

Addressing the Singapore-Johor Causeway Cross-borderhigh Toll Charges

Teh Chee Ghee^{#1}, Sum Kum Mooi^{*}

[#] Department of Accounting and Finance, Monash University, Malaysia

^{*} Socio-Economic Research Centre (SERC), Malaysia

Abstract— This paper attempts to address concerns arising from the increase in the toll charge on vehicles plying between Malaysia-Singapore via the Causeway with effect from 1 August 2014 and in retaliation, the policy of reciprocity of symmetrical toll charges from Singapore effective from 1 October 2014. An impact assessment of the toll imposition on three major stakeholders are made together with the analysis whether the private-public partnership (PPP) approach adopted on construction of the new Eastern Dispersal Link (EDL) expressway linking to Singapore has lightened or increased the burden of the general public. The impact assessment sheds some light on the issues pertaining to the socio-economic factors, cost of financing of this project, and the extent of financial support from the government and the taxpayers in order to ensure that the infrastructure is provided in an economical way. Possible solutions to the issues surrounding the EDL by focussing on the pricing of toll that would be of best interests to the affected groups. Analysis of various alternatives with adjustments to the toll rates and concession periods were made, and examined on their viability as solutions from differing standpoints and strategies to mitigate the impact, and the likely win-win solutions for the parties involved were put forward. The proposals are intended for the government as considerations for a more manageable and moderate toll levels so that the issue could be resolved without further delay, thus averting the potential of knock-on effects to the Malaysian economy.

Keywords— cross-border; toll pricing; imposition; abolishment; knock-on effects; impact on business,

I. INTRODUCTION

The Eastern Dispersal Link (EDL) expressway in the Southern region of Malaysia was opened in 1 April 2012. Despite being opened to the public for two years, toll collection has yet to start. During that period, there have been on-going discussions between the government and the concessionaire on the possible acquisition of EDL, but since this did not materialise, there has been no clear resolution that eventually yield a win-win situation for the public, government, and the concession holder. Finally, the Malaysian Government has allowed concessionaire of EDL, as stipulated in the concession agreement, to collect toll charges effective from 1 August 2014.

The EDL is a 8.1 km link between the Customs, Immigration and Quarantine (CIQ) Complex to the existing North-South Expressway (NSE). Costing about MYR1.27 billion to build, the EDL functions as a bypass towards the

CIQ complex, addressing the heavy traffic flows along the federal route towards CIQ during peak hours. In 2013, the EDL expressway was reported to have served and provided convenience on a daily basis to almost 170,000 vehicles travelling within the business districts of Johor Bahru, thus realizing the main objective of EDL as a traffic dispersal scheme

In the past, only inbound vehicles entering the Johore's CIQ complex from Singapore are subject to toll charges, ranging from MYR2.90 to MYR6.10, depending on the different class of vehicles. Motorcycles are exempted from toll payment. From 1 August 2014 onwards, motorists are required to pay toll for both inbound and outbound at the CIQ complex at the Malaysian border checkpoint at Johor Bahru. The charges imposed on various types of vehicles are as illustrated in Table 1. Resulting from this imposition, a round trip will now cost MYR16.50 for private cars, as compared to MYR2.90 previously, causing a whopping 469% increase of MYR13.60. The exorbitant increase in toll charges has caused a lot of public outcry due to the impact on individual consumers and commercial enterprises that are commuting between Malaysia and Singapore by land.

Table 1: Total Toll Charges at Johor Bahru Customs

Type of Vehicle	Previous Charges (MYR)	New Charges (MYR)			Increase (MYR) %
		Effective 1 Aug 2014 ^(a)			
		Inbound	Outbound ^(b)	Round Trip	
Class 1 Private Car	2.90	9.70	6.80	16.50	13.60-469%
Class 2 Small Lorry	4.50	14.70	10.20	24.90	20.40 -453%
Class 3 Heavy Truck	6.10	19.70	13.60	33.30	27.20-446%
Class 4 Taxi	1.40	4.80	3.40	8.20	6.80 -486%
Class 5 Bus	2.30	7.80	5.50	13.30	11.00 -478%

- (a) As per Federal Government Gazette P.U.(A) 224, the rates of toll authorized are for use in either direction of any part of the road known as the Eastern Dispersal Link Expressway (EDL) effective from 1 August 2014.
- (b) Previously, there were no outbound toll charges. Before 1 Aug 2014, toll charges were imposed for only one way from Singapore to Johor.

The toll booths are located inside the CIQ Complex at Johor Bahru Causeway.¹ The imposition of toll charges is affecting those who are plying between Johor and Singapore, using the Causeway that link Johor Bahru and Woodlands in Singapore. Based on unofficial statistics and traffic record, there are about 220,000 vehicles using the EDL daily, but only 60,000 users are expected to pay the toll, as these are users travelling to Singapore.² However, over half (58%) of the 60,000 users are on motorcycles and are exempted from the EDL toll charges. Although the majority of the EDL users do not have to pay the toll, it would be rather unreasonable and unfair to tax the users who are daily commuters of the Johor Causeway to Singapore. The controversy arises from the fact that all users of the CIQ complex have to pay toll charges to contribute towards the EDL's costs, irrespective of whether they are actually using the EDL or not. And the users of EDL are not required to pay the toll charges if they are not exiting to Singapore. It appears that the huge hike in toll charges to and fro Singapore is used to subsidised domestic commuters of EDL.

Meanwhile, Singapore has a long-standing policy of matching its toll charges with that of Malaysia. The rationale is simply to discourage high tolls being imposed, while preventing only one side benefitting from the toll revenue from the crossing. Despite this insistence, the Singapore authority has also come up openly that if Malaysia reduces or sets no toll imposition, Singapore would also follow suit but if the Malaysian authority increases the toll charges, they will impose the same increase.

The Singapore Land Transport Authority (LTA) has announced in their press release on 12 September 2014 that the new toll rates to take effect from 1 October 2014. The previous symmetrical toll for Class 1 vehicles (passenger cars) is SGD1.20, payable upon leaving Singapore. In order to match the toll imposed at the Malaysian border, the rates was raised to SGD3.80, while a toll charge of SGD2.70 will be applicable for cars entering Singapore. The toll charges effective from 1 October 2014 are depicted in **Error! Reference source not found.** below. Comparing Table 1 and Table, it is apparent that the Singapore will revise the tolls charges to the MYR equivalent whenever the Malaysian Government makes any revision.

¹ The rationale for erecting the two booths at CIQ and not on the EDL is to allow the majority to use EDL for free as this was one of the conditions set by the Johor government. If toll booth is placed along the EDL, road users would avoid by using the other surrounding non-toll roads around the city, hence defeating the purpose of dispersing the traffic congestion.

² BERNAMA, Aug 11 2014 (<http://kpdnkk.bernama.com.pulse.petronas.com.my/>); The Star, 30 July 2014.

Table 2: Toll Charges at Singapore Woodlands Checkpoint

	Previous Toll Charges		Toll Rate effective 1 Oct 2014				% Inc.
	SGD	MYR equi.	Outbound SGD	Inbound SGD	Total SGD	MYR equi.	
Motorcycle	-	-	-	-	-	-	-
Private Car	1.20	3.05	3.80	2.70	6.50	16.45	442%
Small Lorry	1.90	4.80	5.80	4.00	9.80	24.80	416%
Heavy Truck	2.60	6.60	7.70	5.30	13.00	32.90	400%
Taxi	0.60	1.50	1.90	1.40	3.30	8.35	450%
Bus	1.00	2.55	3.10	2.20	5.30	13.40	430%

Source: Land Transport Authority (www.lta.gov.sg), accessed on 14 Sep 2014
 Note: Conversion rate of MYR2.53=SGD1, including rounding-up to the nearest multiple of five sen. The exchange rate has significantly increased subsequently.

