Privatisation of Toll Roads to Promote Malay Entry into Business in Malaysia: A Critical Review of Distribution Stance, Returns, Risk and Governance

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Abstract: The focus of the paper is on toll road privatisation. An overview of the choice of privatisation and the form it took, in promoting the entry of Malays into business, is followed by a review of other studies on privatisation in Malaysia. Given the highly confidential nature of the privatised concessions, data on ownership and likely terms have been gleaned from rating of the bonds issued, as the bond market has been the key source of infrastructure financing. From such data, the dominance of the Malay managerial class over its business class is readily evident, especially after the Asian financial crisis (AFC). The likely impact of toll road privatisation on the stance of distribution is also examined. As concessions are still awarded on a negotiated basis, the issue of rent-seeking is also explored. Uncertainty and variability in the financial performance of the concessionaires can be seen from the spread and deterioration in credit of the issuers, attesting to the greenfield nature of the projects undertaken or due to differences in gearing or in the support and subsidy enjoyed from the government. The separation in ownership and control, either due to continued ownership by state-owned enterprises (SOEs) or widely held public listed companies (PLCs), has increased the risk of expropriation by those who exercise management control.

Keywords: Affirmative action, governance, infrastructure privatisation, rent-seeking, risk-return analysis
JEL classification: R42, O17

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1. Introduction

This paper deals with infrastructure privatisation and its role in promoting Malay entry into business in the specific toll road sub-sector, and a companion paper will explore the situation in the power sector. The key focus of the paper is to examine not only the form Malay entry into business has taken but also the form and shape privatisation has taken – in bidding for concessions and in competing for customers, on the support and subsidy accorded, on the return and risk profile of the privatised projects, on the form ownership and control took, on its distributional implications for the country and on the extent to which it led to a separation between ownership and control and on its likely impact on governance.

Privatisation of state-owned or public enterprises (SOEs) and of government provided services was introduced to accord preferential access to Malays in such privatisation exercises (so as to offset the adverse impact of the relaxation of the Malay equity ownership conditions imposed until end-1986 on private enterprises), and improved access of non-Malays for places in educational institutions (given continued restrictions on their entry into public universities), as well as to increase overall economic efficiencies and strengthen government finances (which had been severely affected by the government's program of aggressive borrowing and spending to support growth and to restructure society in the face of weak external demand of the late 1970s and early 1980s) (Thillainathan & Cheong, 2016).

With respect to its race-based affirmative action (AA) agenda, the government resorted to privatisation for three key reasons. Firstly, the targeted or required divestment of ownership of SOEs or of award of concessions[1] in favour of Malays or Malay Trust Agencies had less of a disincentive effect on private investment and economic growth. Secondly, the building up of a Malay equity stake through privatisation (through a strategy of partial divestment), entailed a lower capital outlay as it was not subject to mandatory general offers, as was more likely to be the case with the takeover of private companies. And finally, privatisation of a SOE or of a public sector undertaking, offered Malays more opportunities to operate and manage a business and hence to build up a Malay managerial or business class, whereas investment of a similar stake of 30% or less in a private enterprise may have remained more passive in nature. With this approach, there was also less of a constraint on borrowing and the rate at which such borrowing could be raised. This was unlike the severe financial difficulties encountered by the first generation of Malay businessmen, such as Halim Saad, Rashid Hussain and Azman Hashim from their over-gearing, both at the project as well as at the shareholder level. Even the current generation of Malay businessmen, including Syed Mokhtar, will continue to be exposed to financial risk from their over-gearing.

There was a change in the stance of infrastructure privatisation from creating a business class to creating a managerial class only after the Asian financial crisis (AFC), when the privatised entities owned and operated by a class of Malay businessmen

[1] The award of concessions was on a build-own-operate (BOO) or build-own-transfer (BOT) basis or on a build-lease-transfer (BLT) basis with effect from 2006 after the launch of the government's Private Finance Initiative.

became bankrupt and had to be bailed out and taken over by government entities, now to be run by a class of Malay managers. Managing these entities on a commercial basis is thus being accorded a higher weight now than ownership consideration in such privatisation exercises.

Privatisation continues to play a key role in highway construction as well as power generation, pre- and post-AFC. With respect to the mass rail transit (MRT), all three networks in the Klang Valley that were developed on a privatised basis went into bankruptcy and had to be restructured and taken over by a SOE, Prasarana Malaysia Berhad, in the immediate post-AFC period, for reasons set out elsewhere (Tan, 2008; Thillainathan, 2011). Now the new MRT networks as well as the ECRL (East Coast Rail Link) are or being developed, financed and owned by two SOEs, Danainfra Nasional Berhad and Prasarana, with only the concession to operate likely to be awarded to a private sector entity. This model is also being increasingly adopted with respect to water treatment and distribution over the last 10 years or so (Tan, 2012; Thillainathan, 2021b). Nearly all the sea ports have been privatised, with a Malay businessman emerging as the dominant player. Airports have also been privatised with majority ownership still residing in a SOE, and which continues to enjoy a monopoly position.

The key role of infrastructure privatisation and individual sub-sectors within infrastructure, that has been playing in the Malaysian economy can be gauged by using bond or private debt securities (PDS) outstanding, as a proxy variable of the level of economic activity (see Section 3). Of the total PDS outstanding of RM712 billion in November 2019 (representing about 50% of nominal GNP vs bank loans which stood at about 120%), the PDS share of the infrastructure sector was close to RM300 billion or 43.6% of the total. Within the infrastructure sector, the PDS outstanding of SOEs involved in investing in the rail sector, Danainfra Nasional Bhd and Prasarana Malaysia Bhd, was about 32% and that involved in the water sector, Pengurusan Air SPV Bhd, was 6%. The share of the other sectors are power: 27%, toll road: 19%, Telco: 7% and others: 8%. Given their relative size and the changed character of the rail and water sectors, the focus of our enquiry is on the toll road sector in this paper.

2. Literature Review of Key Malaysian Studies on Privatisation

Malaysia has engaged in a big way in the corporatisation and privatisation of SOEs as well as in the privatised provision of infrastructure facilities and services. However, there are only a few studies that have been carried out on the Malaysian experience with privatisation. To date the most comprehensive and critical studies are by Tan (2008, 2012, 2015). The key focus of his studies was to enquire into the impact of privatisation on economic efficiency, private investment, public expenditure as well as on entrepreneurship versus rent-seeking. His 2008 book dealt with these matters in three key SOEs,[2] as well as the development and operation on a privatised basis of the

[2] The three SOEs are the Malaysian Airline System (MAS), Proton (an automobile manufacturer) and Indah Water (the privatised concessionaire of the sewerage system).

MRT system in the Klang Valley. In his 2012 article, Tan compared, based on available data, the relative performance of the privatised segment of the water industry in relation to that segment of the industry which was still state owned and operated. In his 2015 paper, Tan looks at the preliminary evidence provided by water privatisation for the creation of Malay and non-Malay businessmen "through the allocation of rents", but the data examined are not based on the actual concessions awarded but on the number and value of the construction related contracts awarded by the privatised water and sewerage projects in the state of Selangor. The paper contends that "rent-seeking is driven by changes in social formations and specifically the emergence of a Malay middle class that needed to be politically accommodated" (p. 297).

Pua (2011) has also written on the privatisation of infrastructure activities, reviewing two toll roads, three water concessions and power generation (but in general terms), with respect to the richness of their concession agreements (CAs), the extent to which they are serving public interest and the scope and cost to the government of terminating the CAs. There are a few key articles on the role of the bond market in infrastructure financing (Maybank Kim Eng, 2019; Yeah et al., 2007, 2011). These provide a complete listing and account of bonds issued without fully addressing the problems of maturity and currency mismatches. Jomo and Gomez have written extensively on rent-seeking (Gomez & Jomo, 1997; Jomo & Gomez, 2000; Jomo & Tan, 2011) but not directly on rent-seeking in infrastructure privatisation. Tan's (2015) analysis of rent-seeking does not use project level empirical data (as such data are difficult to obtain), but on *a priori* reasoning based on a multidisciplinary approach. To the extent the studies referred to above deal with privatisation, the focus has been on the lack of open tender in the award of concessions or on the failure to open up the market to competition, which had led to an underpricing of the assets privatised or to the earning of abnormal profits or rent by the concessionaires.

