

**THE POSSIBILITY TO INITIATE
LOCAL ROAD MAINTENANCE FUND IN INDONESIA**

THESIS

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AND

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PREFACE

In current situation in Indonesia, the local roads amount to 81% of total length of road network in Indonesia and less than half of them is in good condition. There are funding problem of local road maintenance in regard to the lack of fund and competing funding needs. Local road maintenance in Indonesia is financed through annual government budget, which revenues come from various source including vehicle ownership tax. In the late 2009, the government of Indonesia has enacted the new regional taxes act, which one of the rules regulates that the earmarked revenue from vehicle ownership tax is allocated to the road development and/or maintenance and the improvement of public transport facility and mode. Hence, based on the current situation, the initiative to implement local road maintenance fund in Indonesia, by using earmarked revenue of vehicle ownership taxation is interesting to be studied.

I have been working on local road agency in Indonesia, specifically in *Dinas Binamarga Kabupaten Cianjur*. I experienced myself that the allocation of the local budget for road maintenance, especially routine maintenance, is always varying from year to year and being less than other road works. I was wondering whether there are conditions that acknowledge the importance of road maintenance and there is a way to specifically allocate the annual local budget to it. Those curiosities motivate me to do this research and the result in this research more or less meets my expectation.

I realize that it is impossible to write this thesis without any supports. First of all I would like to express my biggest gratitude to Allah swt. Secondly, I would like to express my thankfulness to my supervisors; Dr. Ir. Taede Tillema and Ir. Heru Purboyo H.P., DEA., Ph.D, who always support and motivate me to make a good academic writing and keep my thesis on track. I would also say my big appreciation to my family in Indonesia, especially my mother – the greatest person I have ever had in my life, and my dearest Noorway Fatimah Ratnaningsih, who always support me and believe that I can finish this study. Furthermore, I would like to express my appreciation to *Bappenas* and NESO which has granted me the scholarship and the Government of Kabupaten Cianjur which has granted the permit for me to do this study. My great thankfulness also goes to my colleagues of DD ITB-RUG'08 who always be supporting partners and friends in the happiness and hardship. Finally I would like to express my appreciation, I can not mention one by one, to all people who have supported me in this study and writing this thesis.

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ABSTRACT

by

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This research was started by indication of the funding problem of road infrastructure in Indonesia. There was lack of fund for local/municipal road infrastructure development and maintenance in Indonesia. Road was not maintained properly and sufficiently. This condition led to a deterioration of road and to the higher transportation cost. Moreover, there were also competing local funding needs and tensions between sectors. Revenue obtained from vehicle ownership tax was not fully nor specifically allocated to fund road provision and maintenance. Along with other local natural revenues, this revenue was utilized to fund and to provide all kinds of public services.

This research was aimed to understand the vehicle ownership tax practice in Indonesia and the possibility to initiate the local road maintenance fund in Indonesia by using vehicle ownership tax as revenue source. The research methodology which was used comprised the policy document analysis and literature review. Above all, this research has been done comprehensively, starting from the review of the transport pricing policy, road maintenance and road funding concepts. Within legal, organizational, financial and operational arrangement; the vehicle ownership taxation and road management in Indonesia and the international practice of road funds were studied. Finally, based on the lesson learned from other countries and what Indonesia could learn on each lesson, the possibility to initiate the local road maintenance fund in Indonesia was formulated.

Keywords: local road, road maintenance, local road maintenance fund, vehicle ownership taxation, Indonesia.

GUIDELINE FOR USING THESIS

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CHAPTER 1

INTRODUCTION

1.1 Background

One of the regional development instruments is infrastructure. Infrastructure is needed by people to support and to improve their quality of life and plays a role in regional economic development. Core infrastructure provision usually needs a large sum of funding. Since the government is the authority or a side who has the funding, usually the government is responsible to provide basic infrastructure; such as roads, water and electricity; at the first stage of development. The government provision which leads to the availability of adequate infrastructure will encourage private sectors to invest (LPEM, 2005). The availability of infrastructure firstly provided by government will attract the new business from private sector to come.

Roads as one kind of infrastructure play major roles in people's daily activity. It can provide the availability of the movement of people, goods and services. It also provides accessibility and interconnection between areas. For many remote and isolated areas, availability of basic road transport services is a prerequisite for reducing poverty and providing access to health and education services, information and markets (World Bank, 2004a).

By understanding the importance of the role of road infrastructure, it is also needed to understand that the road should be maintained or even improved, to keep or to increase its level of services. For the public roads, the maintenance and the improvement has become the responsibility of the government; and these

processes clearly need funds to do so. Almost all forms of transportation cost money (Van Wee, 1995:99).

Based on the road status of authority, public road in Indonesia is divided into three categories, which are national road, provincial road and local/municipal road. The provision and the maintenance of public road are the responsibility of each government level, according to the road status respectively. For instances, it is the responsibility of local government to allocate the resources in the local budget to deliver the provision and the maintenance of local roads.

One of the funding sources for the road provision and the maintenance, as allocated in national/local government budgeting, is revenue from imposing taxes (Musgrave, 1976). The taxes are not only collected and managed by national government but also by local government. Through the decentralization, the local government has been given the authority to impose local taxes.

Vehicle ownership tax is one type of taxes which is included as local taxes in Indonesia. This tax is imposed and based on the ownership of the vehicle. Vehicle ownership tax in Indonesia is represented in annual taxes on vehicles; and it can be seen as fixed car tax (Van Wee, 1995). This tax is not only as revenue source, but raising this tax can also be an instrument to internalize external effect of car ownership, such as land use consumption and visual pollution (Van Wee, 1995).

Vehicle ownership is not the only vehicle based tax which can be viewed as road user charges in Indonesia. There are also vehicle fuel tax and vehicle transfer fee. According to a study, vehicle ownership tax is the second big contributor in annual revenues among other vehicle based tax (World Bank, 2004a) and promises stable revenue to the government for performing public expenditures. It is indicated that the administration and the detection of evasion of this tax is simple and inexpensive (Mahadi et al, 1993). Regarding with those characteristics of the vehicle ownership taxation in Indonesia and its relation to the road usage, the vehicle ownership is important to be considered as potential source of road work funding. Moreover, in the regulation which authorizes the implementation of vehicle ownership tax in Indonesia (Act No. 28/2009 Regional

Taxes and Charges), it is mandated that minimally 10% of total revenue vehicle ownership tax is allocated for road development and/or maintenance and also for the improvement of public transport mode and facility.

In Indonesia, each local government has specific agency and one of the function is to collect vehicle ownership tax; namely *Kantor Samsat*. This agency is the representation of the provincial level agency on a local level. Having collected the tax from the vehicle owner, the agency will transfer it to the provincial government. The provincial government will manage and return it back to local government in certain proportion in representation of tax revenue sharing. This revenue sharing can be identified and be counted as original local revenue (*Pendapatan Asli Daerah/PAD*) in the local budgeting.

In the local budgeting, revenue sharing from vehicle ownership taxation can be allocated and be spent to fund the local development which also includes road infrastructure provision and maintenance. However, in the middle of budget constraint for local development, local government also faces competing funding needs (OECD, 1994). All or almost all agencies and services have funding needs which exceed actual resources. Frequently, funds are directed towards the most visible purpose, such as education or health care programs. Moreover, in the same agency there is always a large number of competing funding needs. For example, within road agency there is competition to allocate the resource or budget whether on road rehabilitation or maintenance programs.

As indicated by World Bank (2004a), in Indonesia there is a decline in local/national budget for spending in road development and maintenance. Congestion is another problem; where from supply side, the expansion of capacity is needed. The national and local government needs a lot of money to tackle the road infrastructure problems so it can continue to give adequate services to the public.

This research tries to identify the application of vehicle ownership tax in Indonesia as transport pricing policy and to see its opportunities as revenue source for funding the development and maintenance of local roads. Moreover, the international practices on road maintenance funding will be analyzed by using

Ghana and Pakistan case. These countries are chosen because they have similarity with Indonesia as developing country and in facing poor public road condition, they have been implementing road fund administration to deal with road maintenance up to now, and each country also has various organizational and financial arrangements on its road fund. Pakistan represents the implementation of “first generation” road fund; meanwhile Ghana does the “second generation” road fund administration. To be noted, first generation of road fund is characterized by plain earmarking of government revenues to finance a service that is managed and provided by government departments and allocated to pre defined priorities. Second generation road funds are aimed to support the commercialization of road management, in a new arrangement and characterized by a new autonomous body, managed together with road users and financed ‘off-budget’ by designated road user charges based on user-pays principle (Kumar, 2000). It is hoped that by providing an international practice on each generation will give us the balancing information about them, since we can study the different characteristics of each generation in the international practices. Moreover, the availability of the literatures is also taken into account in regard to choose these international practices. The availability of literatures here includes the literatures are presented in English or Bahasa, accessible to retrieve and helpful to provide the information needed. The discussion of these international practices will be elaborated in legal, organizational, financial and operational perspectives. The lesson learned about road fund practice in general will be drawn and compared with the Indonesian context.

