline of the market in the conduct of its business. DBS was the first GLC to be listed and had a market capitalization of US$59 million then. It is now one of the largest banking groups in the region, and is ranked among the top 100 banks in the world, with a market capitalization of US$14 billion.

As many of the GLCs have grown into successful commercial entities operating in competitive markets both locally and abroad, there are no longer compelling reasons for the Government to own controlling stakes in these companies. The latest official statistics show that GLCs only account for about 13% of the total value-added in the economy.

Over time, the Government has progressively reduced its shareholdings in these GLCs. Government, for example, currently has a 37% equity stake in DBS and is prepared to reduce this significantly. As public assets are involved, there is a need to divest only at the right price and in favorable market conditions.

In a broader context, the general approach is to corporatize all government operations that have a bottom line, either as normal companies operating in the private sector or as state corporations accountable to the Ministers.[15] GLCs are in the former category. They operate without subsidies and are run on a commercial basis, under the same rules and regulations as any other company in the private sector. GLCs have full autonomy over operating and investment decisions. They are subject to all the rules of competition, and have to respond and react quickly to changes in the business environment. The Government believes it is not ownership that determines how well a company performs, but the quality of its board of directors and senior management. GLCs have to return what is normally expected of commercial companies. GLCs are a good illustration of how the Government's adoption of market practices has enhanced efficiency on the supply side. Market discipline is the best driver for performance. GLCs hold their own among Singapore listed companies, and know they must be world-class to survive and succeed. The three largest companies on the Singapore Exchange are GLCs. Singapore Telecom, DBS Bank, and Singapore Airlines and obvious achieved this status by being efficient and profitable.

Technology and Cluster Development

The Government plays a vital role in anticipating future opportunities and trends, making strategic moves in new areas and building long-term capabilities. Unlike the private sector, which is driven by short-term profit maximization objectives, the Government can adopt a longer-term orientation in its approach towards investments and budgeting of national resources.

The Government has launched various investment programs to build up local economic capacity and better prepare Singapore for the changes in the global economy. Two examples are:

• Cluster Development Fund

With international competition becoming more intense, there is a rising trend towards more strategic alliances among companies to share the risk of investments in new industry clusters. The Cluster Development Fund (CDF) was established in 1993 under the Economic Development Board to address the gaps in industry clusters, extend partnerships with MNCs, and accelerate development of promising local enterprises. The fund size has since grown to US$3.5 billion.

The strategic investments made using the CDF are expected to be commercially viable. To enforce discipline, investments are also expected to generate a minimum target return. Projects are undertaken on a co-investment basis with the private sector, a demonstration that the project is a worthwhile business proposition the private sector is willing to

[15] These are Statutory Boards with either regulatory or developmental functions.

commit resources to, and an acknowledgement that government officers are not well-placed to decide on their own what investments are most worth supporting for the future.

CDF projects have helped develop strategic industries with new capabilities, as well as supporting industries. The CDF co-investment with United Microelectronics Corporation, one of the largest wafer fabricating foundries in the world, is one such example. This project has attracted other industry players to Singapore, strengthened the country's core capabilities in advanced wafer fabricating process technologies and created a large number of jobs.

CDF has made co-investments with large MNCs, such as establishing a high-density polyethylene plant with Chevron Phillips Chemical International Holdings and setting up a drug discovery company with Chiron Corporation. Through its investments, CDF has also helped local companies grow into successful world-class enterprises and supported their regionalization and globalization efforts. One example is Singapore Shinei Sangyo Pte Ltd, a local design and manufacturing company, which has established operations in China and the United States to service MNC clients.

• Technopreneurship (Technological Entrepreneurship) Investment Fund (TIF)
A vibrant venture capital industry will have positive spillover and multiplier effects on the rest of the economy. Hence, the TIF was established in April 1999 as a US$1 billion fund to signal the government's commitment to developing Singapore as a venture capital hub and to serve as a catalyst to attract and grow "technopreneur startups" in Singapore.

As in the case of CDF projects, government funding is provided based on co-investment with the private sector to ensure market discipline. Investments undertaken through TIF are private sector-led, with the government playing a supporting role, i.e., the government only invests in projects that the private sector has decided to pursue.