1.1. Immediate Impact

Without any other more economical routes, the impact of the toll hike is inevitably affected individuals as well as the commercial and the trade sectors. With no clear signals of cooperation between the two countries to address the issue, amid Malaysian high toll rates imposed since 1 August 2014, the impact of the tit-for-tat matching toll rates from Singapore from 1 October onwards would have a hefty impact especially on the daily commuters to work.

As illustrated in **Error! Reference source not found.**, the overall total round-trip across the Johor Causeway by private cars (Class 1 vehicles) will eventually cost almost 5.5 times more to approximately MYR32.95 from MYR5.95 prior to 1 August 2014, and from the present MYR19.55.

Table 3: Total Round-trip Cost across the Johor Causeway for Class 1 vehicles before and after toll hike in Malaysia and Singapore

	Prior Cost before both toll hikes			Cost from 1 Oct 2014 onwards			Increase (%)
	Malaysia	S'pore (SG)	Both Tolls (MY)	Malaysia (MY)	S'pore (SGD)	Both Tolls (MYR)	
Johor-Singapore	-	-	-	6.80	2.70	13.65	-
Singapore-Round-trip	2.90	1.20	5.95	9.70	3.80	19.30	224%
Round-trip	2.90	1.20	5.95	16.50	6.50	32.95	454%

Note: Singapore toll charges are converted into MYR with rounding-up to the nearest multiple of 5 sen. Exchange rate for MYR and SGD of 2.53 is assumed.

Although small lorries and heavy trucks account for less than five percent of the daily traffic across the Causeway, the imposition such excessive toll charges would have an immediate effect on the transportation and logistics costs,

triggering a rise in business costs. Table 4 shows that Class 2 vehicles like small trucks would incur additional MYR40.35 per round-trip across the Causeway. Logistic providers or entrepreneurs are expected to transfer these increases to their customers, and eventually passed onto the end consumers, hence causing a general increase in consumer prices. The ultimate impact would be on the consumers again, i.e. with higher cost of living and having less to spend.

Table 4: Total Round-trip Cost across the Johor Causeway for Class 2 vehicles before and after toll hike in Malaysia and Singapore

Class 2 ^(a)	Prior Cost before both toll hikes			Cost from 1 Oct 2014 onwards			Inc. (%)
	Mala ysia	S'po re	Both Tolls	Malays ia	S'po re	Both Tolls	
	(MY)	(SG)	(MYR)	(MYR)	(SG)	(MYR)	
Johor- Singap ore	-	-	-	10.20	4.00	20.30	-
Singap ore- Johor	4.50	1.90	9.35	14.70	5.80	29.40	214 %
Round- trip	4.50	1.90	9.35	24.90	9.80	49.70	431 %

Note:

^(a) Class 2 vehicles are defined as vehicles with 2 axles and 5 or 6 wheels, excluding buses.

^(b) Singapore toll charges are converted into MYR with rounding-up to the nearest multiple of 5 sen. Exchange rate for MYR and SGD of 2.53 is assumed.

II. IMPACT ASSESSMENT OF EDL EXPRESSWAY

A. The role played by the EDL expressway

The public have been using the EDL expressway on toll-free basis for the past two years since the EDL was opened. During the first month after its opening, 3.8 million vehicles have used the highway, averaging to 126,000 vehicles daily, and subsequently about 132,000 vehicles daily in May 2012.³ On an average, the EDL expressway has served about 150,000 vehicles per day since its opening on 1 April 2012.⁴ In 2013, the EDL expressway was reported to have served and provided convenience on a daily basis to almost 170,000 vehicles travelling within the business districts of Johor Bahru, thus realizing the main function of EDL as a traffic dispersal scheme.⁵

The views on the socio-economic roles of EDL expressway can range from strong advocators who have experience the significance benefits of using the EDL, or from commuters who believe that the EDL is not a sustainable solution with the costs or toll charges incurred. Other less recognisable benefits of the new expressway is the value of a widened

geographical size of transport network and new destinations that allow unrestricted access to commuters, and access to freight deliveries.

Overall, the EDL expressway provides the following benefits to the users and commuters: (i) connectivity to several districts in Johor and avoid relying only on the previous main road (Jalan Tebrau) leading to Johor-Singapore Causeway; (ii) to help disperse traffic heading into the Johor Bahru city area. The travelling time between CIQ and NSE could be reduced from 20 minutes to an average 5-6 minutes, when travelling at 90 km/h as compared to 35 minutes via Jalan Tebrau; (iii) an impetus for economic development along the eastern corridor of Johor Bahru.⁶ When the idea of the expressway project was conceptualized, it was already decided that the highway will be built using an 'open toll' concept. Open toll concept is generally more suitable for urban or semi-urban areas where traffic flows are high, and the toll collected is unrelated to the distance travelled. The map of the EDL expressway is illustrated in Appendix A.

The toll booths are located in the CIQ Complex, known as Sultan Iskandar Building (BSI). The main reason for locating the toll collection centre at the CIQ Complex is to benefit the majority of the Johor population using the EDL. As long as users of EDL do not pass through the CIQ Complex, they are not subject to any toll charges. According to the latest estimates, this will enable will allow approximately 160,000 to 180,000 EDL road users per day, travelling within Johor Bahru city to enjoy to use the expressway for free at the expense of those travelling across to Singapore. Toll is levied only on about 40,000-50,000 EDL users (excluding motorcyclists) who travel across Singapore via the Causeway daily. This translates to about 25% of the EDL road users. This implies that majority of the EDL users were accorded the benefits of EDL without any charges, while the concessionaire benefits from the traffic volumes between Malaysia and Singapore.

The traffic behavioural study was conducted by a traffic consultant, engaged by the project concessionaire. According to the study, the Causeway serves about 69 million persons trips annually. The traffic on the Causeway has also proven to be resilient, and grew at a compounded annual rate of 4.6%.⁷ The nature of the inelastic traffic volume at the Causeway is also attributable to the lack of alternative route since the Second Link (from Tanjung Kupang, Johor to Tuas Checkpoint, Singapore) is no less expensive and relatively longer distance as compared to Johor Bahru Causeway to Singapore. This provides a strong justification for the toll collection centre at the CIQ complex considering that the daily traffic flows are from essential working trips for those

⁶ Source: Traffic Consultant Report enclosed with the InfoMYRation Memorandum furnished on P&C basis to prospective investors; and www.edlconnects.com.my. The evaluation was undertaken by Perunding Trafik Klasik Sdn Bhd.

⁷ Traffic volume compounded at 4.6% per annum during the period 1991-2005; estimate of 9% per annum during 2003-2005 period.

³ As reported in CIMB report, "Day break Malaysia", 1 June 2012

⁴ MRCB Annual Report 2012, pg. 49.

⁵ As reported in MRCB Annual Report 2013, pg. 82.

who reside in Johor but working in Singapore. The traffic consultant reckoned that the traffic volume at the Causeway should not be significantly impacted after the toll is imposed, unless the toll charges exceed MYR10.00 per vehicle per way.

B. Impact of the toll imposition

The toll charges imposed which are multi-folds increase from the previous rates are considered exorbitant. Such astronomical increases have caught many parties off guard, as there were no clear indications that the toll charges would be imposed so soon and at such a high quantum. The Malaysian Highway Authority (MHA) only made the announcement of toll collection on 25 July 2014. Such significant increase would immediately impact those commuters travelling daily to and fro to work or schooling in Singapore.