There have also been many studies undertaken on the extent of separation between ownership and control as well as on weaknesses in the governance mechanisms to explain the incidence of corporate scandals amongst PLCs and government-controlled companies in the country (Claessens et al., 2000; Thillainathan et al., 2003; Vighneswaran & Gomez, 2014), drawing on certain path breaking works on corporate governance (Faccio et al., 2001; Jensen, 1988; La Porta et al., 1998; Schleifer & Vishny, 1997). But these studies have not examined the risk or extent of exposure of Malaysian privatised projects to such scandals.

There are many studies on the affirmative action (AA) program in Malaysia (Thillainathan & Cheong, 2016) but none have focused on the role of infrastructure privatisation in promoting the government's race-based AA agenda, and its likely implications for the stance of distribution in the country. One line of enquiry in the study of affirmative action as well as ownership and control is the rise of SOEs in dominating the commanding heights of the Malaysian economy (Gomez & Jomo, 1997; Gomez et al., 2017; Hassan, 2012). With respect to infrastructure privatisation, no studies have examined how the Malay business class has fared in vying for these projects as compared to the SOEs which are clearly in the control of the Malay managerial class (or more accurately of the Malay political and administrative class).

3. Sources and Use of Data

Information and data on the ownership and operation of an activity (whether it is an enterprise or a project), which is being undertaken through the award of a concession to a private sector entity are not readily available, given that concession agreements are deemed as classified documents in Malaysia. There is thus a problem not only in identifying what and how many activities are being undertaken on a privatised basis and who their concession holders are, it will be almost impossible to obtain any information on the terms on which such concessions have been or are being awarded, even to a public listed company (PLC). Note also that, though a PLC is subject to more stringent disclosure requirement, segregating its data by activity is not easy, if it is engaged in diverse activities.

Interestingly, as infrastructure projects typically have a long gestation period and a long life span, they are funded, almost wholly, through the bond market and seldom through bank borrowings. Fortunately, the data on bond issues and on bond outstanding by issuers are also in the public domain.[3] That being the case, we will be using the bond market data as a key source of data not only to identify privatised infrastructure projects by sectors, but we will also use such data to make comparison between projects within sectors and between sectors. Where there is a problem in using such data to make a comparison over time due to a need to adjust for price level changes, as in the case of any financial data on fixed assets, we will, as far as possible, indicate the possible qualifications required to our findings.

Within a sector, we can always use a physical measure of capacity to make a comparison on the scale of operations of different players. In the case of the toll road sector, we can use km of roads or average daily traffic volume as a measure. But there are weaknesses even with the use of such physical measures. However, we will use the available data on the infrastructure bonds issued and the rating assigned, not only in identifying the likely size and scope but also in analysing the extent and success of privatised infrastructure projects, and the factors which have made for their success or failure. Where necessary, the required qualifications to the use of this proxy variable as a source of the data has been made.

4. Distributional Consequences of Toll Road Privatisation – An Overview in the Malaysian Context

Under Malaysia's ambitious social engineering program launched in 1971, there was a considerable expansion in the use of restrictive licencing practices to promote the entry of the indigenous community, and in particular the Malays, into business, such as through the issue of approved permits (APs) to import goods or licences to go into business. The government also attempted to spearhead the entry of Malays into the

[3] The data used in this paper on bond or PDS issued and outstanding in November 2019 was downloaded from Bloomberg. Where necessary, it has been cross-checked and verified against the data on bond issuance set out in Maybank Kim Eng (2019), Yeah (2007, 2011), various credit reports released to the Press by the Rating Agency of Malaysia Berhad (RAM), and Malaysian Rating Corporation Berhad (MARC) as well as a few key bond analysts and fund managers.

modern sector of the economy, i.e. into commerce and industry, by setting up state-owned or public enterprises (SOEs) to be managed by Malays. This attempt was a failure. Thereafter, the government embarked on a takeover of foreign-owned tin mines and plantations. At the same time, it also required a company, which sought to raise capital through the public equity market, to set aside up to 30% of any new issues, to be reserved for Malays. Until 1996, the new issues were also made at a massive discount to the market price. Companies which were venturing into manufacturing were also required to reserve up to 30% of their capital for Malays, so long as they planned to sell more than 20% of their output to the domestic market. Equity ownership conditions were relaxed only from 1986 when the economy crashed. It was then that the government turned to privatisation to minimise the adverse impact of race-based affirmative action agenda on private investment and economic growth (Thillainathan & Cheong, 2016).

A key goal of the paper is to examine the likely impact of toll road privatisation on the direction of change in the state and stance of distribution in the country. Based on the toll road sector findings, privatisation has indeed led to an increase in Malay participation in the modern sector. And privatising a public enterprise or awarding an infrastructure concession to a Malay did not create the same disincentives (as the initial ownership was with the public sector). However, as the SOEs now dominate ownership and operation of privatised projects, the problem of the public sector crowding out the private sector has emerged as a key issue.

Malay ownership and control of the corporate sector, based on nominal value, is still below the initial 30% target set back in 1971.[4] However, of the toll roads currently in operation, 86% is Malay owned or managed (Table 1). Of this, almost three-fourths are SOE owned and Malay managed with only the balance owned and managed by Malay businessmen. If concessions under development are included (Annex Table 1), the share of Malay owned or managed toll roads comes down to 74%, with the Malay managed SOE share still at 71%. With respect to management, the government's aggressive preferential policy on education in favour of the Malays from 1971 has ensured an adequate supply of Malay professionals to manage these privatised enterprises, who are partly attracted by the higher salaries they receive and the preferential treatment they are accorded by the regulators.[5]

Initially, the dominant player in the toll road sector was Halim Saad (HS). He exercised indirect control over UEM Bhd which owned, through its wholly-owned subsidiary PLUS, over 50% of the toll roads operated. In 1997, HS only had a 23.5% interest in Renong Bhd which in turn had a 37.1% interest in UEM. UEM, which gave investors a direct punt on its rich toll road business, was in fact owned 54.2% by foreign shareholders (Thillainathan, 2007). UEM and Renong were doing so well that in the 1990s, these two companies emerged (within a few years), to be among the top ten

[4] The equity ownership of under 30% has been gleaned from recent Malaysia Plan documents, which make less reference to race-based data. Note that from available data in the public domain, Malays have fared much better on the educational and employment front.

[5] No data on employment was collected. With Malay employment around 90% in the public sector and GLCs, it is not unreasonable to take employment at this percentage even in the privatised projects.

PLCs listed on the Malaysian stock exchange. Both the companies fell from grace very quickly and had to be bailed out by a SOE, Khazanah Nasional Bhd, the sovereign wealth fund, in the aftermath of the 1997 Asian financial crisis (AFC) due to a massive governance scandal (see Section 9), and over-leveraging. This marked the dawn of a new era with the dominance of a private sector led Malay manager supplanted by one from the public sector. Equally (if not more importantly), a majority stake of PLUS was also acquired by the Malay controlled public sector. On the other hand, when PLUS was privately owned, Malays only had a minority stake.

Not unexpectedly, with the emergence of entities like Khazanah, complaints about crowding out by the SOEs have been increasingly voiced by Malay businessmen themselves. This is partly because they may be at a severe disadvantage versus a SOE. To a SOE, competing for a concession with the private sector has not been a challenge and more importantly, raising the required capital or credit has been even less of a problem.[6]

It is also interesting to note that the number of Malay business entities and hence businessmen, who have benefited from the award of concessions in the infrastructure sector, are only a few. The number in the toll road sector, for instance, is no more than 10. In the case of some of these entities, each beneficiary may hold more than one concession. As the number of beneficiaries are very few, but the value reaped can run into the hundreds of millions or billions, the resulting dramatic increase in wealth inequality can be challenged on equity grounds, especially when such wealth accumulation has been produced by the restrictive policies of the government and not by an outburst of innovative activities. This may than provide a case for these privatised projects to be owned and operated by the public sector.

One can also raise an issue, on efficiency and equity grounds, with the government's decision to generously support the aggressive entry of PNB (the National Investment Corporation set up to promote Malay savings and investment in the equity market), into the toll road sector (Annex Table 1). The only other comparison one can draw is the equally generous initial support that the government had extended to PLUS in its venture into the highway business back in the late 1980s and 1990s,[7] as well as the support it is now extending to WCE Bhd, in building the West Coast Expressway (WCE). But both PLUS and WCE are or will be operating highways on a national scale. On the other hand, both the SUKE and DASH elevated highways are, in comparison,

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[6] This is glaringly obvious in the airline sector. The interest rate that the privatised Malaysian Airline System (MAS), as a SOE, has been paying on its loans, as well as the size of the unsecured credit it has been enjoying from its creditors (e.g. with respect to the purchase of aviation fuel), has been better than what Air Asia has been able to command. And this despite the repeated bailouts of MAS after its privatisation in the early 1990s. MAS has also been favoured by the government takeover of its non-performing loans, which amounted to RM6 billion, as part of its major restructuring in 2002 (Wong, 2011). But since that rescue from its multi-billion debt load, MAS has had to be bailed out at least twice. And by late 2019, MAS was again requiring another bailout. With the outbreak of the Covid-19 pandemic early in 2020, the aviation industry the world over including MAS and Air Asia, are caught in the throes of bankruptcy. Note that Air Asia has always complained fiercely against the price it had to pay, as well as the quality of the airport services it was being provided by Malaysian Airport Holdings Bhd, which is a sister company of MAS, as both have the same parent, namely Khazanah Nasional Bhd.