TIF has given a significant boost to the venture capital industry in Singapore. Leading venture capital firms, such as Warburg Pincus, have been attracted to establish operations in Singapore. In addition, TIF has also made possible co-investment opportunities between foreign venture capital firms and Singapore-based companies. More importantly, the venture capital industry is an important source of funds for startup companies in new growth sectors. The government's investments in one industry have thus generated positive spin-offs in other sectors of the economy as well.

Markets in Government Agencies
Market mechanisms can be effectively integrated into government operations to foster greater entrepreneurship and innovation, and minimize inefficiencies and wastage. One such mechanism the Government has put in place is an inter-departmental charging system that makes use of the market concept to impose incentives and discipline on both the providers and consumers of internal services.

An example of inter-departmental charging is the provision of training courses for civil servants by the Civil Service College (CSC). Due to the need for customized and specialized training and the role of training in inculcating the civil service culture, these training courses could not be fully outsourced to the private sector. The CSC was started in 1971 to provide training for civil servants. It was started as a government department and was given a budget to run its courses.

Two key shortcomings with the way the CSC was organized were observed. First, as the CSC was given a budget to run its courses, it was paid regardless of demand for the courses and customer satisfaction. Second, as the courses appeared “free” to the ministries sending staff, there was, on the one hand, the danger of the buffet syndrome and, on the other hand, the effect of locking-in ministries to the CSC for their training needs.

Inter-departmental charging helped to address these shortcomings. Instead of giving the CSC a budget, the budget was split up and given to the user ministries. The CSC has to “earn” its budget by charging the ministries who send their staff for training at the CSC. There was thus immediate incentive for the CSC to ensure that its courses were meeting the needs of the ministries and that it was winning the business from the ministries, failing which it would have to wind down its operations. At the same time, the ministries became more aware of the cost of sending their staff for training and also gain greater control and choice over whether to send their staff to the CSC or to other training providers.

Benchmarking against the private sector and adopting their best practices is another way the Government has learned from the market to push for greater efficiency and effectiveness within the public sector. For example, public sector wages are pegged to the private sector to ensure that the public sector would have its fair share of national talent, while ensuring that public sector wages would track rather than lead the private sector. An increasingly important component of the wages is the variable bonus and performance bonus. This allows for wages to be more directly linked to the individual’s performance and to the performance of the economy as a whole. Public sector agencies are also encouraged to benchmark their systems and processes using standards like the ISO 9000 certification, the People Developer Standard, and the Singapore Quality Award. The Singapore Quality Award is a national award for organizational excellence, whose benchmark norms are very similar to those of the Malcolm Baldridge Award in the United States and the European Business Excellence Model. In terms of management, various private sector practices like the Balanced Scorecard, Activity-Based Costing (ABC) and Economic Value Added (EVA) are adopted. Besides these systems driving for private sector efficiency, they also sensitize public officers to the needs and pressures of private sector operations, thus helping them appreciate better how the private sector could be helped in its role as the engine of growth for the national economy.

V. WHY MARKET-BASED GOVERNANCE WORKS IN SINGAPORE

Notwithstanding the virtues of the market mechanism, excessive reliance on the market means that everything is based on affordability and income. Inequalities of both opportunities and outcome may arise from the unbridled reign of market forces. It is possible to lose sight of the broader objectives of public policy. Ultimately, public value cannot be fully captured in prices; a realistic balance needs to be struck.

In Singapore's case, this balance has been pursued over the years by using the market mechanism to distribute public goods on a user-pay basis with various levels of subsidy as appropriate, and to demand private sector efficiency in the delivery of the goods. What makes the achievement rather remarkable is the fact that the various financial levies have been carried through even though the government was running budget surpluses virtually every year for the last two decades and more. Such charges, in the presence of regular budget surpluses[16] would have been difficult to sustain in virtually any country. This has been possible in Singapore in important measure because the country has experienced sustained rapid economic growth, but there are other reasons just as important if not more so.