1.2 Problem Statement and Research Objective

It is indicated that there is lack of fund for local/municipal road infrastructure development and maintenance in Indonesia. Road is not maintained properly and sufficiently. This condition leads to a deterioration of road and to the higher transportation cost. Moreover, there are also competing local funding needs and tensions between sectors. Revenue obtained from vehicle ownership tax is not fully nor specifically allocated to fund road provision and maintenance. Along

with other local natural revenues, this revenue is utilized to fund and to provide all kinds of public services.

Considering this funding problem of road infrastructure in Indonesia, this research tries to explore how vehicle ownership taxation as road pricing policy is being applied in Indonesia and how revenue sharing from vehicle taxes can be a revenue generator for local natural revenues, to finance the local road development and maintenance.

This research is aimed to understand the vehicle ownership tax practice in Indonesia and the possibility to initiate the local road maintenance fund in Indonesia by using vehicle ownership tax as revenue source.

Related with the problem and the objective mentioned above, the research questions that will be tackled are:

1. What are the objectives of transport pricing policy, road maintenance and road fund based on international literatures?

This will be the basic framework of the research. The theoretical review from international literatures related with road funding and pricing policy for the road transport will be examined.

2. How are vehicle ownership taxation and road management being applied in Indonesia?

By this question, a general description about local taxes, vehicle ownership taxation, and its revenue sharing in Indonesia will be elaborated within the legal and organizational framework. The research will also define the concept of local/municipal road management in Indonesia including the types and the authority level. This will be elaborated through analysis of laws, regulations, and government structures.

3. What kind of international practices in road funding schemes can be compared with the Indonesian context?

To answer this question, the international practices in road funding for road maintenance which include Ghana and Pakistan cases will be studied and the comparison will be made within legal, organizational and financial

perspectives. The lesson learned about road fund practice in general will be drawn.

4. What is the possibility to initiate the local road maintenance fund in Indonesia, by using revenue gained from vehicle ownership taxation and based on the general lessons of international road fund practice?

Based on the lessons which are obtained from the international practices, the possibility to initiate the local road maintenance fund in Indonesia will be examined. Moreover, the linkage between revenue from vehicle ownership tax and road fund administration will be explored to define the adequacy and stability of road maintenance funding.

1.3 Research Methodology

The method which will be applied in this research is mainly policy document analysis and literature review. The policy documents which will be analyzed are the Indonesian legal documents and policies; which describe about local taxes including vehicle tax, local governance, local natural revenue, and local budgeting process, and road management. The subject related literatures will be reviewed to support this research. This research will also draw a lesson in general about road funding in general from international practice, especially from Pakistan and Ghana.

1.1.1 Research Procedures

To fulfill the research objective and to answer the research questions, this research will follow procedures as follows, i.e. identification of the transport pricing policy concepts based on international literatures and practices, a description of the current situation in Indonesia, with respect to local taxes, vehicle ownership taxation and road management, comparing the international practices of road funding for road maintenance within legal, organizational, financial and operational perspectives, evaluating the possibility of the road fund implementation in Indonesia based on international comparisons, and drawing conclusions and giving recommendations.

1.1.2 Method of Data Collection

This research will use secondary data which are available in the journals, articles, literatures, government publications and other sources since there is limitation to obtain primary data. Moreover, Indonesian laws and regulations related with road management, local governance, local taxes, revenue sharing and governmental transfer, and local budgeting process will be inventoried.

1.1.3 Method of Analysis Study

The analysis in this research will be defined into narrative – descriptive and evaluative – exploratory methods. By using narrative – descriptive method, the research will try to explain the concept of road pricing policy on international literatures and practices; and also the concept of Indonesian local taxes, revenue sharing and road management based on current laws and regulations. Moreover, the international practices in road funding for road maintenance which include Ghana and Pakistan cases will also be described. By doing this, it will provide the answer for 1st, 2nd, and 3rd research questions.

The answer of the those 3 research questions will be an input to evaluate and to explore the possibility to implement road fund administration in the local budget in Indonesia by using revenue gained from vehicle ownership taxation.

The result, as the answer of the 4th research question, will provide conclusions and recommendations of this research.

1.4 Systematical of Report

This research consists of 6 chapters, including this first chapter. Outline of the other chapters is as follows:

Chapter II. Transport Pricing Policy as Source of Funding in Road Maintenance

To get an overview about their objectives, the concept of transport pricing policy and road maintenance funding based on literature reviews will be described here.

This chapter will also include a general overview of taxation and the impact of road maintenance on transport cost.

Chapter III. Current Situation in Indonesia: Vehicle Ownership Tax and Road Management

This chapter will give a general overview of the different types of local taxes in Indonesia, with an emphasis on vehicle ownership taxes and its revenue sharing.. Road management in Indonesia will also be discussed here. It includes the description of road classification, administering, and level of authority. The discussions will be based on current laws and regulations

Chapter IV. International Practices of Road Fund Administration

This chapter will give description about international practices of road fund administration, by focusing on Ghana and Pakistan. These countries are chosen because they show similarity with Indonesia as developing country and in face poor public road condition. These countries have been implementing road fund administration to deal with road maintenance for more than four years. Each country also has different institution in its road fund management and various revenue structures on its road fund. Moreover, the availability of the literatures is also taken into account in regard to choose these international practices. The discussion will be addressed on legal, organizational, financial and operational perspectives. The summary about road fund practice in general will be made and the lesson learned will be drawn in regard with the Indonesian context.

Chapter V. The Possibility of Road Fund Implementation in the Indonesian Context

This chapter will evaluate the implementation of vehicle ownership taxation in Indonesia and explore the possibility to use the revenue gained from this tax as road maintenance fund in the local budget. The analysis will be based on the literature review from chapter 2 and lesson learned drawn from chapter 4.

Chapter VI Conclusion, Recommendation and Reflection

This chapter will present the conclusion, recommendation and reflection obtained from the research.

The research framework can be seen on Figure 1.1 below.

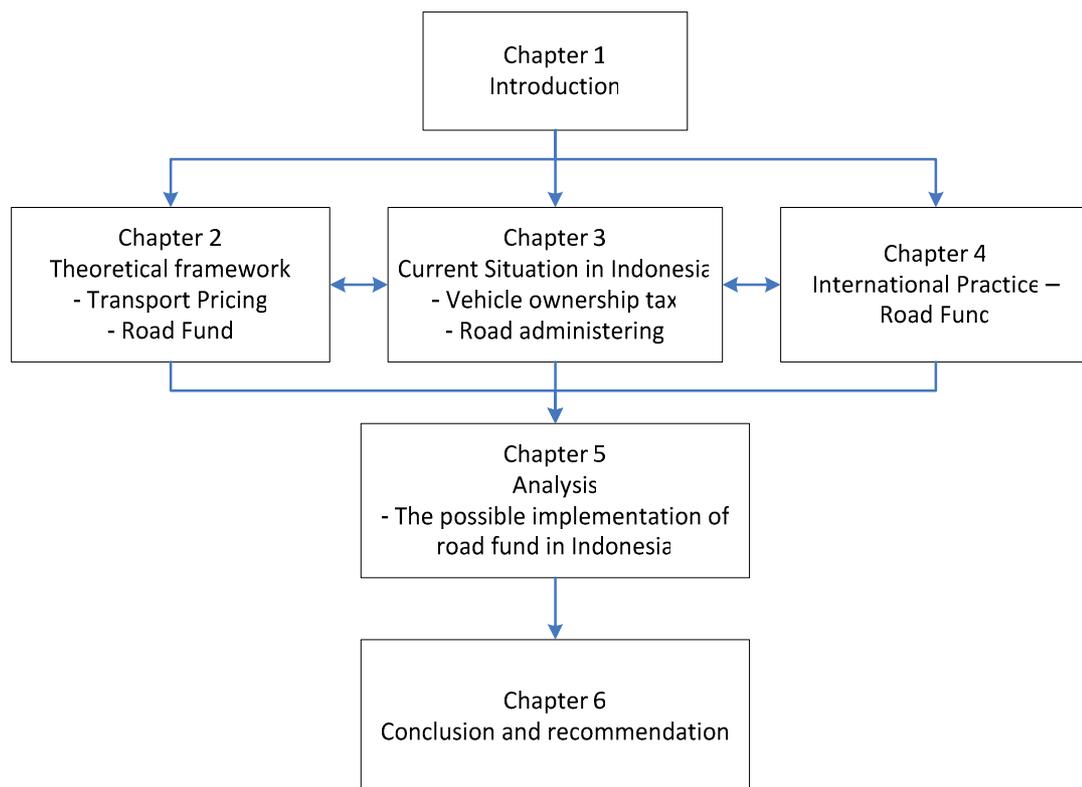


Figure 1.1 Research framework

CHAPTER 2

TRANSPORT PRICING POLICY AS SOURCE OF FUNDING IN ROAD MAINTENANCE

In this chapter, transport pricing policy in general will be discussed. Aside from its objectives to internalize external cost and to reduce transport demand, transport pricing policy also has been used to gain revenues and to raise funds (Litman, 1995; Van Wee, 1996; Ubbels, 2006). Firstly, in sub chapter 2.1 we will discuss about components of transport costs. Transport costs will be categorized into various costs. Transport pricing could be in the form of vehicle taxation, specifically as vehicle ownership taxation. Hence, a general overview of taxation will be discussed in sub chapter 2.2. Social welfare and equity is important to be discussed because taxation is related with taking money from the public from which the public should get compensation or benefits. In transport pricing policy, one of the benefits the public might get is of a well-maintained and good roads infrastructure. Moreover, vehicle ownership taxation will be discussed specifically in sub chapter 2.3. To be clearer, in sub chapter 2.4, we will discuss about the road maintenance impact in vehicle operating cost. The poorly maintained roads will increase vehicle operating cost. Furthermore, to get a general overview of road fund, in the sub chapter 2.5 we will discuss about road fund administration, specifically on funding and allocation for road maintenance.