[7] This had benefited the Malay elites, as well as a lot of non-Malay, including foreign, shareholders.

much shorter, serving the highly urbanised Klang Valley, which may already be over-endowed with highways. Further it appears that the cost of building the 25km SUKE highway, going by present estimates, is RM8.7 billion, significantly higher than the estimated cost of RM6 billion of building the 233km WCE. The obvious question is, can the government justify the generous support it is giving not only to PNB but also to the well-off urbanites living in the prosperous Klang valley.

5. Toll Road Privatisation and Rent-Seeking

Privatisation in Malaysia had an avowed goal to create a Malay business class. By the reckoning of some, and in particular of Tan (2015), who has researched and written most extensively on the subject, privatisation has failed to create such a class because the rents that were allocated was not performance based or time-bound but was instead used by the political class to pitch for or retain political power. Tan's analysis of the government's failure to create a Malay business class is based on the privatisation case studies contained in his book (Tan, 2008) on MAS, Proton, Indah Water and MRTs and in his paper (Tan, 2012) on the water industry. Given the characteristics of the industry/activity chosen for privatisation (such as scale, capital intensity, pace of innovation, financing structure and/or pricing), it is clear that the beneficiaries accorded the favoured treatment were not chosen because they had the potential to graduate into successful businessmen, but because they are able to serve as clients/partners in the patronage system and who are willing to share the rent captured in turn with their political patrons in support of each other to prop up the system. A reading of Tan (2008) and Thillainathan (2011) should make it clear as to the underlying factors that really made for their failure. But more importantly, a system based on crony capitalism and money politics was bound to fail as the attempt to create businessmen, Malays or otherwise, through such means will encourage rent-seeking and rent-sharing activities and not necessarily to the pursuit of productive economic activities.

Tan has attempted an analysis of the extent and size of rent-seeking in infra-structure privatisation. The evidence he offers is still preliminary and not based on an analysis of privatisation concessions as such but on construction-related contracts awarded in certain water and sewerage system projects. The critical problem of rent-seeking manifests itself in the award of construction, maintenance and procurement contracts as many of these contracts continue to be awarded on a non-competitive basis. Interestingly, with respect to such contracts, Tan (2015) has pointed out that, contrary to popular perception, the majority of the contracts (in value terms) entered into even by the public sector, has been awarded to Malaysian ethnic Chinese contractors, based no doubt because they are able to perform and deliver, especially so with respect to more sophisticated jobs. Of the contracts awarded to Malays, it is not unusual for these contracts to be sub-contracted to Chinese contractors. In the review of such contracts, Tan came across at least two glaring cases of rent-seeking, with the Malay contractors making a clean profit of 8% and 15% of the contract value,[8]

[8] The size of rent earned, in percentage terms, has been calculated from raw data contained in Tan's study.

by retendering the contract in their entirety to Chinese contractors (p. 314). The award of contracts on a non-competitive basis generates captive rent but as to how that rent is shared between a patron and client remains a guessing game.

We have noted that with respect to privatisation, to the extent there is a lack of open tender in the award of concessions or there is a failure to open up the market to competition, this had led to an underpricing of the assets privatised or to the earning of abnormal profits or rent by the concessionaires. The cost imposed on the economy from such rent-seeking activities, as analysed[9] and documented by Thillainathan and Cheong (2019), may have become even more onerous from Malaysia's active use with effect from 2006 of the private finance alternative to build, lease and transfer (BLT) its infrastructure facilities and premises, as the interest rate charged was almost thrice as high as the yield on government bonds of equivalent maturity and as the price of the construction contracts were also well above the market price, thanks to their continued award on a non-competitive basis.

Rent-seeking has also been an issue in Malaysia with toll road privatisation. This has been so, as the concessions are continuing to be awarded on a non-competitive basis, toll road pricing is regulated based on the principle of full cost recovery and as it is not unusual for construction and maintenance contracts to be awarded to a related party. Rent-seeking becomes even more of an issue where the government extends support and subsidy to the concessionaire. The type of support and subsidy extended has been highlighted in the paper and in particular in the notes to Annex Table 1. However, with Malaysia shrouding its various concession terms in secrecy, it is often difficult to estimate the size of a concessionaire's rent. There can also be considerable variability in the rent earned, either due to variation in the terms of the concession, including in the support and subsidy accorded by the government or differences in the toll road potential. The spread and deterioration in the credit rating of the concessionaires, as discussed more fully in Section 7, attest both to these differences, as well to the greenfield nature of the projects undertaken.

The shareholder of PLUS, namely UEM, was the only concession holder (based on information in the public domain), which had to be restructured but as set out in the paper, this had nothing to do with its viability. As is obvious from a reading of notes to Annex Table 1, the PLUS concession had been awarded on highly favourable terms. However, there are concessions, such as those of LEKAS and Senai Desaru, which appear to be still surviving and have not gone into bankruptcy, despite the massive downgrading in their bond credit rating. This suggest that, the return or rent earned by the shareholders may not be that low, as a result of upfront or side profits earned from construction and maintenance contracts and debt holders may be protected by their seniority over a lower layer of support loan from the government or a government-owned financial institution.

Equally interestingly, our analysis of the ownership data show that in recent decades, the overriding goal of the government in infrastructure privatisation has been in promoting Malay entry into business, either as managers or as businessmen, without

[9] The analysis in this paper is based more on the neoclassical framework, such as that of Krueger (1974).

paying as much attention as to whether ownership is ultimately with the public or private sector. Where the "privatised or commercialised" infrastructure activities are owned and operated by Malay managed SOEs, rent-seeking can still remain a problem. Unless the award of concessions is opened up to competition, the Malay managerial class may still engage in rent-seeking to enrich itself at the expense of the rest, by rewarding itself through high pay or stock options (Minhat & Dzolkarnaini, 2019).

The discussion in this section was on the use of captive rents. With respect to the award of privatisation concessions on a non-competitive basis, one can say in general that it has not been used to create a Malay business class. It is truer instead to say that, the process has been captured by crony capitalists and money politicians to enrich and perpetuate themselves in power. With respect more specifically to the toll road sector, we note that other instruments have also been used to generate captive rents. The favoured concessionaires have either shared these rents with their political patrons or have been using it to remain in business. Only a handful of Malay businessmen have been created and it is not clear if they would have been able to survive and remain in business in the absence of such rents. Those who have grown their business have done so only because they have continued to be favoured with the award of more captive concessions and hardly any have ventured abroad, with the possible exception of one, a non-Malay managed widely held PLC.

6. Review of Ownership and Control

The toll road projects have been undertaken over a long period of time. The development of PLUS started from the mid-1980s (whereas the development of the 1st generation independent power producers (IPPs) started only in the mid-1990s). The highways of Gamuda, as well as a few others, commenced in the mid or 2nd half of the 1990s. The other highways which are now in operation were developed from the year 2000. And there are a few which are still under development, namely the West Coast Expressway (WCE), the two elevated highways of Perbadanan Nasional Berhad (PNB),[10] SUKE and DASH, as well as the extensions that both Ekovest and Maju Capital Berhad are putting up.

In the toll road sector, as set out in Table 1, PLUS is the dominant player, now a joint venture company (JVC) between Khazanah Nasional Bhd (KNB) and the Employees Provident Fund (EPF), two SOEs. This JVC is the dominant player by reference to any variable chosen, including with respect to its share of km of toll roads operated (which is now 55%). This is readily evident from the five concessions it owns and operates.[11] Three other SOEs account for another 8.2% share as follows: PNB, which owns six concessions, 5%, Jambatan Kedua Sdn Bhd (the owner and operator of the

[10] PNB, the National Investment Corporation, is the government's leading agency to achieve its race-based equity ownership target. It operates in the toll road sector through its wholly owned PROLINTAS.