The Government's drive and focus on a long-range vision of development without being sidetracked by short-term populist measures that engender the culture of entitlement. The hardheaded approach of relying on markets is hence seen as a more humane one in the longer term, because it ensures efficient resource allocation and helps to generate higher growth and economic success. At the same time, the Government tempers the use of market mechanisms with care and sensitivity towards lower income groups. This is reinforced by the user-pay principle, which is seen as fair, because those who can pay less are helped more. In public housing, for example, the subsidy level is higher for smaller apartments than larger ones, while the largest ones are not subsidized at all. In education, the subsidy percentage is highest for primary, less for secondary, and least for university. And in health care, the subsidy level is higher for lower class wards and none for the highest class wards, but the level of medical treatment is the same throughout all wards.

The Government is not afraid of carrying out tough policy, but it is sensitive to those who are adversely affected by such policies. A case in point is the introduction of the Goods and Services Tax (GST) in 1994. Although Singapore was in healthy fiscal position and did not require the additional revenue from GST, it was decided to put in place the GST system to diversify and broaden the revenue base for a more balanced contribution from both direct and indirect taxes. Being in a surplus position made it easier to introduce a tough policy like GST. The GST rate was set at 3%, which is among the lowest in the world. To cushion the impact of the tax, the Government introduced an income tax rebate of US$412. This immediately reduced the tax net from two-thirds of the working population to one-third. To help the lower-income households, which were paying very little or no income tax, the Government also introduced a package of non-tax rebates to offset the effects of the GST. This package included rebates monthly rentals of HDB apartments on monthly maintenance charges. In the first year of introduction, GST was, in fact, a negative revenue stream for the Government. Similarly, the recent implementation of ERP was also net revenue negative, as road taxes were cut to offset the impact of ERP.

[16] Singapore very conservatively defines budget surplus as operating revenue less both operating and development (capital) expenditure.

Even in the implementation of popular policy measures, the Government shows particular sensitivity to the needs of the lower income groups. For example the recent income tax cuts in the fiscal year 2001 budget were designed such that lower income taxpayers benefit more in percentage savings. This reinforces the trust and confidence among the people that the Government will look after the needs of the lower income citizens when the time comes for tough policies to be introduced.

Through the years, the Government has put in place various surplus-sharing schemes to share with the people the fruits of Singapore's economic success when there are budget surpluses. These schemes are designed to ensure a rational and equitable income redistribution process perceived to be both fair and transparent. The modes of surplus sharing may take different forms according to perceived needs and usefulness at the time. For example, one important distribution mechanism government has used to share surpluses with the people is the topping up of individuals' CPF account. Different CPF top-ups through the years have had different focus and objectives. Some were focused on the elderly, others on the health care needs of the people, and some also involved giving different amounts of top-ups to different groups of Singaporeans based on age, income and housing type factors. Most times the individual citizen would have to make a minimum contribution to the CPF in order to get the CPF top-up from the Government, yet another manifestation of the co-payment principle. Another form of surplus sharing is in the provision of income tax rebates. However, as two-thirds of income earners do not pay income tax, the Government also gives out various rebates on HDB rentals, maintenance charges, and utilities in order to share the surplus with the lower-income households. The Government favors those in the lower-income brackets in surplus distribution. HDB apartment size is generally used as a proxy for the income level of the household,[17] and the amount of CPF top-up or non-tax rebates are graduated according to apartment size, with the higher amount going to those in smaller apartments. Besides CPF top-ups and tax/non-tax rebates, the Government also offered Singapore Telecom shares to the people at a discount in 1993 and 1996. In addition, loyalty shares were given free to those who held on to the shares for a certain period of time, so as to encourage Singaporeans to adopt a long-term view of share ownership.

Ultimately, Singapore's achievements are not the simple result of some grand design or master plan. They are a reflection of firm belief and resolve in governance principles like self-reliance, reward for work, and testing for results. Carried to their logical ends, these principles translate into a hardheaded, market-based style of governance that has achieved economic success, which in turn serves as a prerequisite to achieving the social goals that determine the quality of life of all the citizenry. Yet the hardheadedness has to be tempered with empathy and sensitivity, particularly towards those in the lower income brackets.