2.1 Components of transport costs

Almost all forms of transportation cost money and reducing this as much as possible is an important goal, both for users and for policy makers (Van Wee, 1995). Van Wee (1995) found that there are different components included in total cost; which are firstly the direct cost. Direct cost consists of fixed and variable cost. These direct costs relate to building infrastructure, producing vehicles, and

operating the system. The division of direct costs relates to the level of use; when it is dependent on the level of use, it will be variable cost; and in the other words, it will be fixed cost if it is not dependent on the level of use.

Secondly, according to Van Wee (1995) is the cost which is contained within transport system once it operates, namely in-system cost. This cost includes time consumed and the risk. Reducing this in-system cost means that we ought to improve safety and to reduce travel times.

Thirdly, it is cost that are outside of the transport system; environmental cost. It includes cost for noise, local air pollution, acidification, and climate change. The union between part of in-system cost and all of outside of the transport system are called external cost or externalities.

What Van Wee (1995) proposes above is supported by Litman (1996). However, Litman (1996) expanded them more broadly and classified them into 5 categories, which are:

a. Internal and External Costs

Costs can be decomposed into these two categories depending on who will bear them. It will be *Internal Cost* if it is borne directly by the consumer of the goods (user cost); and it will be *External Cost* if it is borne by others (social cost). In case of those on whom the cost is imposed are compensated by users through paying tax of equivalent value, external cost can be internalized. According to Litman (1996), externalities should be internalized to the individual level due to equity and economic efficiency concerns.

b. Variable and Fixed Costs

Similar with what Van Wee (1995) mentioned above, Litman (1996) stated that variable and fixed costs are dependent on the level of vehicle use. Variable costs are proportional to vehicle use while fixed costs do not vary to vehicle use, no matter how far or how often the users use their vehicles in a year.

c. Perceived and Actual Costs

Users sometimes perceive immediate cost (such as travel time, parking fees, and fuel) as actual cost and undervalue occasionally paid cost (such as insurance, registration and maintenance). Even they ignore some costs such as external environmental impacts.

d. Market and Non-Market Costs

These two costs relate to whether goods are regularly traded in competitive markets or not. To be mentioned, fuel and cars are included in market costs while clean air and noise are included in non-market costs.

e. Direct and Indirect Costs

Direct and indirect costs relate to the connection between these costs, transportation activity and its ultimate impact. In certain project, refers to van Kooten (1993:86), direct cost is capital or construction cost. To check or to determinate whether certain activity will impose an indirect cost in the certain project or not even related with the project, a “*with and without test*” in the benefit – cost analysis can be performed (Litman, 1996).

Furthermore, Litman (1996) summarized the definitions and distribution of transportation costs in the Table 2.1 below.

Table 2.1 Transportation cost categories

Cost	Definition	Internal/ External	Fixed/ Variable	Market/ Non- market
1. Vehicle Ownership	Vehicle expenses which are not proportional to the amount that the vehicle is driven.	Internal	Fixed	Market
2. Vehicle operation	User expenses that are proportional to vehicle use	Internal	Variable	Market
3. Operating subsidies	Vehicle expenses not paid by the user	External	Fixed	Market
4. User travel time	Time spent travelling	Internal	Variable	Non-market
5. Internal accident	Vehicle accident costs borne by users	Internal	Variable	Non-market
6. External Accident	Vehicle accident costs not borne by users	External	Variable	Non-market
7. Internal Parking	Parking costs borne by users	Internal	Fixed	Market
8. External Parking	Parking costs not borne by users	External	Fixed	Market
9. Congestion	Increased delay, vehicle costs and stress an additional vehicle imposes on other road users	External	Variable	Non-market
10. Road Facilities	Road construction, maintenance and operating expenses not borne by road users	External	Variable	Market
11. Roadway Land Value	Opportunity cost of land used for roads	External	Variable	Non-market
12. Municipal Services	Public services devoted to vehicle traffic	External	Variable	Market
13. Equity & Option Value	Reduced travel choices, especially for disadvantaged people	External	Variable	Non-market
14. Air Pollution	Costs of motor vehicle emissions	External	Variable	Non-market
15. Noise	Costs of motor vehicle noise	External	Variable	Non-market
16. Resource Consumption	External costs resulting from the consumption of petroleum and other natural resources	External	Variable	Non-market
17. Barrier Effect	The disamenity motor traffic imposes on pedestrian and bicycle mobility. Also called "severance"	External	Variable	Non-market
18. Land Use Impacts	Economic, environmental and social costs resulting from low density, automobile oriented land use	External	Variable	Non-market
19. Water Pollution	Water pollution and hydrologic impacts from motor vehicles and roads	External	Variable	Non-market
20. Waste Disposal	External costs from motor vehicle waste disposal	External	Variable	Non-market

Source: Litman (1996:4)

2.2 A general overview of taxation

For performing national and regional development and its funding, the government obtains revenue from domestic and foreign sources (Nurjanah, 2005), and it may be obtained in various ways including taxation, loan and charges (Musgrave, 1976). One domestic revenue source which is important for funding the development is taxation (Nurjanah, 2005). Taxation, according to Mardiasmo (1995, as cited by Nurjanah, 2005 and Sari, 2008), is the payment from the people to national treasury based on the application of certain laws to fund public spending; and this imposition can be forcefully performed and without direct compensation.

Taxation has two important functions (Nurjanah, 2005; Sari, 2008; and Supadmi, 2009), namely budgetary and regulatory. The budgetary function means that the taxation can be used as revenue source for the government to fund its activity. For example, tax is included as domestic revenue in the national budget to fund public spending. Meanwhile, the regulatory function means that the taxation is applied by the government to perform or to regulate certain policies in the social and economic sector. For example, high tax is imposed on alcohol in order to reduce its consumption. Another example, various tax rates on vehicle fuel are applied to encourage people to use more eco-friendly cars.

According to Musgrave (1975:211), to appraise the quality of tax structures, these following criteria should be met, i.e.:

“... ”

- a. *The distribution of the tax burden should be equitable. Everyone should be made to pay his “fair share”.*
- b. *Taxes should be chosen so as to minimize interference with economic decisions in otherwise efficient markets. Imposition of “excess burden” should be minimized.*
- c. *At the same time, taxes may be used to correct inefficiencies in the private sector, provided they are suitable instrument for doing so.*
- d. *The tax structure should facilitate the use of fiscal policy for stabilization and growth objectives.*
- e. *The tax system should permit efficient and non-arbitrary administration and it should be understandable to the taxpayer.*
- f. *Administration and compliance cost should be as low as is compatible with the other objectives.”*

Equity is an important principle related with pricing acceptability since the payers may perceive that the pricing measure is unfair to them (Ubbels, 2006) and it is a basic criterion for tax structure design (Musgrave, 1976). According to Musgrave (1976), an equitable tax system allows the contribution made by each taxpayer is in line with the benefits which he receives from public services. For example on road pricing, Goodwin (1995) states that on average the payers perceive themselves to be worse off financially by the amount of cost they were previously imposing. In return, the taxpayers may expect the value of better road conditions and improving travel conditions; more roads, better public transports, indirectly reduced transportation-related taxes, improved public and social spending for non-transport purposes (Goodwin, 1995; Hau, 1996).

According to Ubbels (2006), as he found in Stiglitz and Driffill (2000), there are two criteria related with the equity issue; which are horizontal equity and vertical equity. Horizontal equity represents the principle that people in similar conditions would be treated as equals and should pay the similar amount of tax. In the implementation of vehicle ownership for instance, this will imply that people which have a similar type of vehicle or engine capacity should pay the same vehicle registration fee or vehicle ownership tax.

Vertical equity represents the principle that the people will get different treatment according to their different classes, needs, and abilities (Ubbels, 2006). The unequal taxes will be imposed among people with unequal income (Musgrave, 1976), progressive tax rates for instance. Vehicle ownership tax or road pricing may be regarded as vertically inequitable (Ubbels, 2006). For example, the owners of the motorcycles with the same type should pay the same amount of vehicle license fee annually and this will be horizontally equitable. However, if we take a closer look to their different level of income, it may be vertically inequitable since the lower income vehicle owners will spend the bigger portion of their income to pay this tax rather than the higher income level.