[11] PLUS, through its individual subsidiaries, is a concession holder for Projek Lebuhraya Utara-Selatan (or Plus), Expressway Lingkaran Tengah (Elite), Linkedua Malaysia (Linkedua), Konsortium Lebuhraya Butterworth-Kulim and Penang bridge.

Table 1. Ownership by kilometre (km) of toll roads by groups

	SOEs	Malays	Non-Malays	PLCs widely held	Total
Toll roads by km	975.3	359.0	37.5	181.6	1553.4
% share	62.8	23.1	2.4	11.7	100.0

Sources: Computed from primary market data on bond issues as displayed in Bloomberg (November, 2019), supplemented with data from publicly available credit reports of RAM and MARC, discussions with various fund managers and analysts and also cross-checked with data in Maybank Kim Eng (2019).

second bridge to Penang), 1.55% and EPF 1.63% (excluding its stake in PLUS). Malay enterprises own 23.17% of km of toll roads operated. Widely held PLCs but under Chinese management control, own 9.42%, with the balance 2.37% majority owned and controlled by the Chinese. But note that of these 12%, about half entailed an ownership sale of concessions initially held by Malays.[12]

With respect to control, a close examination of Table 1 reveals that in the toll road sector, there is a considerable divergence between ownership and control or between financing and management. Of the operating toll roads, only about 25% of the assets are owned and managed or controlled by the same party. With respect to about 63% of the assets, (majority) ownership rest directly or indirectly with the government whereas control is exercised by those who manage the toll roads. And of the balance 12% of the assets, their ownership resides in widely held PLCs but control is exercised by the managers of these PLCs.

7. Toll Road Privatisation: Risk and Return Analysis

7.1 Analysis of Financial Data and Debt Rating

We do not have the required data to calculate the project internal rate of return (IRR) of the toll road projects on their commercial operation dates (CODs). However, we have data on the weighted average cost of capital (WACC) used in the valuation of toll roads, including of PLUS, which account, as noted, for about 55% of toll roads by km. We can infer from the WACC the return received or expected to be received by buyers and sellers of toll roads. PLUS commenced its COD in 1994, was publicly listed as a special purpose vehicle (SPV) in 2002 and was delisted and privatised thereafter in 2011. The WACC or discount rate at which PLUS was delisted some 17 years after its COD, was 9.02–9.4% pa. At its equivalent global rating of A3 (Annex Table 2), it was able to issue bonds then at a coupon of 4.2–5.75% pa. This implied that the equity IRR that

[12] Note that Malay ownership of shares in companies was only 2% in 1970 and presently it is still below 30%, a target set to be realised by 1990. Of the new concessions under development, WCE is the biggest which is Chinese controlled. After taking into account these new developments, toll road ownership in percentage terms, with the current ownership in brackets, will be as follows – SOEs: 52.9 (62.9); Malays: 21.37 (23.17), Chinese: 16.31 (2.37) and widely held PLCs: 9.42 (11.72).

Table 2. Profitability of selected privatised projects in toll road sector for selected years (%)

		Equity IRR	WACC	EBIDA margin	EBIT margin	PBT margin
PLUS Bhd	1997-2001			79.4	66.6	5.8
PLUS Bhd	2006-2009			86.0	74.0	53.1
PLUS	2002-2011	42				
PLUS	post-2011	50	9.02			
SILK	2017	12	12			
Litrak	2007-2010				75.6	47.3
Kesturi	2016	12 to 27	8			
IJM sum of parts valuation		12 to 27	8-9			

Notes: (1) The equity IRR can be calculated, where the concession is held until expiry, by taking the stream of earnings before depreciation but after payment of interest and taxes. In Table 2, based on available data, it has been calculated assuming the concessionaire liquidates its investment at the IPO price or through a block sale of shares. Alternatively, it has been inferred from the weighted average cost of capital (WACC).

(2) With respect to the calculated profit margins, the ratio to revenue of PBT (or profit before tax), EBIT (or earnings before interest and taxes) and EBIDA (or earnings before interest, depreciation and amortisation) are used in assessing a privatised project's performance, especially if there is no data to calculate the project or equity IRR, as is so with many toll road projects.

Sources: PLUS Expressway Bhd (2002, 2010), Yeah et al. (2007), *The Edge Markets* (2017), Pua (2011) and interviews with analysts (2020).

KNB and EPF,[13] expected to earn, as the JV partners, was about 50% pa (Table 2), as the acquisition was debt financed to the extent of 90% or more and issued at an average yield to maturity (YTM) of about 5% pa.

While the JVC's expected return in the post-delisting period is about 50% pa, note that the actual return KNB and EPF earned from their initial investment in PLUS from the time of the IPO in 2002 to 2011, works out at 42% pa.[14] Since its delisting, the JVC fully valued the PLUS concessions, borrowed RM34.35bn and injected capital of RM3.5bn.[15] What this means is that, with delisting, the sums cashed out from PLUS

[13] In conducting its Valuation (or Discounted Cash Flow) Analysis to arrive at the offer price of RM4.56–5.24 per share to privatise the Malaysian domestic assets of PEB (PLUS Expressway Bhd), the discount rate used by Goldman Sachs, advisor to the independent directors of PLUS, ranged between 8.4–9.4% (PLUS Expressway Bhd, 2010, p. 229). As the actual price offered and accepted was RM4.60 per share, and as the size of PEB's non-Malaysian assets was insignificant, we have inferred that the discount rate at which it was privatised was 9.40%. The independent advisor to the minority shareholders of PLUS, Arab Malaysian Investment Bank, arrived at a price range of RM4.56–4.90 per share based on a discount rate that ranged between 9.02–9.50%, based on a sum-of-parts valuation of the PEB Group (PLUS Expressway Bhd, 2010, pp. 51-54). Note that for yearend 2009, the domestic toll roads of PLUS generated 99% of its revenue.

[14] The JVC privatised PLUS in 2011 at a valuation of RM23bn, RM17bn over its book value and RM10.5bn over its market value on its listing in 2002. Its enterprise value in 2011 was RM34 billion, as the debt then on its balance sheet was RM11bn. The share of disposal that accrued to shareholders other than UEM, its parent KNB, which was also a shareholder of PEB and EPF, was RM10.9bn (PLUS Expressway Bhd, p. 225).

[15] Of this investment of RM3.5bn, RM3.35bn was by way of RCULNs or redeemable cumulative unsecured loan notes.

amounts to RM26bn, as share capital had been reduced by about RM2.5bn to RM3.5bn and borrowings was increased from RM11bn to RM34.35bn.

From the available data on WACC, we can also estimate the profit or loss outcome of other toll road concessionaires. For the more successful concessions, the WACC has been estimated at 8% in the post-2010 period (as in the case of EPF's acquisition of a 40% stake in Ekovest in 2016), and that of the less successful concessions has been estimated at 12% (as in the case of PNB's acquisition of SILK in 2017). From a review of recent valuation by investment bankers of stakes in mature toll road concessions, it is also clear that investors were or are using a WACC or discount rate of between 8–9%, to buy or sell a stake in such mature concessions.[16] The rating, on a global scale, of the more successful concessions is BBB3. As the YTM of the BBB3 PDS papers has ranged between 6–7% pa during much of this period, this will correspond to an equity return of between 12–27% pa, depending on whether the share of equity in total capital employed is 10 or 20%.

Let us now look at the less successful concessions. The price at which SILK was acquired by PNB in 2017 (some 16 years after its COD in 2001), was at a discount rate or WACC of 12%. The use of the higher discount rate, after accounting for rating and size, means that the valuation at which the previous owner divested its interest in the SILK concession was a lot lower than what was being paid for or being expected by the owners of the more successful concessions. It may not be unreasonable to infer that PNB's equity return expectation may not differ significantly from the WACC of 12%. There are concessions that may even be deemed as unsuccessful. One such concession is LEKAS. It has suffered an eleven notch downgrade from its initial rating (which was, on the global scale, one notch below the average of the toll road rating of BBB3). The only inference one can make is that this concession is loss making and would require a substantial write down of its carrying value, including that portion which is debt financed. Senai Desaru, with the same initial rating as LEKAS, has suffered a five notch downgrade. This is also a loss making concession and may require a significant write down of its carrying value if growth in traffic volume remains lacklustre as it has been and is expected to be. In the case of Max I, there was also an eight notch downgrade in its rating but this was due to "several unexpected advances to the ultimate shareholder which led to an erosion of cash reserves and breach of sukuk terms" (Maybank Kim Eng, 2019, p. 14), and not due to poor traffic volume, as is certainly the case both with LEKAS and Senai Desaru.