---

[17] The ideal solution would be to disburse the rebates in accordance with the financial needs of the households. However, such an approach to disbursing rebates would necessitate a comprehensive means test for individual households, taking into account the income levels, number of household members, dependents, assets owned by them etc, which would be costly to administer and be perceived as too intrusive on privacy.

VI. CAN SINGAPORE’S SUCCESS BE EXPORTED?

Singapore’s national sense of threat and its perceived need to be more disciplined than others gave rise to an implicit policy consensus that still exists. This consensus makes possible policies and cultural norms that are often misunderstood and criticized by outsiders as being too authoritarian and insufficiently democratic. However, the consensus is broadly shared across Singaporean society by leaders and citizens of all ethnic groups. While criticisms are inevitably heard, there is no serious dissent. This consensus gives rise to a set of principles that must be understood in order to understand the ways in which Singapore can be used as a model for others.

These principles fall into three broad categories; an implicit contact between the state and society; clear expectations as to the role and nature of government; and a broad agreement on the relationship between state and citizen.

• The implicit contract between state and society leads to a cluster of fundamental principles. These emanate from a strong belief in self-reliance on the part of both the state and the individual. There is a shared belief that Singapore must survive and flourish on its own, that Singapore has no natural, unqualified allies, and its history is such that no one owes Singapore anything—if Singapore wants something to happen, it must do it for itself. Every citizen must share this responsibility, accepting that there will be no free goods and that each individual must take responsibility for their own and their families' welfare. This shared view leads to the next set of principles that determine how government functions and how it relates to the populace.

Clear expectations as to the role and nature of government are well established through a cluster of principles and policies. First, since independence, the Singapore government has adhered unrelentingly to the principle of not tolerating corruption or nepotism. As a result, it is universally considered one of the worlds least corrupt states. It thwarts incentives for corruption by setting Government salaries at a high level. Second, the Singapore government is a meritocracy. A small country with a limited population must make maximum use of its human resources. The Singapore civil service operates with very strict and very competitive standards for entry. Personnel assessment and promotion decisions adhere to strict procedures and tests for merit. Standards for entry into the political arena via the dominant party are similarly high. Third, Singapore is pragmatic: only performance counts. This applies to personnel, institutions, and policies. High standards are set for institutional performance. If they’re not met, changes are made. Policies are tested and adopted for results. Popularity is not a primary consideration. Policy initiatives are monitored and, if they achieve the stated goals, they remain; if they do not, they are altered or abandoned. The result of these principles is a belief in, and the reality of, a strong, efficient government that is perceived as the engine of survival, growth, and a good quality of life. So far, government in Singapore has lived up to those expectations.

• A broad agreement on the relationship between state and citizen is based on the view that people are Singapore's principle resource. Since 1965, Singapore has consistently made investment in education a priority. Accompanying this is a strong belief in individual self-reliance and responsibility. It is understood that all citizens must take personal responsibility for their own success. There are few entitlements—just a commitment to insuring opportunities. As such, Singapore has no welfare system, and no subsidies for consumption. There are targeted subsidies for priority investments such as co-payments in education, health, and housing. A corollary to this is a focus on asset enhancement through housing, and shareholding in government-linked corporations. This leaves the question of who pays for public goods. Singapore's answer is clear-cut: where facilities or services are available to all the public, such as public transportation or parks, all the public pays through budget support. Where particular publics benefit, those publics pay the full cost through user fees. Where there are capacity limits or numerical constraints the government sets quotas and allows markets to determine how those limited supplies are allocated.

While these principles may not be perfectly implemented or adhered to, Singaporeans, with their strong sense of discipline, come as close or closer to these ideals than citizens of other nations. It's important to understand these principles because they shape the way in which Singapore thinks and acts in using market mechanisms to strengthen governance.

Imitation vs. general lessons

As a result of Singapore's unique performance, countries, organizations both national and international, and scholars around the world regularly look to Singapore for lessons in successful development. Having used Singapore to illustrate ways in which a country can effectively use the market to govern more effectively, however, it is important to add a cautionary note for those who would adopt Singapore's experience. The question is frequently asked: what has Singapore done and how can we do the same thing to get similar results?