Equity also has geographical or spatial perspective, which relates to the various locations of the individuals to whom the treatment will be addressed (ECMT, 1998; Ubbels, 2006). From this point of view, transport pricing may be

seen as unfair, since the transport service (local road conditions for instance) is different among regions. For example, between more developed and less developed regions. In this case, it is suggested that other policy instruments (the allocation of revenue use for instance) should be applied which serve the development goals or enable income transfers from more developed to less developed regions to reach distributional goals (ECMT, 1998; Ubbels, 2006).

The authority of imposing tax can be transferred from national level to the sub-national or local government (Musgrave, 1976; Bird & Vaillancourt, 1998; Bird et al, 2003). Bird & Vaillancourt (1998) suggest the following characteristics which may be required in the ideal sub-national revenue:

- a. the tax base should be relatively immobile, to allow local authorities some flexibility in varying rates without losing most of their tax base;
- b. the tax yield should be adequate to meet local needs and sufficiently optimistic over time, which means it should expand at least as fast as expenditures;
- c. the tax yield should be relatively stable and predictable over time;
- d. it should not be possible to export much, if any, of the tax burden to non-residents;
- e. the tax base should be visible, to ensure accountability;
- f. the tax should be perceived to be reasonably fair by taxpayers; and
- g. the tax should be relatively easy to administer efficiently and effectively.

Taxation is an important component in the local revenues. This may also affect the implementation of local autonomy and fiscal decentralization (Sari, 2008). Transferring responsibility for taxation to sub-national government units theoretically improves efficiency in service delivery, allows better mobilization of resources and makes governments more accountable for and responsive to the needs of the population (Bird et al., 2002: 367).

2.3 Vehicle ownership taxation as transport pricing instrument

Taxation on vehicle, aside from its objectives to internalize external cost and to reduce transport demand, also has been used to gain revenues, to raise fund (Litman, 1995; Van Wee, 1996; Ubbels, 2006) and “to ensure budgetary receipts from both private and commercial road users” (OECD, 2008). Vehicle taxation can be seen as important example of the use of consumption taxes in the whole spectrum (OECD, 2008).

According to OECD (2008), taxes and charges on vehicles include taxes on sales and registration of motor vehicles (it is paid once at the time of vehicle acquisition, mostly known as Registration Tax or Registration Fee); periodic taxes which is paid in regard with the ownership or use of the vehicle (Circulation Tax); taxes on fuel; and any other taxes and charges, such as insurance taxes and road tolls. In this sub chapter, the discussion will be scoped only on the vehicle acquisition or registration tax and the circulation tax, because it will support the discussion about vehicle ownership tax (annual registration or license fee) in Indonesia in chapter 3 of this research.

OECD (2008) describes that vehicle taxation on acquisition or registration is usually based on different criteria or a combination of criteria. Sometimes in certain countries it is also based on the age of the vehicle. The criteria can be divided into four main categories as follows (OECD, 2008):

- a. Criteria based on the price (luxury car for instance) or the engine power of vehicle (cylinder capacity);
- b. Criteria based on environmental or other externalities; which can be vehicle weight, fuel consumption, polluting emissions, type of fuel, presence of air conditioner or catalyser and presence of safety equipment;
- c. Criteria based on social considerations; which can be specific rates or exemptions for emergency vehicles, ambulances, vehicle for disabled people, and vehicle for public transport or use by public services;
- d. Specific criteria applicable to commercial vehicles (delivery vans, trucks, vehicle designed for commercial use); which can be cargo room, number of axles, vehicle weight, and number of seats for buses.

Furthermore, the main criteria to appraise the taxation of the ownership or use of the vehicle (Circulation Tax) are weight, usage, vehicle type, type of fuel, engine size, polluting emission and fuel efficiency (OECD, 2008). The application of the type of vehicle taxation in Indonesia will be discussed in chapter 3 of this research.

There are three common ways to use the revenues from transport pricing (Ubbels, 2006; ECMT, 1998); and Goodwin (1995) in his article proposes them by adopting the “Rule of Three”, which includes:

- a. one-third of the revenue can be used to make improvements to the effectiveness of the alternative methods of transport
- b. one-third can be used to improve the quality of the roads themselves, such as increasing capacity of the roads
- c. one-third can be considered as general tax revenue, either reducing existing taxes, lowering other charges or increasing other social spending in accordance with priorities of each locality

It is important to know here that people need some clear information about the problems behind the certain transport pricing solution being applied, the solution itself, the pricing mechanism and the allocation of the revenue gained from vehicle taxation (Ubbels, 2006). This will affect the acceptability of pricing and willingness to pay from the road users. Obviously road users will expect that certain benefits are obtained with the money they have spent.

2.4 Road maintenance impact of transportation cost

Depending on the traffic, new roads will deteriorate slowly during the first half to two-thirds of their service life if they are inadequately maintained (Harral and Faiz, 1988). After this period, roads decline more rapidly and without timely maintenance they will break apart.

The economic costs of poor road maintenance are primarily borne by road users (Heggie and Vickers, 1998). When roads deteriorate and become rougher, the vehicle operating costs and also the costs of transportation of goods will raise much (Harral and Faiz, 1988). Vehicle speeds will progressively reduce in the

light of comfort and perceived safety, and vehicle spare-part and maintenance costs caused by potholes damage increase (e.g., wear and tear on suspension components) (OECD, 1994; Heggie and Vickers, 1998). Furthermore, the vehicle life may reduce when operating on unmaintained rural roads. The additional costs may be higher if the circumstances such as extra fuel, accidents, down-time for repair, and damage to freight inside the vehicle are taken into account (Heggie and Vickers, 1998).

Reduction of vehicle speeds caused by poor maintained roads may affect the economy, in the terms of lost production. Crop and agriculture products may decay before they reach the market. Moreover, poor maintained and impassable roads may affect social life when people and communities experience difficulty or are unable to access markets or public services, especially emergency health care (Heggie and Vickers, 1998).

Once roads become in very poor condition, the normal maintenance will be no longer sufficient or effective; and thus those roads are in need of rehabilitation or reconstruction at three to five times the cost of timely preventive maintenance and strengthening (Heggie and Vickers, 1998). The preventive maintenance of roads can reduce the huge amount of funds needed to perform road reconstruction. This is shown by Harral and Faiz's (1988) study, as also cited by Heggie and Vickers (1998), that rather than spending \$40 to \$45 billion worldwide for road reconstruction, it can be turned away by spending only \$12 billion on preventive maintenance. Gwilliam (2007) concludes that on the perspective of the economy as a whole, it is not economically rational to defer maintenance where even the current year costs of deferral exceed its benefits.

2.5 Road funding administration

As discussed in the previous sub chapter the roads need to be well maintained. Clearly the government needs the sum of money to perform public road maintenance. One of the sources to fund public road maintenance is road fund allocation in the government budget. Road fund is a holding of dedicated revenue collected as road user charges, outside the central government's general

budgetary framework and may be responsible for maintenance and/or capital expenditures (OECD, 1994:124; Gwilliam, 2007:15).

Road funds have been implemented around the world more than fifty years with the various degree of success. In 1960's and 1970's period, the "first generation" of road fund was established in many countries and it was intended to address road deterioration and distinguished typically by earmarked taxation, which provided the main source of revenue (World Bank, 2004b). The first generation of road fund is characterized by plain earmarking of government revenues to finance a service that is managed and provided by government departments and allocated to pre defined priorities. It has been in 'second generation' now since it was firstly introduced (Heggie & Vickers, 1998; Kumar, 2000; Gwilliam & Kumar, 2003; Benmaamar, 2006), which emphasizes on the "new policy framework which advocates establishment of dedicated Road Funds (RFs), managed by autonomous road boards as commercial entities and made up of user representatives who both gain the benefits from the road facilities they provide and bear the cost of any increase in charges which they approve" (Kumar, 2000). Second generation road funds are aimed to support the commercialization of road management, raise domestic resources made available to road maintenance and increase efficiency of resource allocation and use. It is characterized by a new autonomous body, managed together with road users and financed 'off-budget' by designated road user charges based on user-pays principle (Kumar, 2000).

Road fund issue may be controversial because road fund is seen as a form of earmarking (Kumar, 2000). OECD (1994) states there are some advantages and disadvantages of the earmarking revenues in the form of a Road Fund. The advantages include a stable road budget and avoiding 'political' diversion of road user charges; efficient programming and lower contracting cost promoted by stable road budget; more acceptance on increasing user charges because road fund can be identified and monitored; cost recovery and equity facilitation, which means that the beneficiaries and those who pay can be matched; and more

efficient management of funds and increasing sense of accountability promoted by easily monitored programs and a link between payments and benefits.

Meanwhile, the disadvantages comprise an entailed cost in terms of loss of budgetary freedom, especially in unpredictable fiscal difficulties; distortions between different economic sectors, specifically leading to overspending on road sectors; and a tendency to use road fund for new construction rather than for maintenance (OECD, 1994).

The founding of a road fund may affect the economic efficiency through three main ways, i.e. fiscal control, management incentive and rent-seeking behaviour (Gwilliam & Shalizi, 1999). With fiscal control, resources collection and allocation is carried out in order to maximize total community welfare. Resource allocation used with management incentives by the agents of production will partly determine the efficiency. Both of fiscal control and management incentives can be unfavourably affected by rent-seeking behaviour. Rent-seeking behaviour takes place when persons or agencies try to secure their own specific advantage at society's cost (Teja, 1988 in Gwilliam & Shalizi, 1999). The assessment of the road fund efficacy is critically affected by the importance of and the balance among these three main ways (Gwilliam & Shalizi, 1999).