With respect to new concessionaires, we can expect them to discount their expected cash flows at a higher discount rate, i.e. to ask for a higher return for investing in a greenfield toll road project to compensate them for the higher risk. At the project

[16] The author has reviewed the sum of parts valuation by investment banks, brokerage houses and/or bond fund managers (such as RHB, Affin Hwang Capital, HLIB Research and/or Opus), of a few toll road concessions of PLCs which are also involved as the owner and operator of such concessions. These PLCs include IJM (which is the owner and operator of NPE, Besraya and Lekas), Gamuda (which is the owner and operator of LDP, Kesas, Sprint and the STORM tunnel) and EKOVEST (which is the owner and operator of Duke 1 and 2). In all these valuations during the second decade of this millennium, the discount rate used ranged between 8–9%.

level, we cannot be certain on what the expected equity return will be for such a riskier investment. The variability in the risk and return related to the greenfield projects undertaken in the toll road sector is readily evident from the spread and deterioration in credit of the debt issuers in this sector (Annex Table 2).

We have noted that we only have some selected data to calculate the IRR of infrastructure projects. But we can also rely on profit margin as a supplementary measure of the richness of a privatised concession. The key profit margin measures include EBITDA (earnings before interest, tax, depreciation and amortisation), EBIT and PBT (profit before tax) margins, but the required data will be more readily available to those projects which are PLC owned, which is the case with PLUS and LITRAK. From the available data, as set out in Table 2, it only required a few years in operation for these two projects to generate a rich PBT margin. And this after fully providing for the high amortisation charge and interest payment that is typical of a toll road project that is highly capital intensive and that is equally highly geared. With respect to PLUS for which we have more data, the PBT margin was much higher with time than during its early years of operation. This is to be expected, not only because of the adverse impact of the 1998 AFC on travel but also because of the time required to develop the complementary facilities to support the increased demand for inter-state and inter-city travel. Note that in the early years when commuting was still low as well as debt and interest rate was high, interest payment as a share of revenue was 61% vs 21% in the latter period.

New toll road concessions have not been subjected to competitive bidding but has been awarded on a negotiated basis. The government has to pay compensation if the periodic increase in the toll rate, as provided for in the concession agreement (CA), is disallowed for any reason. However, while the tenure of the toll road concession was about double the length of that of an IPP (independent power producer) or WTP (water treatment plant), the toll road concessionaire was exposed to the risk of any shortfall in the demand for road use.

With respect to many toll road projects, not all the assets owned and operated have been developed and paid for by the concessionaire. And many toll road projects have also been given a government support loan (GSL) on debt servicing terms which were much more favourable than, or subordinated to, the terms applicable to their commercial loans, with respect to such key variables as loan tenure, interest rate charged (which was often significantly below the market rate), and subordinated repayment terms. We set out the support and subsidy received in the notes to Annex Table 1 for a few key toll road projects including PLUS, LDP, SUKE and WCE.

7.2 Analysis of Variability of Return and Risk Based on Initial and Current Rating of Debt

The privatised projects considered above may be few but they are key projects in the infrastructure sector. There are a lot more privatised projects in the toll road sector. To the extent this is the case, are the inferences on returns based on the few cases considered likely to be applicable to the other projects in the sector?

The performance of the toll road concessionaires is highly variable. This is readily evident from an examination both of the initial and current rating of the toll road concessionaires. With respect to current rating based on the international scale, as

set out in Annex Table 2, about 21% of toll road issuers had a rating equivalent to the sovereign rating of A3. However, four out of the 24 issuers (or 17%) with the A3 rating carried a government or bank guarantee. Only an additional 33% of the toll road issuers continued to receive a triple B investment grade rating. About 8% were unrated issues. This means that no less than 38% of the toll road issues are currently non-investment grade. More interestingly, the deterioration from the initial rating was also very apparent for toll road issuers. For instance, the share of non-investment grade issues, based on the initial and current rating, more than doubled from 17% to 38% for toll road issuers. The share of toll road issuers with a triple B investment grade rating declined from 54% to 33%.

It is clear from the findings that there is a great deal of variability in the rating of toll roads. While the profit margin of PLUS and LITRAK was on the high side, one can only speculate, based on the analysis of the rating numbers, that many toll road issuers are unlikely to be enjoying such a high margin. The share of the A3 rated issuers appears to be high for toll road issuers. But this is based on the government or bank guarantees they carry. In respect of the bank guarantees, the willingness of the banks to issue the guarantee may mean that these issuers may be enjoying government support with respect to at least part of the loans raised as well as in acquiring the land. This is certainly so with a number of projects we have examined such as those of WCE and PNB.

Based on the WACC of 8–9% pa at which stakes in several mature toll concessions have changed hands in the 2nd decade of this millennium, one can infer that their equity return is at a satisfactory level, certainly compared to the risk free rate of 4–5% pa and given that the demand for their services has become more predictable. We have noted, on the other hand, that with respect to greenfield toll road projects, they have a more varying risk profile, as attested to by the 38% share of non-investment grade issues. Despite this, there has been no shortage of investors willing to take the risk and invest in the sector. This implies either that the return to the successful concessionaires are very high, or that the return to the even less successful concessionaires are not that low relative to the risk taken. This may be explained as the ability of the concessionaires to enter into such ventures on a negotiated basis which opens up possibilities for them to minimise any opportunity loss by having the toll roads built and maintained by a related party. The return on such less credit-worthy projects may thus be not that low if the size of their invested capital is adjusted for the more favourable terms on which these contracts are likely to have been performed. Even the private debt holders may choose to participate in these projects because of the government's step in right to take over the project in the event it ceases to be a going concern or the more risky mezzanine tranche of the debt may take the form of a government support loan or may be taken up by a government entity such as Bank Pembangunan.

8. Key Role of the Bond Market in Infrastructure Privatisation

It is important, in passing, to note that at the time PLUS embarked on the development of its highways in the late 1980s, the private debt securities (PDS) market was non-existent. The first sizeable issue of PDS and mortgage-backed bonds (of Cagamas Bhd) only took place in the early 1990s, with the bond outstanding as a share of GNP

climbing quickly from 7.2% in 1992 to 29.4% in 1999.[17] Therefore, PLUS had to rely on the banking industry, government support loan (GSL) and the equity market to provide it with the funds to undertake its multi-billion RM construction program. Given the typically long gestation period and long life span vis-à-vis the tenor of bank loans, PLUS was exposed to a massive maturity mismatch in its underlying assets and liabilities. This exposed it to refinancing and bankruptcy risk.[18] Another possible mismatch was that the bank loans carried a floating interest rate, which can be more volatile, whereas the toll rate schedule only provided for a steady increase in cash flows. This was not a serious problem until the outbreak of the AFC when there was an escalation in interest rate and a collapse in demand.

With rapid growth of the PDS market from the second half of the 1990s, more privatised entities, including most toll road developers, issued bonds to finance their privatised infrastructure ventures. The development of a less captive and a more active and liquid bond market was attested to by the narrowing differential in the yield spread between Malaysian Government Securities (MGS) and PDS of equivalent rating from about 5% in 1994 to under 1% in the 2nd decade of the new millennium (Bank Negara Malaysia, various issues; Thillainathan, 1996).

The maturity and interest rate mismatch was certainly a contributing factor to the weaker financial position of PLUS in the late 1990s. It is also interesting to note that unlike the IPPs in Thailand and Indonesia, which fell prey to the AFC due to their currency and maturity mismatches, those in Malaysia did not fall prey as a more developed PDS market enabled them to fund their ventures in RM and on a matched basis (Desai, 2003; Sheng, 2009; Thillainathan, 2011).

9. Privatisation of Highways: The Trend over Time and the Lessons to Learn

Concession to build and operate toll roads has been used to promote the entry of Malays into big business despite the risk of demand uncertainty of greenfield development, exposure to their extremely long life span, high capital intensity, mismatched cash flows, and the associated refinancing risk. The offsetting consideration was that at least some of the toll road operators faced less competition. Further, to ensure their success, the concessionaires were given the right for significant increases in tariffs at regular intervals as well as grants or soft loans, to part finance land acquisition and construction cost (Annex Table 1, Notes). The government's right (though not an undertaking or obligation) to step into the shoes of the concessionaires in the event they were not able to service their debt (Pua, 2011; World Bank, 1999), made lenders more willing to lend to these projects, and such fallback provisions, made for more

[17] The rapid development of the PDS market can be attributed to the deregulation of the government bond market from the late 1980s and the existence of a relatively large Employees Provident Fund and of several life insurance companies, which were hungry to invest in long-dated fixed rate bonds as a way to diversify away from a government bond market which remained captive at least until the mid-1990s (Thillainathan, 1996).