Approximate 300,000 people, including the residents along the 5km radius of the EDL have access to the EDL expressway.⁸ On a typical day, there is about 60,000 vehicles crossing over.⁹ The types of vehicles crossing over the Causeway on a daily basis are motorcycles (58%), cars (36%), light trucks (1%), heavy trucks (2%), taxis (0.5%) and buses (2.5%). According to the latest Johor Customs Department, from January to June 2014, approximately 4.76 million vehicles used the Causeway, while 33.5 million had used the GelangPatah Second Link.¹⁰ This means that about 26,000 vehicles use the Causeway vis-à-vis 184,000 vehicles using the Second Link.

The imposition of toll charges is impacting those who are plying between Johor and Singapore, using the Causeway that link Johor Bahru and Woodlands in Singapore. Based on unofficial statistics and traffic record, there are about 220,000 vehicles using the EDL daily, but only 60,000 users are expected to pay the toll, as these are users travelling to Singapore.¹¹ The controversy of the EDL expressway arises from the apparent fact that all users of the CIQ complex have to pay toll charges to contribute towards the EDL's costs, irrespective of whether they are actually using the EDL or not.

From the Ministry of Transport Singapore, an average 13,000 foreign-registered cars entered Singapore on a daily basis. Singapore. However, over half (58%) of the 60,000 users are on motorcycles and are exempted from the EDL toll charges. Accordingly, the toll at CIQ complex would be taking away approximately MYR11-MYR12 million a month from the disposable income of majority Johor citizens travelling on private cars, taxis and buses and goods carrying vehicles such as lorries and trucks, which would have undesirable impact on the local business and economy.

⁸ This was cited in the rationale for EDL, adapted from Eastern Link Dispersal (www.edlconnects.com.my), accessed on 6 August 2014.

⁹ Source: Iskandar Malaysia (<http://www.iskandaMYRAlaysia.com.my/flagship-a-johor-bahru-city>), accessed on 6 August 2014.

¹⁰ New Straits Times, "New toll charges at Causeway", 27 July 2014.

¹¹ BERNAMA, Aug 11 2014 (<http://kpdnkk.bernama.com.pulse.petronas.com.my/>); The Star, 30 July 2014.

From this analysis, although the majority of the EDL users do not have to pay the toll (based on the rule of thumb based on Pareto-rule, 80% are non-paying), it would be rather unreasonable and unfair to tax the user who are daily commuters of the Johor Causeway, but less likely to travel on the entire 8.1 km expressway.

II.B.1 Impact of Causeway commuters

The increase in toll charges instantly affects the everyday commuters from the level of school-going children and their parents, workers, logistic providers, business operators, public transporters such as public buses and taxis, as well as weekend shoppers from Singapore. The following section describes the impact of the toll imposition on these main groups of users:

- (i) School-going commuters - the increase in toll charges instantly affects the everyday commuters at the level of schooling and for work. There are many primary school kids and secondary school students from Johor commuting across the Causeway to attend schools in Singapore via school vans and bus operators. Based on SERC estimates, this would increase its daily expenses by between MYR8.20 for buses, or MYR13.60 for vans, or between MYR500-MYR700 per month, depending on the number of trips made daily. In order not to face any squeezed margins, the school bus operators will eventually pass the increase of toll charges to the students by making adjustment to the bus fare.
- (ii) Workers commuting to Singapore - For workers driving to work, the hikes in toll charges mean that they have to fork out additional expenses of at least MYR350 per month.¹² Though these workers are earning in a stronger Singapore currency, the higher payments on toll charges suggest that they now have less take-home-pay. Since the toll booths are located at the CIQ complex, and in the absence of non-tolled route to the Causeway, these group of users have no alternative option, but to abide with the toll imposition.¹³
- (iii) Weekend Shoppers or Visitors-Similarly, for those Singaporeans as well as Malaysian who are permanent residents in Singapore, the higher toll charges translate to fewer propensities to purchase. The impact on this group of commuters, who normally make leisure or shopping trips, particularly during the weekends, would be inconclusive, depending on the demand elasticity of such trips. They would either reduce the frequencies by combining their trips, or for some who could not reduce their frequencies, their tendency to spend during each trip may have to be cut down. According to the Johor Bahru

¹² According to Singapore Ministry of Transport, there are 13,000 foreign-registered cars entering Singapore on a daily basis in 2013.

¹³ The rationale for erecting the two booths at CIQ and not on the EDL is to allow the majority to use EDL for free as this was one of the conditions set by the Johor government. If toll booth is placed along the EDL, road users would avoid by using the other surrounding non-toll roads around the city, hence defeating the purpose of dispersing the traffic congestion.

Small Business Association, there has been a drop in business since the imposition of the new toll charges. Some members have reported that the business turnover have dropped by 30 to 50% during the first two weekends since the toll was imposed.¹⁴

- (iv) Logistic Providers and Business Operators - Although small and heavy trucks account for less than five percent of the daily traffic across the Causeway, the imposition such excessive increase (453% and 446% increases, respectively) would have an immediate effect on the transportation and logistics costs, triggering a rise in business costs. Logistic providers or entrepreneurs are expected to transfer these increases to their customers. This would have a huge inflationary implication, particularly in the Johor state, when these additional costs are eventually passed onto the end consumers. Ultimately, the adverse impact would be on the consumers again, i.e. with higher cost of living and depletion of disposable income.
- (v) General Impact on Toll Payers-It is rather unfair to levy the prevailing high toll charges on all vehicles crossing the Malaysian-Singapore border via the Causeway, when there is no other better alternative access other than the Causeway. The traffic volumes at the Causeway is inevitable and demand usage of the Causeway is considered inelastic in nature attributable to the lack of alternative route. Not only that the tolls at the Second Link are no more cheap, but more notably, the distance is relatively longer between Johor Bahru and Singapore. There is not much incentive to switch to Second Link because of the additional distance, although higher traffic volume at Second Link can be expected especially from those commuting from Kuala Lumpur.

It is unwarrantable that toll charges are not even levied on users of the expressway when the EDL was constructed with a rather high cost of approximately MYR1.2 to 1.3 billion. The general public should not be burdened by such excessive toll charges in order to recover the excessive investment outlay of the EDL, which incurred a very substantial costs vis-à-vis other expressways in the country. The EDL expressway is considered to be the most expensive expressway in the country, with a cost of MYR148.15 million per km. As comparison, the Ampang-Kuala Lumpur Elevated Highway (AKLEH), which was the first elevated highway in Malaysia completed in 2001, only cost MYR108.11 million per km.

As illustrated in Table 5, the cost per elevated km for EDL was MYR33.67 million as compared to MYR13.68 million for AKLEH, and MYR12.26 million for Duta-Ulu Kelang Expressway (DUKE). Even with time value of money or inflation factored in, AKLEH would have only cost less than MYR30 million per elevated km. Generally, the completed and under-construction

expressways in the country were built with less than MYR70 mil per km as shown in Table 5 below. With such rapid development of the toll road in Malaysia, there is certainly an urgent need for the government to establish comprehensive evaluation of the costs-benefits of these expressways from the users' point of view so that the public is not excessively burdened with the high toll rates.