Heggie and Vickers (1998:65) propose that charging instruments should be easily recognizable, related to road use, easy to separate from indirect taxes and other service charges or fee, simple to administer and not vulnerable to pervasive evasion, avoidance and leakage; in order to control demand and provide a basis for creating linkage between revenues and expenditures. Heggie and Vickers (1998) also demonstrate the suitability of different road-user charging instruments for road funding in Table 2.2 below, and propose that the vehicle license fee, heavy-vehicle license fee, fuel levy and international transit fee are included on the most suitable charging instrument.

Table 2.2 Administrative characteristics of different road-user charging instruments

Charging instrument	Potential role	Related to road use	Separable from general taxes	Easily recognizable	Administrative characteristics			Suitability
					Collection	Avoidance	Ease of	
					cost (%)	or evasion	collecting by contract	
Tolls	user fee	yes	yes	excellent	10 - 20	moderate	simple	moderate
Vehicle license fee	vehicle access fee	no	yes	Good	10 - 12	high	moderate	high
Heavy Vehicle license fee	vehicle access fee	not directly	yes	Good	unknown	unknown	simple	high
Fuel levy	user fee	partly	can be	Good	negligible	low	simple	high
Weight-distance fee	user fee	yes	yes	excellent	5	moderate	moderate	low
International transit fee	foreign user fee	should be	yes	Good	10	high	simple	high
Parking charges	control access	partly	yes	Good	over 50	high	simple	moderate
Cordon charge	congestion charge	partly	yes	moderate	10 - 15	unknown	simple	moderate
Area license	congestion charge	partly	yes	moderate	10 - 15	unknown	simple	moderate
Electronic road pricing	user or congestion charge	can be	yes	Good	less than 10	unknown	simple	low

Source: Heggie &Vickers (1998:6)

Based on the review of road fund practices, Heggie (1999) suggests that the key elements responsible for the success of this second generation of road funds should follow three broad directions, i.e. the strategic elements, the technical and policy elements, and the operational elements. The strategic elements comprise the scope of the road fund (whether finances all of or parts of road networks), the legal basis, the type of oversight arrangements, how the funds are managed (by the board or sub commission of that board, including the approval of the proposed road programs and fund disbursement), and which expenditures it finances. The technical and policy elements cover how funds are divided between different road agencies, the source of revenues, the way the road tariff is adjusted, how non-road users are exempted from paying the fuel levy; and how funds are disbursed to each road agency. Furthermore, the operational elements include how day-to-day management is organized (in terms of the staffs of road funds collect the revenues, manage the cash balances, establish withdrawal procedures, supervise the use of funds, prevent unauthorized withdrawals,

organize meetings of the board and keep proper accounts to ensure that the road fund can be audited, the sort of financial rules and regulations that are used, and how the road fund is audited.

Furthermore, in formulating the recommendations of establishing a Road Fund, World Bank (2004b) suggests that the legal, regulatory, institutional and procedural requirements should be addressed. Legal and regulatory requirement will cover reviewing existing laws and regulations, identifying constraints and changes required and proposing the legal basis of the form of a potential Road Fund, the purpose of the fund, details of expenditure categories and revenue stream. The institutional structure requires ensured responsible governance, government and community representation and adequate regulatory control. The structure and institutional linkages, staff composition of the governing Board and way to finance operational expenditures of the recommended entity to operate the Road Fund should be clearly defined. The procedural or operational requirements comprise the options for disbursing funds (directly to the responsible implementation agencies using an approval or a pre-described arrangement, or directly to the contractor), suitable audit arrangements (by utilising an existing organisation or by the formation of a new private entity), and description of the mechanisms required of revenue and expenditure.

2.6 Concluding remarks

Almost all forms of transportation cost money and reducing this as much as possible is an important goal, both for users and for policy makers. Transport costs can be categorized into various costs. Transport pricing could be in the form of vehicle taxation, specifically as vehicle ownership taxation. Obviously road users will expect that certain benefits are obtained with the money they have spent for vehicle taxes, and one of the benefits may be in the form of good and well maintained roads. Depending on the traffic, new roads will deteriorate slowly during the first half to two-thirds of their service life if they are inadequately maintained. When roads deteriorate and become rougher, the vehicle operating costs and also the costs of transportation of goods will raise much. The preventive

maintenance of roads can reduce the huge amount of funds needed to perform road reconstruction.

Clearly the government needs the sum of money to perform public road maintenance. One of the sources to fund public road maintenance is road fund. Road fund has been practiced in the various countries all over the world. Road fund is a holding of dedicated revenue collected as road user charges, outside the central government's general budgetary framework and may be responsible for maintenance and/or capital expenditures.

In regard with the setting up or initiating road fund practice in certain country, the decision to introduce a road fund practice should be based on a practical and systematic appraisal. This appraisal also should consider the context and the capacity to minimize intrinsic distortions in the allocation of resources.

To appraise all activities describe in this research, the framework which is suggested by World Bank (2004b) above is adapted and modified. This will provide a framework which may cover not only the description and evaluation of the vehicle ownership taxation and road management in Indonesia (in chapter 3), but also the international practice of the road funds (in chapter 4). The appraisal may be performed within the framework of legal, organizational, financial and operational arrangement. The framework used for the description and evaluation in this research can be seen in the Table 2.3 below.

Table 2.3 Framework for description and evaluation

Vehicle ownership tax	Road administration	Road Fund
Legal arrangement		
Legal basis	Legal basis	Legal basis
Organizational Arrangement		
Administrator / bodies in charge	Administrator	Administrator
The responsibility of the body	The responsibility of the body	The responsibility of the body
		Separation financier - provider function
		Board members
		composition of the board (public-private)
Financial arrangement		
Channeling the revenue	Road financing in the local budget	Source of fund
	Fund disbursement	Major revenue
		Channeling to road fund account
		Fund disbursement
Operational arrangement		
the base for imposing vehicle ownership tax	type of work	Type of work
	type of network	Type of network
	Technical and financial audit	Technical & Financial audit

The activities consist of the vehicle ownership taxation and road management in Indonesia and the international practice of the road funds. The legal arrangement will cover the legal basis enacted to perform each activity. The organizational arrangement will cover the body in charge or the administrator of each activities and the responsibility of each administrator. Especially for road fund practice, this will cover the members of the road fund board and its composition as well. The financial arrangement will cover the channelling process

of the vehicle ownership tax revenue and the road financing in the local budget in Indonesia. Moreover, within this arrangement, the information which may be obtained from the road fund practice includes the source of the fund, major revenue, and the channelling and disbursement of the funds. The operational arrangement will cover the base for imposing vehicle ownership tax Indonesia. it will also provide the information about the type of work which is performed by local road agency in Indonesia, type of network which the local road agency administer and the audit process in the road administration in Indonesia. for the international road fund practice, this operational arrangement will cover the type of work and network which the road funds finance and the audit process in the implementation of the road funds. Furthermore, the analysis of the possibility to initiate the local road maintenance fund (in chapter 5) will also follow the structure of this framework. The analysis will include the lesson learned and what Indonesia can learn from the international practice of the road funds, presented in each arrangement.

CHAPTER 3

CURRENT CONDITION IN INDONESIA: VEHICLE OWNERSHIP TAX AND ROAD MANAGEMENT

In this chapter, we will discuss the current condition in Indonesia regarding the implementation of vehicle ownership tax and its revenue sharing between the provincial and local level in sub chapter 3.1, and the road management especially about road maintenance issue in sub chapter 3.2. The discussion will be elaborated in the legal, organizational, financial and operational framework.

3.1 Vehicle Ownership Taxation in Indonesia

3.1.1 Legal arrangement

In the need for the adjustment of the local autonomy policy which has been implemented before (based on Act No. 32/2004 Local Governance), the government of the Republic of Indonesia issues Act No. 28/2009 Regional Taxes and Charges. Act No. 28/2009 is not a brand new act that regulates the implementation of local taxes and retributions. This is an improvement of Act No. 34/2000 Amendment of Act No. 18/1997 Regional Taxes and Charges.

This act will be a legal basis and a guidance to regulate the implementation of local tax and retribution at the provincial and local level. The consideration of this act issued is giving broad authority in the implementation of local governance, along with giving rights and obligations in carrying out local autonomy bounded in national governance system. The government realizes that to increase the services to the public and local autonomous circumstance, it is needed to carry out not only the extension of local retribution and tax base, but also the discretion on imposing tariff. Local tax and retribution is considered to be one of the important local revenue sources to fund local government activities. Moreover, according to this act of regional taxes and charges (Act No. 28/2009),

local tax policy implementation should be based on democracy, distribution and equity, public participation, and accountability principles; and also should pay attention to local potencies. The comparison of sub-national tax types mentioned in Act No. 28/2009 and the previous one can be seen on Table 3.1 as shown below.