[18] This was compounded by the fact that its controlling shareholder was also massively over-leveraged and was engaging in highly speculative activity and was using PLUS as its bailout vehicle.

reasonable borrowing terms. Some of the concessionaires, such as PLUS and LITRAK, were also guaranteed that in the event of a termination of the concession they will be compensated on the basis of the future profits forgone (Pua, 2011).

The high profitability of the early toll road concessions was readily apparent with the restructuring of UEM and the floatation of PLUS in 2002. Despite a halving in approved tariff rate increases, PLUS still performed very well, partly because it was compensated with an increase in its concession period. For instance, the net profit margin of toll operators, such as PLUS and Litrak, was 50–75%, while the return on their shareholders funds was between 20–25% (vs long term bond yield which were below 10% pa in the mid-1990s when these two companies commenced their commercial operations) (Pua, 2011).[19]

Despite reduced toll rate increases, the commuting public still found the rate too high for its liking. As a result, the government was forced to hold back or quickly reverse rate increases which meant that the government had no choice but to borrow to pay the huge compensation to the toll operators. With continued public protest, resulting freeze in toll rates and mounting compensation, the government engineered KNB and EPF to privatise PLUS in 2011 (at a great profit to its majority shareholder KNB), and even obtained the JVC's agreement to further reduce toll rate increases and to waive the RM3 billion compensation outstanding in return for grant of a further government soft loan. Contributors to the EPF, under its existing governance framework, had no say in their participation as a JV partner in Malaysia's biggest toll road enterprise. And as toll rates are subject to government regulation, they are exposed to the risk, in the future, of subsidising toll operations. The government has not succeeded in privatising other toll operators with rich concessions such as Litrak. It also continues to support the entry or continued existence of yet others, by granting or refinancing loans directly or through its agencies, such as Bank Pembangunan, as well as by extending the concession period (Annex Table 1). This is no doubt because it still sees toll road operation as a readily amenable vehicle to facilitate Malay entry into or maintain them in business.

We note that no progress has been made in opening up highway construction to competitive tenders,[20] unlike in power (Thillainathan, 2021a). The key factors which can make for Malaysia's higher highway development cost are the award of concessions on a negotiated basis, a concessionaire's tendency to engage a related party to build and or maintain the highway on a cost plus basis, and with the toll rates fixed on a full cost recovery principle. This can make for collusion between the decision maker granting the concession and the party receiving the concession as well as for high cost and high toll rates. Whether a highway is to be owned and operated

[19] The return Pua (2011) has quoted is probably an equity IRR.

[20] This may be partly because the government has been willing to award a concession to build and operate an urban toll road (i.e. in a developed and highly urbanised area), to any party which comes out with the most attractive proposal to minimise congestion or disperse traffic, as in the case of the concessions, which have been awarded in the Klang Valley to Gamuda, IJM/Road Builders, PROLINTAS and Ekovest or their related companies. An alternative will have to be found on how to open up to competition the development and operation of urban toll roads.

by the government or a private concessionaire, the owner and operator of a proposed highway should be able (with the support of the relevant experts such as engineers, quantity surveyors and geologists), to draw up the tender documents with the required technical specifications, and invite bids for its construction on a competitive basis. If so, it should also be equally possible to draw up similar tender documents to invite bids for the award of a concession. In this case, one can fix a low enough toll rate that can be charged,[21] and award the concession to the bidder who requires the least subsidy. Alternatively, once the government has decided on the highway to build, it can always provide the framework for the compulsory acquisition of the required land, thereafter invite bids to develop and operate the highway and award it to the party which pays the highest price for the required land and charges the lowest toll rate.[22] Even if the government desires to reserve the development and operation of highways so as to develop a Malay business or managerial class, the optimal way to achieve this goal is to designate the Malay community as a non-competing group and award it to a member of the community who can do so by bidding for the required land at the highest price and charge the lowest toll rate. Where the government wants to keep the toll rate low by allocating the required land at below the market price and extend long term support loan, also at below the market rate, this must be provided not to a favoured party on a negotiated basis but to any party who is willing to enter a bid and the concession should be awarded to the party which quotes the best terms, if the country is to benefit.

We have noted that the preponderance of SOEs and widely held PLCs as toll road concessionaires has led to a separation of ownership from control in about 75% of these toll road enterprises. Based on agency theory, we note that where the manager is not the owner, the interest of the two can differ. Further, where there has been no attempt to align the interest of the two parties and where the owner is unable to exercise oversight over the manager, we can expect the divergence in interest between the two parties to be greater.[23]

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[21] For any proposed toll roads, one alternative is for the government to fix a low enough toll rate with the annual toll rate escalation clause based on a (CPI – X) formula (where CPI is the rate of increase in the average consumer price level and X is the rate of increase in productivity), and award the concession to the party which requires the least subsidy to build the highway.

[22] There is no case for a highway to be built at government expense and for its toll free use by a vehicle user, as the government will then be subsidising the vehicle owners who can be expected to be more well-off than non-vehicle owners. Neither is there a case for the continued use of negotiated tenders in the highway sector, as it can be at the expense of road users, debt holders and the economy at large.

[23] In a PLC, where ownership is widely dispersed, the existence of a market for corporate control, can substantially reduce the extent of this divergence. Where a manager is not maximising shareholder value but is instead maximising his private benefits of control, the underperformance in the share price of the company will invite takeover bids with the takeover party buying over the shares from or working with the aggrieved shareholders, to throw out the incumbent management.

In the case of a public enterprise, the problem is further aggravated as the interest of the owner (which is the general public), can differ significantly from that of the ruling party, which is to exercise oversight over the manager, who is in turn appointed by the party in power to run the enterprise. There may be a five year wait to change the ruling party and the manager, if they, as the owner's agent, are not maximising the interest of the general public.

Interestingly, Malaysia has its share of governance and accounting scandals, as a result of the divergence between ownership and control. In the toll road sector and among the PLCs, the UEM-Renong scandal of 1997[24] is the most glaring governance scandal to hit Malaysia. And among the SOEs, the financial scandal of the mid-2010s of 1MDB (which was a 'sovereign wealth fund' and not a toll road owner or operator or a PLC), is probably the most notorious fraud committed in the world in recent times.[25] The number of such scandals has been on the decline among the PLCs since the major corporate governance reforms that were introduced in response to the UEM-Renong scandal, in particular to regulate related party transactions (RPTs).[26] But the worst corporate scandals to hit Malaysia in recent years are not among PLCs but among government owned and operated companies.[27] This will always be a problem due to the separation in ownership and control, including with privatised entities which are (majority owned by) SOEs. Strong enforcement actions were finally initiated by the newly elected government in 2018 against stewards and captains of SOEs which had been defrauded. These actions are still being continued despite the surprising change in government in 2020. It remains to be seen, moving forward, if Malaysia can rid itself of money politics, rent-seeking and even outright looting that had come to characterise it increasingly in recent decades. For the threat of prosecution and punishment to deter others from committing similar corporate fraud in the future, there is a need in Malaysia not only for a good and effective enforcement of its legal and regulatory framework but also for a reform of its political and economic order.

10. Concluding Remarks

Privatisation started in the highway sector back in 1988, about five years before its introduction in the power sector. The highly ambitious project to build the new national

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[24] United Engineers (M) Berhad (UEM), was then a blue chip company with a strong balance sheet and substantial shareholding by institutional investors both foreign and local. On November 17, 1997, its announcement that it had accumulated a 32.6% stake in Renong Berhad, an affiliated company with a weaker balance sheet, had raised major issues in corporate governance in Malaysia. The purchases were made over a period of time without the mandatory disclosures. These purchases pushed up the joint stake in Renong Berhad of related shareholders (namely of Tan Sri Halim Saad, Time Engineering Berhad and UEM) to 76.9%. The acquisition which was viewed as a bailout by some observers and as a price support operation by others, led to a collapse in share prices in the immediate aftermath of the announcement, with UEM declining by 48%, Renong Berhad by 38% and prices on the main board by 6.8%. The prices of the two counters deteriorated further thereafter even from these depressed levels (Thillainathan et al., 2003).

[25] Some of the other corporate scandals which broke out during the AFC are dealt with in Thillainathan et al., (2003). There have been a few other major corporate scandals which have taken place in the country since then, with prime examples being the accounting scandals of Transmile (Liau, 2019) and Megan Media (Normah et al., 2014).