II.B.2 Impact of toll concessionaire

The revenue for the highway concessionaire is generated through toll collection and ancillary income such as advertisement billboards, telecommunication antenna, rental of stalls, etc. and any compensation payable by the Government as stipulated the Concession Agreement (CA). Under the CA, the Government is obliged to pay compensation to the concessionaire in the event that the toll rates imposed are lower than that were set out in the CA.

Table 5: Comparison of Costs of Major Expressways in Malaysia

Expressways	Construction Cost (MYR mil)	Length (km)	Cost per km (MYR mil)	Concession period	Notes
<u>Completed:</u>					
EDL	1,200	8.1	148.15	until 2042	Elevated - 4.4km
AKLEH (E12)	800	7.9	108.11	until 2029	Elevated - 7.9km
DUKE (E33)	1170	18	65.00	until 2039	Elevated - 5.3km
NPE (E11)	1,360	19.6	69.39	until 2026	
LDP (E10)	1,327	40	33.18	until 2029	
SLE (E3)	1,149	45.7	31.33	45 years 5 months	-
Besraya (E9)	520	16.6	31.33	35 years 9 months	
SPRINT (E23)	1,300	26.5	49.06	36/36/33 years	Kerinci, Damansara & Pencil Link
MEX (E20)	1,320	26.0	50.77	until 2037	
<u>Work-in-progress/Planned projects:</u>					
SUKE	4,180	31.8	131.45	not available	Awarded to Prolintas
DASH	4,300	20.1	213.93	not available	Awarded to Prolintas
EKVE	1551.1	39.5	39.27	50 years	Awarded to AZRB Fully-elevated; Project by KidexSdn Bhd, temporarily shelved
KIDEX	2,420	14.9	162.42	48 years	

Source: Malaysian Highway Authority Annual Reports, 2008-2012; Websites of concessionaires.

Note:

¹⁴ The Sun, 12 August 2014.

EDL	Eastern Dispersal Link in the State of Johor, linking NKVE to Johore-Singapore Causeway
AKLEH	Ampang-Kuala Lumpur Elevated Highway
DUKE	Duta-Ulu Kelang Expressway
NPE	New Pantai Expressway
LDP	Lebuhraya Damansara-Puchong
SLE	Second Link Expressway linking TanjungKupang, Johor to Tuas, Singapore
Besraya	SungeiBesi Expressway
SPRINT	SistemPenyuraianTrafik KL Barat (Western KL Traffic Dispersal System)
MEX	Maju Expressway (KL-Putrajaya Expressway)
SUKE	SungeiBesi-Ulu Kelang Expressway
DASH	Damansara-Shah Alam Highway
EKVE	Eastern Klang Valley Expressway
KIDEX	Kinrara-Damansara Expressway

The toll concessionaire has not been allowed to collect toll since the expressway has been operational from April 2012. This long impending decision from the government has not been very favourable to MRCB's cash flows and profitability, despite of the compensation payment from the government. As illustrated in Table 6, the total interim payments received by MRCB up to 30 June 2015 amounted to MYR287.6 million, translated to approximately MYR11million per month.

Table 6: Interim Payment from Government

	2012 ^(a)	2013	2014 ^(b)	Total
Interim Payment (MYR'000)	68,277	100,287	119,388	287,592
Duration (months)	8	12	6	26
Monthly compensation		MYR 11,075,000		

Source: MRCB Annual Report 2012 & 2013; Interim Report for the Financial Period ended 30 June 2014.

Note: (a) From May 2012 onwards
(b) Up to 30 June 2014

The decision to allow toll collection from 1 August 2014 not only translates to toll proceeds in the form of cash, but also enables the company to predict with more certainty on its revenue, and manage its operating and maintenance (O&M) expenditures. It is very likely that MRCB's proceeds are expected to be more than the government compensation of about MYR11 million per month. The commencement of toll collection would help to cover all its O&M expenditures, finance cost, and obligations to its shareholders.

II.B.3 Impact on government

The government made the announcement of acquiring the EDL expressway on 10 September 2012. The government made this announcement so that the expressway can be continued to be toll-free, as pledged by the government earlier to the public. Pending the conclusion of the take-over, the government agreed to make interim payments commencing 1 May 2012 to reimburse MRCB the operating and maintenance expenses inclusive of finance cost related to the expressway.

The Government has up to 30 June 2014 forked out a total of MYR287.6 million to compensate the concessionaire, MRCB Lingkar Selatan SdnBhd for the shortfall in toll revenue due to the delays in commencement of the toll collection. This payment is of utmost important to MRCB as it has bearing on the ability of MRCB to repay the bondholders of EDL. Pending the take-over by the Government, MRCB has placed the EDL as Service Concession Asset (SCA) for sale valued at MYR1,321 million.¹⁵

After two years, the government has finally decided to allow toll imposition. It is not viable for the government to acquire the EDL from MRCB based on the following reasoning:

- (i) The price that the government offers cannot match that MRCB expects. The construction cost of EDL is estimated at MYR1.254 billion, while the acquisition cost for the government was no lesser than MYR1.7 billion.¹⁶ Based on SERC's further analysis on the future stream of toll revenue, the value would approximately at MYR1.86 billion.
- (ii) Even if both the government and MRCB are agreeable to the SCA value, the government is required to fork out at least a lump sum fixed amount of nearly MYR1.4 billion, being the value of EDL is placed at SCA valued and the premium for early redemption of the bonds or loans.

It would be rather baseless if the Government utilizes taxpayers money to acquire such short 8.1 km highway, that only benefit a small numbers of users, probably less than 2% of the Malaysian population.
- (iii) If the acquisition of EDL is successful, the government must be prepared to incur at least MYR12 million monthly in O&M costs, although this can be offset by the toll revenue. However, the public would certainly expect that no toll charges would be imposed as pledged by the Government. Even if the government decides to impose toll, the charges would likely be affordable to the users vis-à-vis current toll rates. Under such scenario, it will definitely take more lengthy years before the government can recoup the MYR1.4 billion acquisition outlay.
- (iv) Despite the government's inability to sustain the MYR11 million monthly payments to MRCB, the public is still hoping that the government can review the present toll rates imposed by the concessionaire. After weighing the viability of the acquisition and arriving at the decision of allowing tolling, the current toll levels can only be reviewed and lowered to a more acceptable level to the public only if the government obliges to compensate the concessionaire with another interim payment package. Going by this solution, this would imply that it would certainly cost the government to mitigate the public

¹⁵ Source: MRCB Annual Report 2013. The borrowing costs of MYR277,552,058 has been capitalized in the construction cost in relation to the SCA as at 31 Dec 2013.

¹⁶ This was revealed by the Minister of Prime Minister Department, Datuk Abdul Wahid Omar (NST, 5 Aug 2014; Harian Metro, 6 Aug 2014).

unhappiness, but more importantly, this compensation would be disruptive to the government's subsidy rationalization plan.

C. Impact of Symmetrical Toll Charges Imposed from Singapore

The Malaysian Government should also be heedful that Singapore would follow suit to increase its toll rates. Singapore has a long-standing policy of matching its toll charges with that of Malaysia. The matching principle of the toll charges can be tracked way back to the Malaysia-Singapore Second Link project which was opened to traffic in January 1998. The rationale of this symmetrical toll charges is simply to discourage high tolls being imposed by the Malaysian authority, while preventing only one side benefitting from the toll revenue from the crossing. Despite this insistence, the Singapore authority has also come up openly that if Malaysia reduces or sets zero tolls, Singapore would also follow suit.