Table 3.1 Classification of sub-national taxes in Act No. 34/2000 and Act No. 28/2009

Act	Act No. 34/2000	Act No. 28/2009
Taxation	<ol style="list-style-type: none"> 1. Motorized vehicle and Vehicle on water tax 2. Motorized vehicle and Vehicle on water transfer fee 3. Motorized vehicle fuel tax 4. Ground water and surface water exploitation tax 5. Hotel tax 6. Restaurant tax 7. Entertainment tax 8. Advertising board tax 9. Street light tax 10. Stone quarry tax 11. Parking tax 	<ol style="list-style-type: none"> 1. Motorized vehicle tax 2. Motorized vehicle transfer fee 3. Motorized vehicle fuel tax 4. Ground water tax 5. Cigarette tax 6. Hotel tax 7. Restaurant tax 8. Entertainment tax 9. Advertising board tax 10. Street light tax 11. Non-metal mineral and stone quarry tax 12. Parking tax 13. Ground water tax 14. Swift bird nest tax 15. rural – urban land and property tax 16. Land and property right acquisition fee

Source: Act No. 34/2000 & Act No. 28/2009

In Act No. 28/2009, there are some changes on sub-national taxes in regard with the expansion of the base of sub-national taxes. The expansion of the sub-national tax base includes expanding the existing sub-national tax base, altering central tax into sub-national tax and the addition of the new tax types. The expansion of the existing sub-national tax base includes government owned vehicles for vehicle ownership taxation, all kinds of rent in the hotel business for hotel tax and catering service for restaurant tax. There are 4 new additions of sub-national tax type, which include: rural – urban land and property tax, and land and property right acquisition fee which previously were central tax; swift bird nest tax as regency/municipal tax; and cigarette tax as provincial tax. In the other words, this addition is not mentioned or available in the previous act and in future will be managed by provincial or local government.

In the Act No. 28/2009, sub-national taxes are also categorized into two level of authority to impose, provincial tax and local/municipal tax. The classification of sub-national tax authority can be seen in Table 3.2 below.

Table 3.2 Classification of provincial and local taxes in Indonesia

Level of authority	Provincial	Local/Municipal
Taxation types	<ol style="list-style-type: none"> 1. Motorized vehicle tax 2. Motorized vehicle transfer fee 3. Motorized vehicle fuel tax 4. Ground water tax 5. Cigarette tax 	<ol style="list-style-type: none"> 1. Hotel tax 2. Restaurant tax 3. Entertainment tax 4. Advertising board tax 5. Street light tax 6. Non-metal mineral and stone quarry tax 7. Parking tax 8. Ground water tax 9. Swift bird nest tax 10. Rural – urban land and property tax 11. Land and property right acquisition fee

Source: Act No. 28/2009

Moreover, in this sub chapter, sub-national tax in Indonesia which will be discussed further is vehicle ownership tax and vehicle transfer fee on motorized vehicle for land transport.

By definition as mentioned in Act No. 28/2009, vehicle ownership tax (*Pajak Kendaraan Bermotor/PKB*) is taxation on the ownership and subjection of motorized vehicles. It is an annual license or registration fee paid by the vehicle owner (Mahadi et al, 1993). A motorized vehicle here is defined as all types of wheeled vehicles, which are used on all types of land road and operated by technical equipment such as engine or other tools which function is to change certain energy source become movement energy of the pertinent vehicle, and motorized vehicle which is operated on water surface. Trains are exempted from this regulation. The same goes for vehicles for national security and defence

purposes, vehicles owned or subjected by foreign embassies, consulates and by representative.

Vehicle transfer fee (*Bea Balik Nama Kendaraan Bermotor/BBNKB*) is taxation to the handing over of motorized vehicle property right; as consequence of two-party agreement, unilateral agreement or such conditions caused by transaction, exchange, grant or award, inheritance or capital participation in corporation (business entities). In the other words, vehicle registration fee will be imposed in the occurrence of vehicle tax subject changes.

The revisions which relate to vehicle ownership tax in Act No 28/2009, compared to the previous act, are emphasized on local tax base expansion, maximum tariff and earmarking issues. The tax base for vehicle ownership tax is expanded including vehicles owned by government from which to increase revenues. Maximum tariffs are increased from 5% to 10% of vehicle sale value to give the local governments flexibility to regulate their local tax system, in order to raise revenue and to increase service quality. Moreover, this maximum tariff is defined to restrict local governments on applying high tariff designation which can cause overburden to the people. To increase the accountability of tax collection, revenues from local taxes should be allocated to fund infrastructure developments that are closely related with the tax object. For vehicle ownership tax, it is mandated that minimally 10% of this tax revenue has to be allocated to fund road development and maintenance and to improve public transport infrastructure.

Regulation about the criteria or the base for imposing vehicle ownership tax in Act No. 28/2009 will be derived and explained further into a Ministry of Internal Affairs regulation (*peraturan menteri dalam negeri/permendagri*)¹, under an agreement with the Ministry of Finance. This regulation also presents a table

¹ For author's limitation reason, regulation of Ministry of Internal Affairs which will be discussed in this research is Permendagri No. 9/2007. Actually, this regulation is the derivation from previous act (Act No. 34/2000). The Ministry of Internal Affairs has issued the new regulation (Permendagri No. 29/2009), based on the new regional taxes act, but the author can not get the copy of this regulation. The common difference between new MoIA regulations about vehicle ownership tax with the previous one is usually situated on the additional description of the new vehicle types which previously has not been regulated.

containing a vehicle type list, followed by specific criteria on which vehicle ownership tax is imposed. Furthermore, provincial government issues a certain governor decree which regulates vehicle ownership tax in the respective province and defines vehicle market price as a basis for vehicle ownership tax calculation.

3.1.2 Organizational arrangement

The vehicle ownership tax in Indonesia is not charged by the national tax office. As mandated by laws, it is the provincial government that imposes it. In the implementation of this tax, the provincial government establishes an agency on the local/municipal level as a representation of the vehicle tax office, namely *Kantor Samsat (Sistem Administrasi Manunggal di bawah Satu Atap/ Integrated administration system under the same office)*. This office actually is a container for 3 different institutions to work together. The institutions comprise the provincial local revenue agency (*Dinas Pendapatan Daerah/Dispenda Propinsi*), the traffic unit of regional police (*Satuan lalu lintas/Satlantas Polda*) and the government owned insurance company (*PT Asuransi Jasa Raharja (persero)*).

The main functions of each institution are as follows (Untung, 2005):

- a. The provincial local revenue agency, through local tax service unit (*Kantor UPPD*), is responsible for the vehicle taxes which include tabulating the vehicle ownership data on the respective regency, defining and charging the vehicle tax.
- b. The traffic unit of regional police is responsible for the identification of vehicle ownership by issuing proof of the vehicle ownership letter (*BPKB*), vehicle number letter (*STNK*) and the vehicle plate number/license plate (*TNKB*).
- c. The government owned insurance company is responsible for the protection of the road user (vehicle owner) from traffic accidents by

issuing obligatory insurance premiums (*Sumbangan Wajib Dana Kecelakaan Lalu Lintas Jalan/SWDKLLJ*).

3.1.3 Operational arrangement

The base for imposing vehicle ownership taxation is a result of two main categories which are vehicle sale value (*Nilai Jual Kendaraan Bermotor/NJKB*) and weighing value which relatively reflects the grade of road and/or environmental damage caused by the usage of motorized vehicles. In case of public transport purpose, the base for imposing vehicle ownership tax is only 60%. In other words, the government gives 40% rebates on this taxation.

Vehicle sale value is defined in accordance with the common market price of the motorized vehicle in the first week of December in the previous tax year. This market price is the average sale value which is obtained from various accurate sources. In the case the vehicle market price is not known or recognized, the vehicle sale value is determined according to some or all of following factors:

- a. Price of a vehicle with the same cylinder capacity and/or power;
- b. The usage of a vehicle for private or public (transportation) purpose;
- c. Price of a vehicle with the same brand;
- d. Price of a vehicle with the same year of production;
- e. Price of a vehicle with the same vehicle producer;
- f. Price of a vehicle of the same type;
- g. Price of a vehicle based on documents of importing notification.

The weighing value which relatively reflects the grade of road and/or environmental damage caused by the usage of motorized vehicles is represented by a certain given coefficient or multiplication factor. Coefficient 1 is applied when the damage is assumed to be within tolerance range. This coefficient is applied to vehicle types such as sedan, station sedan, jeep, station wagon minibus, microbus, bus, motorcycle and similar types. Coefficient 1.3 is applied when the road and/or environmental damage caused by the usage of the vehicle is assumed to be beyond the tolerance range. This coefficient is applied to vehicle types such as heavy goods transport vehicles. The weighing value, represented by a given

coefficient, is calculated by the government in accordance with the following factors:

- a. Axle pressure, differentiated by the amount of axles, wheels and weight of vehicle;
- b. Vehicle fuel types, such as diesel fuel, gasoline, gas, electricity, solar and other vehicle fuel;
- c. Vehicle type, usage, year of production, engine characteristic (2-stroke or 4-stroke) and cylinder capacity.