[26] RPTs have been a major problem in Malaysia, as elsewhere in Asia, as owner managers are in control of some key PLCs. If RPTs can be more effectively regulated, a concentration of shareholding in owner managers may be less of an issue, as it may make for a better alignment of interest between the owner manger and minority shareholders.

[27] Among the worst are PKFZ (Lee & Lee, 2012), 1MDB (US Department of Justice, 2016), Tabung Haji (Tabung Haji, 2019) and Felda Global Ventures Bhd (Barrock, 2018).

4-lane, dual carriageway (to replace the existing two lane trunk road), was taken over and passed to PLUS from the Malaysian Highway Authority, a Federal Agency, with little or no protest. On the other hand, for example, the opening up of the power generation sector to the entry of the private sector was carried out with considerable opposition from TNB, the state-owned power utility (Thillainathan, 2021a).

Now about one-fourth of the toll road concessions are currently owned and operated by Malay businessmen with almost two-thirds owned and operated by Malay managed SOEs. In the power sector, in contrast, Malay managed SOEs own and operate wholly the distribution and transmission networks and almost 50% of the generation capacity. Malay businessmen own and operate about one-third of the generation capacity. With the renationalisation of the rail and water sectors, the role of the Malay businessmen in these sectors has been confined at best to that of an operator. Not unexpectedly and as noted, complaints about crowding out by the SOEs have been voiced increasingly by Malay businessmen themselves.

What privatisation *a la* Malaysia thus entails is not necessarily an ownership divestiture by the public sector, but one where the provision of the privatised goods or services is financed less through taxation and more through the levy of a user charge, and this is so now with infrastructure services. Though these privatised enterprises are presently operating in a more private market or commercial environment, the equally interesting question then is to ask, are these entities now more exposed to the rigors of competition or still sheltered from competition? In the power sector, the concessionaire has a guaranteed off-take contract and hence faces no demand or price risk. In the highway sector, on the other hand, the concessionaire may be competing with each other for a share of the market. However, with respect to the concession, as there is no competitive bidding, the concessionaire will typically negotiate the terms of its contract, including the toll rate but it has to always worry if it can generate the required traffic to service debt and earn its target return. The more serious problem will be faced by the debt holders if the concessionaire had employed a related party to undertake the highway construction and take part of its profits upfront and continue thereafter to employ a related party to maintain the highway.

Interestingly, with the privatised highway projects, despite the demand risk and variability in returns, there has been a strong demand for securing a concession. And even where the credit standing of a project has deteriorated, its concessionaire has not abandoned it as its actual return may be higher once an adjustment is made for the upfront profits it earns on its related party transactions (RPTs). Though these RPTs can be to the disadvantage of debt holders, they have continued to lend, partly because these debts have priority over the government support loans typically given to these projects and partly because the government has exercised its step in right as an obligation to take over a project if it ceases to be a going concern, as was amply evident in the aftermath of the AFC.

There is one other interesting observation one can make with respect to a highway. The market value of a highway can rise over time, as it depends only on its cash generating ability, which in turn depends not on how long it is since it was built but on how well it is being maintained, and how long is the remaining life of its concession and on what sort of competition it is exposed to. This is well illustrated by the network of

PLUS expressways. The enterprise value which investors (including debt holders), have been willing to pay to takeover and finance the network has continued to rise in value since they came into operation in 1994, despite the reduction in the rate of increase of the toll rate in 2002 and 2011, which reductions have been partly compensated by an increase in their concession life span (see Annex Table 1). This is not only because the motor vehicle is still the preferred mode of transport for many but also because there has been no competing road network to pose a serious threat to the PLUS network, until the WCE, which has been under development since 2014, becomes fully operational. In this regard, it is important to note that the large or out-size support and subsidy that PLUS had enjoyed from the government at the start of its business, exerted less of an influence in determining its performance over the last two decades, as the benefit arising from those initial support and subsidies had by then been substantially factored into its valuation during its public listing in 2002 and the support and subsidy it has been enjoying since then is a lot less.

In the highway sector, the award of concessions is still on a negotiated basis and there is a compelling case not only for opening up of the process to competition but also for the construction contracts to be awarded on a competitive basis and not on a cost plus basis or to related parties. Where there is government support for a project, the award of contracts on a transparent and competitive basis is even more compelling. The project should be awarded to the party which requires the least subsidy and/ or which offers to charge the lowest toll rates. With the passage of time, the rate at which the roll rates can be increased over the concession period has also come down, as is evident, at least in the case of the PLUS expressways. This is a move in the right direction. But it is more preferable for the toll rate price escalation clause to be linked to the inflation rate by including a factor for an annual downward adjustment to provide for productivity increase, so that the owner and operator of the highway has the incentive to be always on the lookout on how best to improve its productivity and share the resulting benefits with the commuting public. Note that, there is a case for regulation of the toll rate, especially if the highway has any monopoly tendency.

The Malaysian government has achieved relative success in developing a Malay managerial class but to-date it has failed in building a genuine Malay business class that can compete on a level playing field. Given that failure and the need to maintain inter-racial balance, a case can be made for the continued reliance on Malay managers to run the SOEs and provide a counter-balance to the non-Malay owned private sector. But the challenge is to minimise on the crowding out of the private sector by the public sector and on how to bring about the required check and balance to minimise looting of the SOEs by the money politicians and their henchmen, if the latter are running these entities.

Glossary of Abbreviated Terms

AA – affirmative action
ABS – asset backed securities
APs – approved permits
AFC – Asian financial crisis
BLT – build, lease & transfer
CA – concession agreement
CAR – Credit analysis report
CPs – commercial papers
COD – commercial operation date
DASH – Damansara Shah Alam elevated expressway
ECRL – East coast rail link
EPF – Employees Provident Fund
FIs – financial institutions
GLC – government-linked company
GoM – Government of Malaysia
GSL – government support loan
IPP – independent power producer
IRR – internal rate of return
JVC – joint venture company
KNB – Khazanah Nasional Berhad
MARC – Malaysian Rating Corporation Berhad
MGS – Malaysian Government Securities
MOF – Ministry of Finance
MRT – mass rail transit
NA – not applicable
PLCs – public listed companies
PDS – private debt securities
PLUS – North south expressway
PNB – Perbadanan Nasional Berhad or national investment corporation
RAM – Rating Agency of Malaysia Berhad
RPT – related party transaction
SILK – Sistem Linkaran Lebuhraya Kajang
SPV – special purpose vehicle
SOEs – state owned enterprises
SUKE – Sungai Besi-Ulu Klang elevated expressway
TMB – Telekom Malysia Bhd
TNB – Tenaga Nasional Berhad
UEM – United Engineers Malaysia Berhad
WACC – weighted average cost of capital
WCE – West Coast Expressway
WTP – water treatment plant
YTM – yield to maturity

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Annex Table 1
Toll roads by length, shareholding, bond outstanding and rating

			Group ownership of toll roads		Commercial operation dates (CODs)	Bond outstanding of toll roads			Rating	
			Under operation	Under operation & construction		Under operation		Under construction	Initial	Current
			By % share	By KM		By % share	RM million	RM million	(Local scale)	
SOEs or Government			62.90%	52.90%						
	PLUS		848	848	1993-2000	64	29,900		AAA	AAA
	Penang 2nd Bridge		24	24	2014	10	4,600		NR	NR
	PNB Prolintas									
		AKLEH	7.9	7.9	2000					
		LKSA	14.7	14.7	2010				A3/A1	RW
		GCE	22.7	22.7	2005	0.9	415		NR	
		SILK	32	32	2001	1.15	541		A2	NR
		SUKE		24.4	2021			1,370	A1	
		DASH		20.1	2021					
	EPF									
		Duke 1 & 2	13.6	13.6	2009, 2017	3.5	1,641		A1	AA3
		New North Klang Straits Bypass	6.56	6.56	1998	0.36	170		AA3	AA3
		Cheras Kajang Highway	5.88	5.88	1999	0.9	420		AA3	AA3