The Land Transport Authority (LTA) Singapore first announced on 1 August 2014 that it would match the new toll charges based on its usual practice of pegging its rates to Malaysia.¹⁷ Subsequently, on 12 September 2014, the Singapore LTA released the new toll rates that would take effect from 1 Oct 2014 onwards. The current symmetrical toll for Class 1 vehicles (passenger cars) is SGD1.20, payable upon leaving Singapore. To match the toll currently imposed in Johor, the current toll will be raised to SGD3.80, while a toll charge of SGD2.70 will be applicable for cars entering Singapore.

The current toll for cars of SGD1.20 (MYR3.05) would be raised to around SGD6.50 (equivalent to MYR16.45) with effect from 1 October 2014. Thus, the overall total round-trip across the Johor Causeway by private cars will eventually cost almost 5.5 times more to approximately MYR33 from MYR5.95 prior to 1 August 2014 and from the present MYR19.55. Without any other more economical routes, the impact of the toll hike is inevitably seen in the commercial and the trade sectors in terms of business cost, and consequently spill over to the general consumers in the form of price increases.

III. LESSONS LEARNED FROM SINGAPORE-MALAYSIA CROSS BORDER TRAVELLING

The Causeway has been one of the busiest crossings in this region. The two countries shared historical issues and political differences that have manifested into economic competition issues and somewhat strained-bilateral relationship particularly during 1986-1991, and 1997-2003. Historically, there have been ethno-political related events even before the separation of Singapore from Malaysia in 1965. Despite the political separation and being intertwined

with a host of historical events, the two countries seemed to continue with the economic interdependence, but not without lingering circumspect from both sides as commercial rivalry particularly stemming from the strategic sea-location still exists although the two economies are complementary.

Regardless of the complex bilateral relationship or political tensions, there were a couple of policy changes over time that have reinforced and intensified the economic interactions across the two countries.¹⁸ These changes have indeed gradually shaped the developments in the southern tip of Malaysia, which saw daily labour flow from Johor to Singapore, growth in skilled-labour migration, and the rise of Johor as a time-out and shopping destination for the Singaporeans. It is clear that the economic inter-dependence of the two countries is reflected in the extent of human and vehicle flows. On a typical weekday, it was disclosed that more than 114,000 vehicles use the Causeway, with motorcyclists topping the list with 71,772, followed by nearly 33,500 cars; and nearly 75 per cent of these are Singapore-registered cars.¹⁹

The optimism of economic relationship was however dented between 1997 to 2003 with a series of provocations and exchanges between the two leaders; and intensified economic rivalry worsened by the Asian financial crisis. In the past, both countries attempted to improve the relations by addressing the many issues, including significant ones such as the water agreement, land reclamation, territorial and national sovereignty and the KTM issue, and repatriation of Singapore pension funds for Malaysian employees, sovereignty dispute over Pedra Branca (Pulau Batu Putih), airspace issue, and the replacement bridge for the Causeway.

The matching principal of the toll charges can be tracked back to the Second Link project which was opened to traffic in January 1998. The Second Link project was mooted in the late 1980s, arising from the delay at causeway that may hinder cross-border investment growth. As a promise to ease bottlenecks at cross-border, the proposed toll charges for Second Link were twice the charge at the causeway then. The Singapore authorities stated at that time that any toll imposed would need to be shared by both sides, or else both countries would need to impose a toll.

When the project was completed, the proposed toll announced by Malaysia was eight times the causeway rate for cars and 25 times for good vehicles, ensuing an outcry in both countries. The Singapore government reiterated that it would stand by its earlier decision to levy a symmetrical toll with intention to ensure fair distribution of total revenues from the

¹⁸ Some of these changes are related to trade liberalization, foreign investment policies, soaring prices and wages in Singapore and the differences in tax rates. In May 1986, Malaysia lifted the entry fee MYR1 that had been levied on Singapore vehicles since 1978. The higher value-added tax create incentive for consumer to cross the border to shop.

¹⁹ This was revealed by Dr. Tai Tuck Leong of Perunding Trafik Klasik Sdn Bhd in an interview with *The New Straits Times* in 2006, as quoted in Barter (2006).

¹⁷ From the media statement by Singapore Land Transport Authority (LTA) dated 1 Aug 2014, accessed from www.lta.gov.sg.

toll collection. Nevertheless, Singapore urged Malaysia to lower its proposal as it is in its interests to encourage goods traffic across the border. On the other hand, Malaysia while having its economic development agenda, realized that Johor's economy obviously leverages on Singapore, but has been cautious of Singapore's transshipment role over its own ports, including Pelabuhan Tanjung Pelepas (PTP).

Barter (2006) revealed that the lack of little-discussion of tolls have been important in its own way, and guise as 'bargaining chips' in formal bilateral relationships. Although being locked in multiple unresolved issues, both Singapore and Malaysia are well aware of the mutual important relations which are marked by high level of economic interdependence, people linkages, and the geographical proximity of the causeway. The key takeaway point from the past lessons is that despite having serious bilateral disputes and the historical political differences, the two countries have managed to co-exist successfully. The lacklustre cooperation efforts to address single issue of toll or transport link are somewhat associated to the test of more complex multidimensional agendas.

IV. THE ANALYSIS OF TOLL PRICING

In view of the concerns arising from the increase in the toll charges, this paper attempts to find possible solutions to the issues surrounding the EDL tolled highway project focusing on the pricing of the EDL expressway. This section examines the options available to mitigate the impact by making toll adjustments, working out the lowest possible rates for the public while essentially ensuring the toll structure's ability to recoup the capital investment.

Moving forward, this part of the analysis also highlights the potential shortfall of cash flows when the alternative option is adopted, and the funding challenges on the part of the government should the toll rates be revised downwards. Against the background of tight fiscal constraints, there is likelihood of the government reluctance of successive compensation in the policy of tolled roads like the EDL expressway.

A. *The basis of assessment*

The purpose of this part of the analysis is to evaluate the various toll prices and the impact to the three major groups, i.e. users, concessionaire, and the government. The objective of this assessment is to establish the best possible fair and balanced toll rates to be applied to benefit the consumers and the private concessionaire while not burdening the government.

A financial analysis conducted on each of these options to determine the amount of the total development costs that can be covered by toll revenues. The assessment is based on financial models that aid in establishing whether or not the project is beneficial or affordable to the parties affected by this issue. The models are built based on costs and revenues

associated with the project over the concession period in the form of anticipated cash flows based on the various toll charges proposed. The project indicators will help ascertain whether the proposed toll rates and the amount compensation that is required from the government is potentially workable and consequently.

The determination of toll pricing is critical to the concessionaire as the revenue from the toll highways is usually derived from the toll receipts. The underlying basis of the evaluation of the toll concession is the projected annual net cash flow generated by the traffic flows over the entire concession period. Lengthening the concession period or adopting a higher toll rates may result in the surplus of the revenues to the concessionaire. On the contrary, lower toll rates, or a lower than anticipated traffic volumes may result in a less than projected stream of revenue for the concessionaire. Because the revenue generated from toll roads is long term and incur at differing time period, we adopt the weighted approach of discount rates as normally practiced in World Bank in project evaluation. For this analysis, we assume the weighted average cost of capital (WACC) of 10.3%, weighted against cost of borrowing, cost of equity as well as interest-free loans. The Net Present Value (NPV) of future cash flows is a common method used to calculate the cash flow value of a long term investment. The NPV of EDL expressway is the sum of the present values of the annual cash flows (toll revenues less expenditures) generated during a specified period of time.

The base case assumption is illustrated in Appendix 2. The traffic projection is based on the assumption that current 60,000 vehicles daily is expected to rise by 5.5% per year, but expected slowdown over time as the base increases. By year 2035, the traffic growth for Class 1 vehicles is capped at 3% per year.