Those who think they can replicate Singapore's success using its example as a comprehensive model will be disappointed. Context is too important. Singapore is a small island, born in crisis, with strong, clear leadership, and it has a population that is committed to hard work and that is accepting of sacrifice and change. It is too unique to serve as a comprehensive model that might be replicated elsewhere.

Unfortunately, the effort to discover the "secret" of Singapore's success sometimes causes outsiders to overlook the lessons it teaches. What Singapore offers are some of the best opportunities available to learn lessons about specific policies—what works, what doesn't, and why. Singapore is almost unique among nations in providing an opportunity to study policies and policy development. More than other countries, Singapore has been rational and consistent about policy formulation and the organizational development process. Singapore's process of choosing, testing, adapting, and modifying policy on the basis of learning is rare, perhaps even unique. This is true mainly because Singapore has a strong government that has a long-range vision of development that looks beyond short-term popularity—a vision that is committed to producing results for its citizens. The result is that policy experiments and changes are initiated with careful thought and good analysis; they are carried through (sometimes in the face of adverse short-term reactions) to the point at which results become clear. Then the final decision is made on the basis of actual results. As such, Singapore could be called a policy laboratory. Look to the details of Singapore's achievements if you want to learn from them. See them in the larger context, but also recognize that the larger context of Singapore is unique and unlikely to be duplicated.

Singapore demonstrates how effective the market can be in achieving social goals, but it does so in a unique policy environment. The market is deployed by a strong government that exercises continuing oversight and expects results. It is focused on long-term performance and not short-term satisfaction. What is striking is that the line between government and market is not strictly drawn. In many countries you get responses to questions of what is the role of the market, in the form of a list of activities that are left to the market. In Singapore that is almost never true—market mechanisms are used in close coordination and integrated with public policies and programs.

VII. CONCLUSION

Using market mechanisms to improve the quality of governance has become a popular idea in recent years. It is driven by the need to make government more efficient financially and more effective in terms of delivering a set of essential benefits to its population. The incorporation of market-driven activities in what used to be exclusively government's territory is happening in many ways in countries throughout the world, through privatization, though the private sector displacing the public by being more effective at particular activities, and by government initiative driven by the need to be more efficient and effective.

In considering how to use markets to govern better, Singapore provides valuable lessons. This is because it has one of the most proactive governments in the world in seeking market-based techniques to enhance the quality of government performance. To provide greater access to this important experience this paper has examined the ways in which Singapore has used the market and market based techniques to improve the quality of government.

This paper does four things. We began with an examination of the Singapore policy environment that results to a large degree from Singapore's unique history and situation. It is this environment of strong leadership, self-reliance and discipline, using medium and long term results, not popularity, as the test for effective policy, and small size in terms of population and geography that has facilitated a process of exploring the best ways to use the market to improve governance.

Second, it reviews the specific principles that guide Singapore's use of market mechanisms. Examining both market and government failure shows how market and government can each be used to reinforce the other's shortcomings and thereby obtain desired results.

Third, **t**he nine specific cases provided show how Singapore uses market-based mechanisms to meet public goals where it is persuaded they will perform more efficiently than government. These cases provide other countries with an important opportunity to observe and learn from carefully through out and tested policies across a range of activities from social security systems, to infrastructure management, and activities to promote economic development. It is these cases that provide the richest potential for learning and the transfer of experience.

Fourth, it concludes by suggesting that Singapore's experience shows how use of market-based mechanisms in the public service has strengthened rather than eroded the quality and influence of government. In Singapore the extent of market use in governance reflects strong government.

Many observers of Singapore's success have pondered how it might be replicated in their own country. Such hopes are illusory. As this paper points out, Singapore's overall success or development model is to an important degree, the result of its unique context and circumstance. It cannot be replicated elsewhere. Such wishes often cause others to overlook the great opportunity Singapore does offer to learn from its specific successes in finding pragmatic policy solutions to issues many countries face. This paper has emphasized the specific ways Singapore has responded to policy challenges enabling it to improve the quality of governance. It is in these specific policies that Singapore offers the world important lessons.