Annex Table 1. Continued

			Group ownership of toll roads		Commercial operation dates (CODs)	Bond outstanding of toll roads			Rating	
			Under operation	Under operation & construction		Under operation		Under construction	Initial	Current
			By % share	By KM		By % share	RM million	RM million	(Local scale)	
Bumiputera or Malays			23.17%	21.37%						
	Maju Expressway Sdn Bhd									
		MEX 1	26	26	2007	3.24	1,525		AA2	BB1
		MEX 2		17	2020			1,450	AA3	A2
	Antah Holdings Bhd									
		Lekas	22	22	2010	2.52	1,186		AA3	C2
	ANIH Bhd					5.46	2,570		AA2	AA2
		Karak Highway	60	60	1994					
		ECE1	174	174	2005					
	Ahmad Zaki Resources Bhd (AZRB)									
		East Klang Valley Expressway (EKVE)		36.16	2020			1,000	AAAbg	AAAbg
PLCs Malay Controlled										
	Senai Desaru		77	77	2011	4	1,890		AA3	BBB3

Annex Table 1. Continued

			Group ownership of toll roads		Commercial operation dates (CODs)	Bond outstanding of toll roads			Rating	
			Under operation	Under operation & construction		Under operation		Under construction	Initial	Current
			By % share	By KM		By % share	RM million	RM million	(Local scale)	
PLC Chinese Controlled			2.09%	16.08%						
	West Coast Expressway (WCE)			233				1,641	AAAbg	AAAbg
	Ekovest	Duke 1	20.4	20.4	2009				A1	AA3
		Duke 2			2017				AA3	AA3
		Duke 3		44	2021			3,640	AA3	AA3
	Taliworks Corp Bhd									
		Cheras Kajang Highway	6.12	6.12	1999				AA3	AA3
		New North Klang Straits Bypass	6.56	6.56	1998				AA3	AA3
PLC Widely Held			11.72%	9.42%						
	Gamuda Bhd									
	Litrak Bhd									
		Shah Alam Expressway	35	35	1996 & 1998	0.8	376		AA3	AA2
		LDP	40	40	1999	1.68	790		A3	AA2

Annex Table 1. Continued

			Group ownership of toll roads		Commercial operation dates (CODs)	Bond outstanding of toll roads			Rating	
			Under operation	Under operation & construction		Under operation		Under construction	Initial	Current
			By % share	By KM		By % share	RM million	RM million	(Local scale)	
Chinese	IJM Bhd	Elevated Carriageway Link & Tunnel	26.5	26.5	2001 & 2004	0.44	208		AA3	A1
		SMART	9.7	9.7	2007	0.67	316		AA3	A1
		Sungai Besi Expressway	28.9	28.9	1999	1.18	555		AA3	AA3
		New Pantai Expressway (NPE)	19.5	19.5	2004		0		AA3	Matured
		Lekas	22	22	2010				AA3	C2
	Trinity Ventures Sdn Bhd		0.28%	0.23%						
		New North Klang Straits Bypass	4.38	4.38	1998				AA3	AA3
			1,553.40	1,928.06		100.1	47,103	9,101		

Notes: 1) PLUS: PLUS first became fully operational in 1994. About 50% of its 513 km of the North South Expressway (NSE) then in operation, represented completed sections, which were developed by the Malaysian Highway Authority (MHA) and had been opened to traffic from 1985-1988. This was handed over to PLUS, when it was given a concession to own and operate the NSE (Thillainathan, 2002). Numbers given in the Malaysia Plan documents (Malaysia, 1979, 1981, 1984, 1986 & 1989), attest to this. And there is no mention anywhere as to the sum that was paid by PLUS to MHA or the government for the takeover. Further, PLUS was also given a government support loan (GSL), representing 48% of the original estimated construction cost of RM3,446m and

even 28% of the revised estimate of RM5,987m (Plus Expressway Bhd, 2002). The interest payments, at 8% pa (vs the 20 year MGS yield then of 8.5%), was to be capitalised over the first 14 years and thereafter was repayable in 10 equal annual instalments from 2014 to 2023 (ibid).

2) Litrak: Litrak operates the 44 km LDP in the Klang Valley. As per the prospectus, there is only a disclosure that it came out with RM98 million to acquire land (LITRAK, 2018) without stating what was the value of the land acquired from the government. Construction of Litrak started in 1996 and it was opened to traffic in 1999.
3) ANIH Bhd: ANIH Bhd was incorporated in 2011 to take over from a related party, MTD Capital Berhad, its three concession assets, namely KL-Karak, ECE1 and KL-Seremban. By km of highways operated in Malaysia, the share of Karak Highway is 4% (and 3.6% by traffic volume) whereas ECE1's share is 12% (but its share by traffic volume is only 0.7%). Equally interestingly, ANIH's share of bond outstanding is 5.5%, only one-third of its share by km of highways operated. This is indicative, very likely, of MTD Capital taking over government financed assets on very generous terms and equally likely of ANIH buying over the assets from its related party at below market price. ANIH Bhd's AA2 local rating, two notches below that of PLUS, is still indicative of its rich concessions, though the original MTD Capital shareholders are likely to have captured a significant part of the profits from their divestment.
4) EKVE: Its debt issue carries a triple A local rating, guaranteed by Maybank and Bank Pembangunan. Its completion is now in 2021. To build a tunnel to avoid built-up areas, there is a 40% cost over-run to RM2.2 billion, despite the authorities allowing the highway to cut through 106.6 hectares of forest reserves in Ampang and Ulu Gombak (acquired presumably at a nominal cost). With the concessionaire underwriting the cost over-run, the bank guarantee remains in place (RAM, 2020).
5) WCE: WCE Bhd's 233km West Coast Expressway will, unlike the PLUS Expressway, pass through well-populated older towns & rural areas. Enjoying a GSL of RM2.24 billion at the risk free rate of 4% pa, the government also footed RM980 million of the estimated land acquisition cost of RM2.13 billion (WCE, 2019). The Concession Agreement provides for the extension of the concession period beyond 50 years, if the target internal rate of return is not attained. The estimated project cost is RM6bn and the shareholders injections into the project, on a pro rata basis, works out at 16% of the estimated required funds.
6) SUKE: SOE PNB's SUKE, a 25 km Klang Valley elevated highway, will now open to traffic only in 2021. The federal government footed its highway land acquisition cost, about 13% of the RM8.7 billion project cost. A GSL, like WCE's at 4% pa and subordinated to the commercial lenders, represented 24% of its RM7.5 billion project outlay, excluding land cost (SUKE, 2017). DASH, PNB's second 20 km elevated highway, to be opened also in 2021, probably enjoyed similar government support in land acquisition and GSL. In the absence of any bond issue, little is known on its funding.

Sources: Computed from primary market data on bond issues as captured in the Bloomberg data base as at November 2019 supplemented with data from the publicly available Credit Reports from RAM and MARC and discussions with fund managers and analysts.

Annex Table 2
Initial and current rating of toll roads

			Rating	
			Initial	Current
	By rating scale			
	Global	Local		
			%	%
1)	A3	AAA	21	21
2)	BBB1-BBB3	AA1-AA3	54	33
3)	BB1 & <	A1 & <	17	38
4)	Unrated		8	8
	Number of issuers		24	24

Notes: 1) The issuers rating by Malaysian rating agencies, RAM and MARC, is on the local scale. To benefit international readers, the table provides a mapping of the local into the global scale, with Malaysia's 2020 international rating of A3 taken as being equivalent to its local AAA rating. In the table's notes, the rating trend analysis is on the local scale. However, in the text, the global scale has been used in discussion, for instance, on the issuer's credit quality.

2) On Annex Table 2's rating score, an issuer's current rating is taken from Maybank Kim Eng (2019).

3) On initial rating, Senai Desaru (SD)'s BBB3 rating (Maybank) has been changed to AA3 (Yeah, 2007). Data start year in Maybank is only from 2010. On initial rating, there are other differences, but Annex Table 2 makes no additional adjustment.

4) Maybank thus misses certain key trends in rating, as it only covers PDS on issue and outstanding from 2010 to 2019. With pre-2010 data, there is only one extra downgrade. But on extent of downgrade, there is a difference for two issuers. SILK was taken as NR in Maybank. On default of its pre-2010 A2 rated debt (Yeah, 2007), a restructured SILK's SPV issued a non-rated debt. This is therefore a downgrade, though not reflected in Annex Table 2. On LEKAS and SD, the one to two notch downgrade in the Maybank data set is an underestimation. Annex Table 2 records no upgrade of any issuers. With pre-2010 data, three issuers recorded an upgrade. Though a continuing, successful operator, NPE is missing from Annex Table 2, as its current debt outstanding is zero.

5) From review based on Annex Table 2, rating agencies have been more optimistic, as the number of downgrades exceed the number of upgrades, and more so as the extent of the downgrades is more substantial.

Sources: Bloomberg, accessed data on Malaysia's Bond Market in November 2019, Yeah et al., 2007, 2011, Maybank Kim Eng, 2019.