One of the most obvious costs associated with the EDL is the capital costs of construction. Other costs involved are costs for toll operations, maintenance of the expressway, upgrading costs, interest payments, and other costs related to providing the facilities to the users.

B. *The earlier toll revenue estimation*

The expected toll revenue is a major consideration as the revenue is major source for sustaining its operating expenditure and loan payoffs. Toll revenues for the entire concession period are generated from the vehicle (private and commercial) traffic at the differing toll rates as agreed upon in the Concession Agreement (CA). Hence, the changes in toll revenue over the concession period up to 2042 are primarily attributable any changes in traffic volume, the change in the mix between private vehicles and commercial vehicles, and the toll rates.

The basic premise of determining the toll rate is to consider the financial situation of the toll concessionaire or operator,

and the road users. Fundamentally, the toll rates impose should at least satisfy the following requisites:

- (i) The stream of revenue generated from the toll concession should cover the operating and maintenance costs during the duration of tolling;
- (ii) The revenue collected by the concessionaire is sufficient to recover the construction cost and to pay off the interests and loans within the required time period and provide adequate fair returns to the concessionaire in undertaking the project.
- (iii) The toll rate should be within the affordability of general consumers and commercial users. When the toll rate is too low, the capital investment cannot be adequately recovered, thus may jeopardize the operations and maintenance of the expressway and other future development or extension related to the EDL project.

With the present toll charges as described in The toll rates imposed may reflect a revenue-maximizing pricing approach where the pricing for the expressway has been set at a level resulting in the highest toll revenue for the private concessionaire. In terms of returns on investment, the IRR is approximately 23% vis-à-vis the WACC of 10.3% and the assumed cost of equity of 22%, with a payback period of nearly 6 years.

Table 7 in the earlier section, the total toll collection for the entire concession period until 2008-2042 is estimated at MYR14.27 billion, generating a net cash flow of MYR12.50 billion. This stream of revenue produces total revenue of MYR1.86 billion in NPV terms over a 34-year period. The current toll pricing produces strong surplus of cash that can adequately cover the capital and operating costs throughout the life of the EDL project as shown in The toll rates imposed may reflect a revenue-maximizing pricing approach where the pricing for the expressway has been set at a level resulting in the highest toll revenue for the private concessionaire. In terms of returns on investment, the IRR is approximately 23% vis-à-vis the WACC of 10.3% and the assumed cost of equity of 22%, with a payback period of nearly 6 years.

Table 7 below. The toll rates imposed may reflect a revenue-maximizing pricing approach where the pricing for the expressway has been set at a level resulting in the highest toll revenue for the private concessionaire. In terms of returns on investment, the IRR is approximately 23% vis-à-vis the WACC of 10.3% and the assumed cost of equity of 22%, with a payback period of nearly 6 years.

Table 7: Summary of Financial Analysis

Summary of Financial Analysis (in MYR million)	2012 to 2015	2016 to 2025	2026 to 2035	2036 to 2042	Gross Cash Flows	Net Present Value (NPV)

Revenues	501.6	3,220.3	5,528.8	5,020.4	14,271.1	3,032.5
Expenditures	1,027.2	204.1	275.9	260.0	1,767.1	1,169.7
Cash Flow	(525.5)	3,016.2	5,253.0	4,760.4	12,504.0	1,862.9

The average monthly net cash flow before debts repayment in 2015 after taking into account financing cost is estimated at about MYR4.97 million. This has not taken into account the repayment of loan principal which will only commence in 2018 for the 18-year Senior Sukuk and 20-year Junior Sukuk.

While the present toll rates may satisfy the financial requirements for a return on investment (ROI) on the part of the private concessionaire, the present toll rates are deemed to be exorbitant from the perspective of the users, and therefore may not necessary meet the social and commercial needs of the users.

C. Analysis of alternative options

The imposition of the current toll charges have led to the public outcry due the adverse impact on individual consumers and commercial enterprises. For the purpose of this paper, SERC will analyse a number of alternative toll values to understand the impact of the variation on the concessionaire, hence providing a meaningful assessment of the toll rates on the revenue drivers. An assessment of the alternatives options allows a test of pricing options in order to determine the feasibility of a project. The impacts of value pricing were assessed on the basis on the ability to meet the goals of the private concessionaire while providing better benefits to the users and the government. The revenue generation provides financial incentives to implementing the value pricing that can cover the capital and operating costs.

This evaluation is also intended to seek a viable solution to the current high toll rates that the consumers are facing while ensuring that the concessionaire company remains viable and able to operate efficiently. The seven case scenarios in terms of toll rates and concession period that are evaluated are:

- Case 1 Impose current toll rates, but for single way only
- Case 2 Increase 10% from previous CIQ rates, and impose for two ways
- Case 3 Revert to previous CIQ rates, and impose minimal toll on EDL on single way
- Case 4 Revert to previous CIQ rates and impose 2 ways, plus impose toll on EDL
- Case 5 Revert to previous CIQ rates for both ways, plus impose minimal toll on EDL to 2050
- Case 6 (a) Propose New Rates for CIQ, plus impose toll on EDL for 45 years
(b) Propose New Rates for CIQ, plus impose toll on EDL for 50 years

(c) Propose New Rates for CIQ, plus impose 1-way toll on EDL.

Case 7 Propose New Rates for CIQ, plus impose toll on EDL for both ways for 50 years

The above scenarios appraise the impact of maintaining the previous toll rates and lengthening the concession period on the financial situation of the concessionaire. The stream of revenues generated by toll collection from the different scenarios is estimated with the assumption that traffic volumes will not be affected by any changes in the toll rates. It should be noted that the gross revenues used for this analysis are considered to be very preliminary in the absence of actual operational cost data and traffic volumes. The scenarios also evaluate the bearing of imposing toll on EDL from the perspective of the consumer, government as well as to the toll operator.

D. Analysis and interpretation

The financial indicators based on varying toll revenues from the perspective of the concessionaire are summarized in Table 8. The estimated average monthly toll revenue in 2015 showed that all options are able to generate sufficient proceeds to cover the monthly operations and maintenance of the EDL expressway. However, most of the options fall short in meeting the obligation of financing cost estimated at approximate MYR7 million monthly.

Table 8: Summary of Financial Indicators

Scenario	Average Monthly Revenue ^(a) (MYR mil)	NPV (MYR mil)	Payback (years)
Current Toll Rates (1 August 2014)	13.036	1,862.9	5.81
Case Scenario:			
1 Present toll rates; collect 1-way	7.578	719.7	7.89
2 Increase 10% from original rates; collect 2-way ways	4.674	(142.2)	13.42
3 Original rates + Collect from all EDL users	4.682	(162.9)	13.65
4 Original rates 2 way + Collect from all EDL users	6.801	185.8	9.93
5 Original rates 2-way + all EDL users until 2050	6.801	296.5	9.93
6(a) New Rates 2-way for 45 years	5.086	4.7	12.89
6(b) New Rates 2-way + all EDL users for 50 years	7.650	461.8	9.32
7 New Rates 2-way + 2-way EDL user for 50 years	10.214	994.9	7.64

Note:

^(a) Estimates for 2015.

