

Avoiding Roads to Nowhere:
Fuel levy as a means of road financing to stimulate economic growth

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Common assumption holds the notion that roads have a significant role in stimulating national and local economies. Countries with higher densities of road infrastructure tend to have higher economic growth, while those with lower densities have lower economic growth. Yet, due to various reasons, countries experienced underinvestment in infrastructure development, including road network development. Given that road infrastructure plays a pivotal role in bolstering the economy, it is pertinent to address the problem of underinvestment in road infrastructure, particularly in Indonesia.

Road vehicles are predominant modes in Indonesia, accounting for 70 percent of freight ton-km and 82 percent of passenger km¹. Currently, Indonesia faces problems in financing road development. Because of the economic crises in 1997-1998, the government spending decreased significantly although in the past two years we saw that the spending rate increased to the pre-crisis level. However, as demand keeps increasing, there is a significant gap in financing the road development. While it is true that public sector largely accounts for the bulk of road infrastructure investment in Indonesia, the role of private sector and state-owned enterprise is gradually increasing, although it is still limited in the provision of toll road investment and management. Hence, Indonesia needs an alternative financing solution to overcome the problem of financing road infrastructure.

Other countries have used fuel levy to finance bulk of their roads to a degree that local governments' fiscal burdens decreased significantly. Take for example the United States' experience in building their road networks. The Federal government established the highway trust fund in 1956 as a means to finance road networks that connected one city to another, one region to another. Before the fund was established, most of the bulk went to federal and local governments and thus the quality of roads varied based on regions' ability to stimulate their local economies and collect income and property taxes. After the highway

¹ World Bank. *Investing in Indonesia's Roads: Improving efficiency and closing the financing gaps* (Road Sector Public Expenditure Review 2012).

trust fund was established, local governments' spending decreased considerably and only accounted for less than 10% of total expenses to build roads.

In Indonesia, a study by the World Bank estimated that the use of motorcycles increases by 9 percent per year and other vehicles by 5 percent annually. Against this number is the fact that until 2009 Indonesia has only 477,079 km of road network. Although this number tripled since 1980, the road density is still far from sufficient in accommodating the rapid growth of vehicles in Indonesia. Of this number, only 50.5 percent of road network is in good condition, while the remaining portions are in fair and poor conditions².

After decentralization, qualities of sub-national roads worsen because local governments only allocate budget for new development and not for regular maintenance. Further, local governments still rely on inter-governmental transfers as a means to finance road development. Although central government stipulated road user charges as part of local governments' revenues, there are not many who use part of these user charges to finance their road infrastructure development (including regular maintenance). A study by World Bank even estimated that for US\$1 spent for maintaining road network will generate saving approximately US\$4.6 in user cost. Thus, a regular maintenance of roads helps road users in saving regular costs and in the long run it may propels local and regional economies.

One possible solution in financing road developments is through road user charges, in particular via fuel levy. Many countries have utilized user charges in financing their road development with positive outcomes³. However, even though Indonesia has also road user charges (including fuel levy), local governments (provincial and district/municipal

² World Bank. *Investing in Indonesia's Roads: Improving efficiency and closing the financing gaps* (Road Sector Public Expenditure Review 2012).

³ Gwilliam, Ken & Shalizi, Zmarak. 2009. Road Funds, User Charges, and Taxes. *The World Bank Research Observer* **14** (2): 159-85.

governments) use the amount collected for various development programs, and not exclusively for road financing. Fuel levy has increased five times from 2001 to 2009, and accounts for 13.5 percent of total road user charges, yet local governments still rely on special allocation fund (*dana alokasi khusus/DAK*) and general allocation fund as sources of road financing. General allocation fund and own revenue account for approximately 90 percent of total expenditure and the remaining comes from special allocation fund.

By shifting the financial source of road development from inter-governmental transfer fund to fuel levy, local governments can increase the proportion of local budget to finance development expenditure in other sectors such as health and education. Indeed, between 2001 and 2011, the proportion of development expenditures for social services (such as health and education) declined from 34.75% in 2001 to a mere 2.74%.⁴ Using fuel levy as the main source for road financing may help local governments save approximately 10 to 12 percent of their annual budget.⁵ Thus, local governments (in particular municipal and district governments) can spend this saving for other sectors, such as health and education.