Referred to the higher hierarchal regulation and in order to give provincial governments more taxing power, governors can determine the bases for vehicle ownership taxation in respective provinces according to the following criteria:

- a. For vehicle variety, the brand and type which have not been mentioned in the attachment of the related Ministry of Internal Affairs regulation and standardized by Directorate General Development of Local Finance Administration (on behalf of Minister of Internal Affairs),
 - 1) Produced in newest year (in the same year with or after the regulation issued), vehicle sale value is defined by 10% under its off-the-road price⁴ or 21.5% under its on-the-road price⁵ estimation.
 - 2) Produced in previous years, the vehicle sale value is defined in accordance with the common market price or by comparing the variety, brand, type, cylinder capacity and year of production from the same producing country.
- b. For vehicle variety, brand and type which have been mentioned in the attachment of the related Ministry of Internal Affairs regulation
 - 1) Produced in newest year, vehicle sale value is defined by adding 5% per year from sale value in the previous year.

⁴ Off-the-road price is the price of motorized vehicle from the factory or sole agent including value added tax

⁵ On-the-road price is the price of motorized vehicle from the factory or sole agent including value added tax, vehicle registration fee and vehicle ownership tax

- 2) Produced in previous years, the vehicle sale value is defined in accordance with the sale value of the latest production year with a 5% incremental decrease per year, and with a maximum decrease of 5 times or adjusted to the common market price which is valid in the respective province.

3.1.4 Financial arrangement

The amount of motorized vehicle in Indonesia has increased significantly from year to year. This can be seen from the condition that the amount of vehicle grew from almost 19 million units in 2000 to around 65 million in 2008, or it is almost 2.5 fold growths in the period of 8 years. Graphic of the motorized vehicle growth in Indonesia can be seen on Figure 1 below.

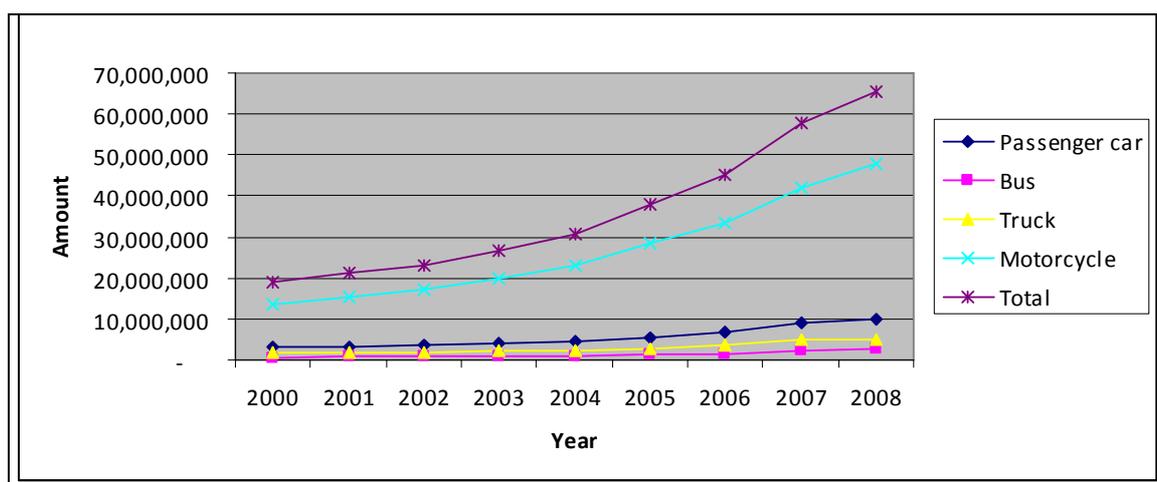


Figure 3.1 Growth of motorized vehicle in Indonesia 2000 – 2008

Source: *Statistic Indonesia, 2008*

The biggest contribution to the increasing motorized vehicle comes from motorcycle. It constitutes around 13.5 million units in 2000 and around 47 million units in 2008. However, the growth of the other motorized vehicle is relatively similar. In average, it is about 16%, 19%, 15% and 17% per year for passenger cars, bus, truck and motorcycle respectively. The growing number of motorized vehicles promises a significant contribution to the revenue growth. The revenue may grow more rapidly than economy in general (Mahadi et al, 1993), since the

number of motorized vehicle in Indonesia has grown at a rate of 15% per year which is much larger than the growth of Indonesian GDP (averagely 5.2% per year in the period 2000 – 2008).

Having collected the vehicle ownership tax from vehicle owners on the local level, the local tax service unit (*Kantor UPPD*) in *Kantor Samsat* will send the tax revenue to the local revenue agency at the provincial level. The agency in provincial level will manage the vehicle ownership tax and redistribute it to local government as tax revenue sharing. The proportion of the vehicle ownership tax revenue sharing is 70% for the provincial government and 30% for the local government.

The vehicle tax revenue is the main tax revenue source of the regency/municipal government (Sari, 2008). Along with other local revenues, the vehicle tax revenue is categorized as local own-source revenue that can be used to finance local infrastructure provision. The financing mechanism and scheme in the provision of local infrastructure, including road development and maintenance, can be seen in Figure 3.1 below.

3.2 Road administration in Indonesia

3.2.1 Legal arrangement

The legal basis for road administration in Indonesia is Act No. 38/2004 Roads. The scope of this law is to regulate public roads, specific roads and toll roads. The publishing of this law was followed by the publishing of lower hierarchal regulations to give specific technical guidance for implementation of the general principle stated in Act No. 38/2004 Roads. In this case, the Government Regulation No. 34/2006 is enacted to regulate the administering of public and specific roads.

In Act No. 38/2004, road administering is defined as activities which include road regulating, supervising, development and monitoring. Regulating means activities which include the formulation of planning policies, general planning and the arrangement of road laws and regulations. Supervision includes activities of manual and technical standard arrangement, human resources empowering, and research and development. Road development covers programming and budgeting, technical planning, construction, and road operation and maintenance. Monitoring includes activities to put regulation, supervision and development in order.

The scope of discussion in this research is limited to public roads. Public road in Indonesia as stated in Act No. 38/2004 and Government Regulation No. 34/2006 is categorized and defined into road network system, function, status and class. Public road, according to its status, can be categorized as national, provincial, regency, municipal (urban) and rural (village) road.

3.2.2 Organizational arrangement

The authority of road administration is in the hands of the central and the local government. The authority held by the central government includes national roads and road administering in general. This means that the central government is responsible in regulating, supervising, developing and monitoring on a macro scale in regard with national policy. Furthermore, the authority in road administration on national level is delegated to Ministry of Public Works, which

in the daily basis activity is performed by Directorate General Road (*Ditjen Binamarga*). The ministry will provide regulations, norms, standards, guidance and manuals for road administration on each government level. In regard with road categorization, Ministry of Public Works is responsible to determine the arterial and collector roads in the primary network system. This determination is carried out periodically, usually in 5-years period, according to the grade of regional development achieved; and after a hearing process together with the Ministry of Transport is held. The determination of the road status as a national road will be carried out periodically.

Furthermore, the central government can transfer the responsibility of road administration to the provincial government. Some parts of the central government authority in road development, which include technical planning, execution, construction, and operating and maintenance, can be performed by the provincial government in accordance with de-concentration and assistance-task mechanism.

The administration of the provincial roads is carried out by the governor of the respective province. In the implementation, the governor mandates specific agency, namely the Provincial Road Agency, to perform this task. With regard to the road categorization, the governor is responsible to determine the road segments which are included in the secondary road network system, the local roads in the primary road network system and sub-local road in primary road network system. This determination is performed periodically and is based on a governor decree. Governor also has authority to define road segment which is included as province road, taking notice to ministry decree about national road and road function consideration.

On a municipal level, rural road administration is under the authority of the respective head of the region (regent or mayor)⁶. By status, regency and rural roads are defined under regent decree; meanwhile municipal/urban roads are defined by the mayor of the respective region. This road status definition is

⁶ This is in line with what Act No. 32/2004 Local Governance stated that the affair of public works sector including road provision and maintenance can be delegated to the local government.

performed periodically under guidance and standards issued by the Ministry of Public Works. Municipal road administrators are also responsible to define road class on each regency and municipal road based on specification of road infrastructure provision. In daily activity of road administering, the regent or the mayor is supported by a specific agency, namely the Road Agency (*Dinas Binamarga*). Although these government bodies are not dependent on each other in day to day work, they are bounded in a coordination function. The planning process of the road administration, whether on provincial or local level, must take the national road network development plan into account. Moreover, the technical planning for road development and maintenance on each government level should take notice and use the national standard or technical specification which has been enacted by the Ministry of Public Works. For example, in the establishment of a new local road, the local Road Agency should follow the national standard of road construction work which is adjusted with the width of right of way (RoW), pavement types, traffic volume and annual traffic growth. In general, the division of the responsibility among central, provincial and local/municipal governments in road administration is summarized in Appendix 1. Moreover, the general overview about local road maintenance performed by local road agencies will be described in sub chapter 3.2.3.

3.2.3 Operational arrangement: regency/municipal road maintenance

The local road condition in Indonesia varies from region to region. Specifically, the regency/municipal road condition per province in Indonesia can be seen in Table 3.3 below.