On the basis of financial analysis of the various scenario options to address the current high toll rates, some of these alternatives fell short as viable solutions from the standpoints of either the concessionaire or the government, or both parties. However, we can attempt to make the following conclusions:

- (i) It is highly unlikely that the toll rates be revised to the vicinity of the previous rates of MYR2.90 for Class 1 vehicles. Maintaining the previous rates or increasing by a moderate 10% would not be beneficial to the concessionaire as the expected revenue over the concession period up to 2042 would not be sufficient to satisfy the pre-requisites as discussed in section 4.2.
- (ii) While the low toll rates may please the general public and merit in terms of cost containment, the approach to suppressing the toll rates or adjusting the previous rates by 10% would imply that there is high possibility for government to pay for any differences by way of monthly compensation to the concessionaire.

Even by additional collection at EDL as depicted in Case 3, the approach to maintain the original CIQ rates or increasing it by 10% is still not workable for the concessionaire, unless with compensation from the government.

- (iii) The strategy of pricing the toll at current rates on single-way collection, i.e. MYR 9.70 for Singapore-Johor direction could be feasible. At a single-way collection, the EDL project would still generate positive cash flow to pay for operating and maintenance cost, while maintaining adequate margin for loan servicing. However, the financial analysis appeared to be unfavorable to the operator since the rate of return is lesser than the weighted cost of capital.

Nevertheless, for the daily commuters (Class 1 vehicle), this pricing strategy would still constitute a significant increase of 234%. For the business and commercial sectors, there is high chances that they are unable to absorb the over 220% cost increase (versus the rates before 1 August 2014), without having squeezed margins, or without having to pass the cost onto their customers.

- (iv) The extension of toll collection period is will benefit the concessionaire in terms of generating a higher NPV, as demonstrated in Case 5 in comparison with Case 4.
- (v) The analysis revealed that if the toll rates have to be revised downwards to lessen the burden on the public and commercial, or to avert government's compensation, then the toll pricing should be designed to include collection at EDL. The financial analysis on Cases 6 and 7 divulged the point that the inclusion of the EDL traffic volume that is currently not levied would make a huge difference in providing a win-win solution for the three parties involved.
- (vi) As illustrated in Table 8 above, the assessment of Case 7 exhibits the potential of collection from EDL and extending the length of concession terms in achieving a

more balanced approach of pricing that address the concern the interested parties. The concessionaire is expected to be minimally compensated, unless the government trade-off with a longer concession period²⁰.

V. RECOMMENDATIONS ON PAY-PER-USE TOLL STRUCTURE

While the public appreciate the objective of the EDL to disperse traffics and to reduce traffic congestion; and the collection of toll charges are being used for the maintenance of the EDL, due consideration should be given to the toll payers who currently use the lesser part of the EDL. On the other hand, the public can no longer expect to enjoy toll-free facilities indefinitely, because any prolonged toll-free would mean that the government has to borne the compensation to the concessionaire using tax payers' money.

From our assessment, we can conclude that there are two very crucial issues facing the implementation of toll on the EDL. Firstly, the increases from both countries would indefinitely Increase the cost of business, and consequently would have knock-on effects on the prices of goods, thus adding burden to the general public. Secondly, the manner the toll issue either being address or being eluded by certain parties lead to a conclusion that we would not expect any cordial cooperation to tackle this challenging issue with the intention to enhance the competitiveness and benefit of both parties, at least not for the immediate term.

This leads to the conclusion of our analysis that the immediate strategy is to address the issue on our part quickly. Indeed, we have more control over our policy, and if the toll rates have to be reviewed downwards to lessen the burden on the public and on commercial grounds, while averting government's compensation, then the toll pricing should be designed in such a way to include collection along EDL expressway. The government should re-consider its decision on the current rates on grounds of fairness, since the majority consumers who get into the CIQ complex and towards Singapore are the ones less likely to use the entire EDL expressway.

A. Proposed solutions to the current toll rates

The analysis in Section 4 shows that it is no longer practical and sufficient to maintain the previous rates of MYR2.90 (Class 1), unless the government is prepared to compensate the concessionaire of any shortfall as stated in the Concession Agreement signed in 2007. It can also be reasoned from the analysis that if the present applied toll rates have to be reduced in order to lessen the burden on consumers and to keep the business cost in check, the best option would be to include a minimal collection on EDL users.

²⁰ The summary worksheet analysis of the above alternatives with adjustments to the toll rates and concession periods are not shown here for brevity reasons and is available upon request in writing to the corresponding author.

Fundamentally, the proposed toll structure should meet the pre-requisites of generating the a stream of revenue that are sufficient to sustain the operating and maintenance costs, and payment of interests on loans while providing adequate and fair returns to the concessionaire. The toll structure should be within affordability parameters of general consumers and commercial users, while minimizing the government's burden or conceding funds as compensation by forgoing other potential projects that potentially have multiplier effects on the economy

The appraisal of a variety of options in Section 4 concludes that the inclusion of EDL traffic volume would have made huge differences in providing the required revenue to sustain the operations of the expressway. The best solution to address the present controversy is for the government to re-consider its decision on free-of-charge EDL expressway. Instead, the principles of fairness and pay-per-use at exit points should be highly advocated.

One very crucial determining factor in our proposed structure is the manner of reciprocal and symmetrical toll being charged by Singapore. It is prudent at this stage to assume that any immediate cordial cooperation to tackle this issue would see Singapore retracting their hike intention effective from 1 October 2014. The Singaporean authority is very clear and consistent with their matching policy, thus the ball is very much at the Malaysia's court to reduce the rates.

Based on the above reasoning, the following are 4 viable options to be considered by the government as conceivable Pay-Per-Use solutions to address the impending high tolls issue:

- | | |
|----------------|--|
| SERC Proposal: | Pay-per-Use based on previous CIQ toll rate + toll charges on EDL use |
| Comparison 1: | Reduced CIQ toll rate payable on both ways + toll charges on EDL use at double of current PLUS rate |
| Comparison 2: | Reduced CIQ toll rate payable on both ways + toll charges on EDL use at 1.5 times of current PLUS rate, with extension of concession period. |
| Comparison 3: | Lower than current CIQ toll rate + minimal toll charges on EDL, with extension of concession period |

B. Summary on pay-per-use strategy

With the introduction of Pay-per-use toll collection as proposed above, all users are required to pay for using and gaining benefits of the EDL. It is worthwhile to consider having toll booths at the EDL interchanges, despite earlier explanation that it is not advisable to build two collection booths along the 8.1 km expressway in anticipation of traffic congestion. The possibility of traffic bottleneck, however, can be unravelled by the implementing the cashless toll collection, as already widely practised in most advance

countries. Ideally, pay-per-use toll at Bakar Batu interchange would deal with use users who exit at this interchange to use surrounding roads to the city centre, or to proceed towards the direction of Pasir Gudang. EDL Users exiting at CIQ interchange (without entering the CIQ complex) can also be imposed a fair toll based on distance travelled. As compared to the present narrow way of charging, the scope of coverage would be extended wider with a much lower toll rate. After all, users who are unwilling to pay-per-use do have the alternative of non-toll roads, or prepare to embrace the traffic congestion or longer route in lieu of toll payment.

From our assessment, we can conclude that there are two very crucial issues facing the implementation of toll on the EDL. Firstly, the increases from both countries would indefinitely increase the cost of business, and consequently would have knock-on effects on the prices of goods, thus adding burden to the general public. Secondly, the manner the toll issue either being address or being eluded by certain parties lead to a conclusion that we would not expect any cordial cooperation to tackle this challenging issue with the intention to enhance the competitiveness and benefit of both parties, at least not for the near term.