However, there is a caveat to this solution. The central government should allocate a portion of fund coming from fuel levy not only to finance road development but also to provide incentives for local government in creating transit-oriented development policies. Failure to provide incentive for mass-rapid transit will put additional burden on local governments, as this approach encourages users to drive instead of using transit and thus it creates a vicious circle in terms of road network provision. Local governments are encouraged to create mass-rapid transit with a portion of their expenditures for this service financed through national transportation fund.

⁴ Author's own analysis based on local governments' budget. Data were obtained from Directorate General of

⁵ The World Bank study (2012) calculated that local governments in average spent approximately 10 to 15 percent of their total spending on sub-national roads.

Further, as more than 60 percent of national population lives in the island of Java, the central government should take a different approach in using this fund. For the island of Java, fuel levy is used to finance road development (including regular operation & maintenance). Local governments (especially at district and municipal level) can tap this fund based on the proportion of road utilization in their areas. The higher the utilization of the road is, the higher the fund that a local government can take. However, there should be allocation for mass-rapid transit development. The proportion for road network development (including operation & maintenance) and mass-rapid transit can be discussed between the central government and the association of local governments based on their specific needs. For the road development outside the island of Java, besides funding from transportation fund, the central government can allocate funding from national budget. This ensures that the central government still focuses on the distributive policy (even for infrastructure development) while local governments focus on the development policy⁶.

⁶ Peterson, Paul E. 1981. *City Limits*. University of Chicago Press & Peterson, Paul E. 1995. *The Price of Federalism*. Washington, D.C.: Brookings Institution Press.

Table 1. Composition of road financing in Indonesia (based on the use of fuel levy)

	Sub-national road (provincial road)		Sub-national road (municipal & district road)	
	Road development	Regular maintenance	Road development	Regular maintenance
Java, Sumatra	Use fuel levy	Use fuel levy	Use fuel levy	Use fuel levy
Kalimantan (East Kalimantan)	Use fuel levy	Use fuel levy	Use fuel levy	Use fuel levy
Kalimantan (rest of the region)	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund
Bali	Use fuel levy	Use fuel levy	Use fuel levy	Use fuel levy
Nusa Tenggara (West + East)	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund
Maluku	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund
Papua	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund	A combination of road trust fund & inter-governmental transfer fund

Source: author analysis

Because fuel levy is part of provincial and district/municipal governments' revenues along with the annual vehicle license fee and the vehicle ownership transfer fee, a sharp reduction is expected once central government institutes fuel levy as the main source for financing road development. In 2001, fuel levy amounted to IDR 138 billion and increased significantly to IDR 4,160 billion in 2009⁷. While it seems the number is huge, it only accounts for 13.5% of total road user charges. The central government should stipulate that 70 percent of road user charges go to local governments, even though the regulation does not guarantee that these funds will be used for financing road development. Despite

⁷ World Bank. *Investing in Indonesia's Roads: Improving efficiency and closing the financing gaps* (Road Sector Public Expenditure Review 2012).

the fact that user charges (including road user charges) only accounts for 2.48 percent of local governments' revenue⁸, nevertheless local governments will face difficulty in finding replacement for fuel levy as one of their source of own revenues⁹.

To avoid such a situation, central government can encourage local governments to seek alternative mechanisms and approaches to increase their own revenues. Local governments can use approaches such as land value capture or land based financing to replace fuel levy. Indeed, as local communities realize that road developments are paid by their own money, they will gradually vouch local governments to seek for alternative approaches in financing local economic development and not merely rely on the inter-governmental transfer fund as the sole source of development expenditure.

⁸ Mahi, Raksaka. 2002. *Managing Local Revenue in Indonesia*. Paper presented for 'Can Decentralization Help Rebuild Indonesia?' conference, sponsored by the International Studies Program, Andrew Young School of Policy Studies, Georgia State University. Retrieved from http://aysps.gsu.edu/isp/files/ISP_CONFERENCE_INDONESIA_MAHI_PAPER.pdf

⁹ There are a number of mechanisms that can be used by local governments in increasing their own revenues, such as land value capture, payment in lieu of taxes or land based financing. However, it is not the scope of this essay to discuss these approaches. For future discussion please see Rakow, Ronald W. 2013. Payments in Lieu of Taxes: The Boston experience. *Land Lines* January 2013; Vetter, David Michael & Vetter, Marcia. 2011. Land-based Financing for Brazil Municipalities. *Land Lines* October 2011; Sandroni, Paulo Henrique. 2011. Recent Experience with Land Value Capture in Sao Paulo, Brazil. *Land Lines* July 2011.