This leads to our recommendation for an immediate approach is to address the issue within our own jurisdiction quickly. Indeed, we have more control over our policy, and if the toll rates have to be reviewed downwards to lessen the burden on the public and on commercial grounds, while averting government's compensation, then the toll pricing should be designed in such a way to include collection along EDL expressway. SERC Proposal and the respective comparisons are intended for the government to consider the possible manageable and moderate toll rates so that the issue could be resolved without further delay.

C. Other recommendations

V.C.1 Establish toll variations to relieve the burden

Typically tolls vary with distance travelled and based on the type of vehicles. A distinct variation that have been long practiced and adopted is the toll rate according to number of axles and the inclination of the vehicle towards the damage on the expressways. There are other options which can be combined with this variation as measures to lessen the burden on consumers and users of the expressway. Some of these measures can be used to further disperse the traffic, thus creating a higher-value-of-time travelling particularly for vehicles like buses and trucks that merit the charging system.

- (a) Variation according to time and day of the week - Variation by time of day is typically used where congestion causes considerable delays to commuters. For example, In France, 10% of the commuters have re-scheduled their journeys when the tolls were increased 50% in the peak periods. Likewise, if the EDL concessionaire considers introducing off-peak period toll

rates, certain users can opt travelling during those times in order to save cost.

- (b) Tolling by occupancy - Singapore is a good example of congestion pricing, where users are charged according to different times automatically as vehicles pass under the gantries. Such pricing have reduce the number of solo drivers, and shifting the trips to non-peak time, thus led to less travelling time. Based on this model, the authorities may wish to consider adopting similar approach on our highway system so that users can capitalize on the incentives for off-peak toll rates or waiver for high occupancy vehicles.
- (c) Loyalty or Discount programs. With the introduction of electronic tolling system, such programme is now more feasible to be implemented. Furthermore electronic tolling can be convenient and benefit from lower collection cost which should be passed back to consumers. For example, MRCB can accord special privileges to frequent or daily users with special privileges such as huge discounts of up to 50% if they achieved a minimum of 50 transactions per month.

V.C.2 Encourage the use of public transportation

Instead of driving across to work daily, Malaysians working in Singapore can opt for a more economical option for travelling by road to Singapore by using public transportation such as bus or by rail, i.e. increasing public bus network and frequency. Although toll charges on busses have also increased, the choice of using public busses would help to ease the cost burden of driving across. A more regular train service in order to support commuters who would be opting for cheaper alternative to crossover to Singapore²¹ could allow commuters to switch to public transportation instead of driving.

V.C.3 New revenue vs AEC 2015 implementation

If the government decides to review and subsequently revise the toll rates downwards, it can make up for the loss in toll revenue by re-considering the imposition of vehicle entry fee for foreign-registered car entering Malaysia. Singapore has been practicing this for many years, and has since 1 August 2014 revised the vehicle entry permit (VEP)²² fee from SGD25 to SGD30 per day for private cars. For goods vehicles, the GVP fee is now at SGD40 per month from SGD10. The fees on motorcycles remain unchanged at SGD4 per day. Although the GVP may seem to have increased by 300%, one should not overlook the fact that the GVP fee has remained at SGD10 per month per vehicle since it was first

²¹ There are current five KTM train services daily from Johor Bahru (JB) Sentral-Woodlands CIQ and vice-versa, but these may be far from adequate in meeting the peak hours crossings. The trains departing from JB Sentral are 0500/0620/1140/1405/2105 hrs, while departing from Woodlands CIQ are 0820/1605/1830/2000/2330 hrs.

²² VEP are only imposed during weekdays (Mondays to Fridays) during 2am-5pm; and during Singapore school holidays (2am – 12 pm). No VEP fee is payable for other times during weekdays, Saturdays, Sundays and Singapore public holidays.

introduced way back in 1965. The VEP was last raised in 1994 to SGD30 from SGD20, but was revised downwards to SGD25 in 2004.²³ On the counterpart, the Malaysian Government have decided to impose VEP for all foreign vehicles coming into Malaysia from all border checkpoints, commencing with the Johor-Singapore Causeway in October 2015. A vehicle entry permit fee of MYR20 per vehicle was proposed and deemed reasonable so as not to discourage the inflow of vehicles from Singapore, particularly the buyers and consumers who have been supporting the retail, food and recreation businesses in the southern region.²⁴ Johor's economy is also reliant on the crossovers by Singaporeans to enjoy the lower prices. Nevertheless, the implementation is likely to be postponed owing to sensitivity as many see this implementation will lead to further tit-for-tat with Singapore.

V.C.4 Engagements and public consultation

- (a) The authorities should have more engagements with the commercial enterprises and solicit views from the consumers before revising the toll charges. The actions of increases by both Singapore and Malaysia parties at a same time are already perceived as a no coincidence, but misconstrued as tit-for-tat. Whether it is pure coincidence or retaliation, the private sectors of the two countries should also be working together to deliberate and address these issues, which if not resolved, would have spillover effects that potentially cause pressure to the trade and commercial, and distress to the general public.
- (b) Learning from our past experiences, the greatest impediment to tolling is the public acceptance of the toll rates. Expressways usually must be of a sufficient economic size or length to offer the ample benefits that merit the toll payment. The government must therefore ensure that the toll project must not be too costly to be financed solely with affordable toll rates.
In most of our expressways projects, the Government agrees to compensate the concessionaire for infringement of the concession agreement commonly associated with the agreed toll rates. But, the obligation and the ability of the government to provide compensation are very critical issues that should no longer be allowed to persevere. Public resistance towards tolling can be minimized only if there is more transparency on the project and efforts to instill the concept of road pricing to the public. Therefore, any government policy in deciding on toll rates should be based on comprehensive evaluation of financial benefits from the perspective of both toll operator and the users or public.
- (c) Effective Outreach Efforts

²³ The revision downwards to SGD25 was to be in line with costs of Singapore-registered vehicle, which was lower during that period. Singapore vehicles are subject to COE (Certificate of Entitlement) and other taxes.

²⁴ The VEP fee imposed only affect 1 in 10 cars entering Singapore, as others normally enter and stay on VEP-free days or hours.

Public outreach has proven effective in garnering support for value pricing projects and creating an understanding of the tolling concept. To effectively gain public support, it is important that the public perceive the need for value pricing. Although the Government have given its assurance of no-tolling, whether driven by political reasons or social considerations, it is important that the authorities to view the situation as critical enough to recommend the tolling solution. This involves bringing all the stakeholders together to help create buy-in from the users; and clear communication to the users on the needs to warrant tolling, the value of the toll in addressing the problem, and finally the benefits of sharing the cost efficiently.

- (d) Given the profound implications of privatization of roads, the government should be accountable for allowing the toll projects. The authorities must ensure that no deal should be approved unless the general users and business operators have the opportunity of public consultation. The authorities should no longer undermine the importance of transparency and public interest. Instead, the government should take more effective role in overseeing the agreements with concessionaires that may have adverse implications and knock-on effects on the national economy.

Finally, although the government have taken two years to make its assessment on this matter, it is fair that the governments re-look and re-consider the appeals and come out with an appropriate and feasible solution for the benefits of all parties, i.e. consumers, commercial, concessionaire and government.

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POSTSCRIPTS

After so much of controversial issues, in the Malaysia 2018 National Budget Speech on October 2017, the Government of Malaysia decided to abolish toll collections at Eastern Dispersal Link (EDL), Johor, effective 1 January 2018.

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Appendix A. Map of Eastern Dispersal Link (EDL) in the Southern region of Malaysia linking the North-South Expressway to the Johor-Singapore Causeway via the CIQ Interchange