Table 3.3 Regency/municipal road condition in Indonesia (in km)

No	Province	Good		Moderate		Damaged		Heavy damaged		Total	
		2004	2006	2004	2006	2004	2006	2004	2006	2004	2006
1	2	3	4	5	6	7	8	9	10	11	12
Sumatra island											
1	Nanggroe Aceh Darussalam	5,297	5,656	2,955	3,224	1,675	2,070	1,332	1,544	11,259	12,494
2	Sumatera Utara	6,416	9,952	5,127	6,206	6,456	7,844	5,350	5,942	23,349	29,944
3	Sumatera Barat	3,664	4,685	2,707	2,252	3,288	3,092	2,562	4,435	12,221	14,464
4	Riau	2,204	1,512	2,485	3,982	4,203	5,422	1,765	1,276	10,657	12,192
5	Kepulauan Riau	0	0	0	0	0	0	0	0	0	0
6	Jambi	2,781	1,952	2,384	1,623	2,690	1,982	3,656	2,014	11,511	7,571
7	Sumatera Selatan	3,686	3,329	2,828	1,615	1,459	2,304	0	2,579	7,973	9,827
8	Bengkulu	1,781	1,520	869	868	1,145	772	32	669	3,827	3,829
9	Lampung	3,008	2,979	3,152	2,977	1,701	1,388	2,055	2,248	9,916	9,592
10	Bangka Belitung	958	1,540	798	659	858	93	81	96	2,695	2,388
Java - Bali islands											
11	D.K.I Jakarta	5,050	4,938	39	0	0	0	0	0	5,089	4,938
12	Jawa Barat	7,080	6,983	5,794	5,410	6,757	7,463	1,785	2,542	21,416	22,397
13	Jawa Tengah	9,854	11,243	6,444	6,999	4,003	4,563	2,133	1,705	22,434	24,509
14	DI Yogyakarta	4,303	1,469	1,231	1,621	1,293	740	194	170	7,021	4,000
15	Jawa Timur	12,159	18,328	7,874	6,957	6,572	4,840	1,471	2,874	28,076	32,999
16	Banten	1,223	740	772	1,049	372	1,254	627	241	2,994	2,284
17	Bali	2,723	2,964	1,289	1,472	1,342	1,091	122	180	5,476	5,707
Kalimantan island											
18	Kalimantan Barat	1,937	2,086	1,884	2,182	876	3,978	2,746	1,928	7,443	10,174
19	Kalimantan Tengah	1,064	1,210	957	1,150	2,109	2,870	2,335	2,950	6,465	8,180
20	Kalimantan Selatan	2,471	2,869	1,719	1,824	1,785	1,506	828	882	6,803	7,081
21	Kalimantan Timur	1,921	1,599	1,671	1,200	2,683	2,275	780	702	7,055	5,776
Sulawesi island											
22	Sulawesi Utara	1,976	1,362	844	609	988	1,234	3,795	447	7,603	3,652
23	Sulawesi Tengah	2,394	2,260	2,171	502	1,313	368	89	609	5,967	3,739
24	Sulawesi Selatan	7,225	12,214	6,670	7,861	5,008	8,212	4,172	5,170	23,075	33,457
25	Sulawesi Tenggara	2,013	1,480	794	1,011	644	999	1,306	414	4,757	3,904
26	Gorontalo	863	459	169	255	237	2,636	1,181	1,648	2,450	4,998
27	Sulawesi Barat	0	0	0	0	0	0	0	0	0	0
Eastern region											
28	Nusa Tenggara Barat	1,256	1,112	1,177	1,099	1,322	1,267	1,432	1,428	5,187	4,906
29	Nusa Tenggara Timur	5,327	4,850	2,913	2,653	4,867	4,434	1,930	1,761	15,037	13,698
30	Maluku	1,225	572	619	567	778	1,385	1,589	1,409	4,211	3,933
31	Maluku Utara	129	33	130	594	53	1,571	49	772	361	2,970
32	Papua	3,954	1,288	11,767	2,349	125	3,735	0	5,066	15,846	12,438
33	Irian Jaya Barat	0	0	0	0	0	0	0	0	0	0
INDONESIA		105,942	113,184	80,233	70,770	66,602	81,388	45,397	53,701	298,174	319,043

Source: Statistik perhubungan 2004, 2006

Table 3.3 above describes about the local road condition in each province in Indonesia. We can see that the total length of local roads has increased from 298,174 km in 2004 to 318,041 km in 2006 (about 6.7% growths). It has an 81% share in the total Indonesia road network. Overall, in 2006, the condition of local

roads in Indonesia is: 35.6% in good condition, 22.3% in moderate, 25.6% in damaged and 16.6% in heavy damaged condition.

The road administrator has obligation and responsibility to perform road maintenance according to its respective authority. Road maintenance includes routine maintenance, periodical maintenance, and rehabilitation. The type of work in regard with the road condition is shown on Table 3.5 below

Table 3.4 Type of work based on road condition

Road condition	Type of work
Good	Routine maintenance
Moderate	Periodic maintenance/Rehabilitation
Damaged	Road upgrading
Heavy damaged	Reconstruction

Source: Bappeda Jabar, 2007

Routine maintenance is an activity to maintain and to repair any damage occurred on road segment which has stable level of service or good condition by following certain standard. Periodical maintenance is an activity to repair any damage which has been calculated in road design to return the road condition back to planned stability condition. Rehabilitation is an activity to handle any damage, which previously is not estimated in road design, occurred on some or certain parts of the road with light damage condition. Rehabilitation is performed to bring the level of road stability back to as planned. For roads with damaged or heavy damaged condition, the types of work should be performed are road upgrading or reconstruction respectively.

In general, the programming, planning, executing and prioritizing of local road segment maintenance in Indonesia is based on Technical Guidance for *Kabupaten* Road Planning and Programming (*SK No. 77/KPTS/Db/1990*) and follows *Kabupaten* Road Management System (KRMS), issued by Directorate General Road, Department of Public Works. *SK No. 77/KPTS/Db/1990* provides the rational basis and the systematic guidance for local road agency in composing

the annual road planning and programming. This guidance covers the general overview and the objectives of the road planning and programming procedures, and the information of the time and resources allocation to perform the road programs. Moreover, the detailed procedures comprise 5 main tasks which include: road database reviewing and updating, surveying, analyzing, cost estimation and preparation of annual program.

Furthermore, local road agency does not only perform road maintenance by itself, but also involves the private sector such as to engage consultants for studies, engineering design and work supervision; and local contractors for executing periodic maintenance through competitive procurement.

According to the Technical Guidance for *Kabupaten* Road Planning and Programming (*SK No. 77/KPTS/Db/1990*) and considering entire program urgency and budget constraint, road management should take following priority arrangement into account:

- a. Road maintenance work is the first and prime priority. All roads in good and medium condition should be maintained, whether regularly (routine) or periodically according to their damage grade.
- b. Road upgrading work is the second priority. This work is performed to manage road segments which are in damaged or heavy damaged condition, and road segments which are not stable in capacity.
- c. New road provision is the last priority.

Therefore, the priority list above will bring implications that there will be no new road provision as long as there is unstable road segment, both in its condition and capacity; and there will be no road upgrading works as long as there is road segment in good to medium condition which did not get proper maintenance. These implications are relevant with what Government Decree No. 34/2006 states that the local government should not fund road provision even though local government have been able to perform well road maintenance and upgrading by using minimally 20% of its local budget but the road condition is still not sufficient to provide minimal service standard defined.

3.2.4 Financial arrangement: road financing program in the local budget

According to Government Regulation 34/2006 Road, the local road administrator should maintain the roads which are under its authority and responsibility. It is indicated that in performing this obligation, the local government faces certain obstacles such as the limited local revenue sources which affect the availability of funding in the annual local budget. This condition signifies the limitation of funding which can be allocated for road administration, including for road maintenance. Therefore, the local road agency, on behalf of the local government, will perform a prioritization program in defining the road segment which will be maintained in regard with the availability of fund (Alie, 2006).

The prioritization of the local road administration is based on certain research and analysis of the technical planning program. This prioritization program will be arranged into a proposal which will be discussed in the deliberation of the local development plan (*Musyawarah rencana pembangunan/Musrenbang Kabupaten*) along with other proposals from other local government bodies. The deliberation process will refer to the local strategic plan, local general policy and budget, and working plan of the local government body.

The result or the document of the deliberation process will become a reference for the executive budget committee to discuss the design of the local budget. The executive will propose the result of the design to and discuss it with the legislative budget committee. When the agreement is reached, the document of the deliberation process between these two budget committees will be set as the bill of the local budget. The verification request of the local budget bill will be sent to the provincial government. After verification, the local budget bill can be defined as local budget document under local government regulation issued by the regent of the respective regency. This local government regulation of the local budget will be local policy of the regional development and will guide the local road agency (Alie, 2006). Furthermore, from the description above, it can be said that the fund allocated for local road financing comes from consolidated fund in

the local budget and may be vary each year depending on the availability of local revenues and the tension with other sectors in the budget deliberation process.

Referring to the Regulation of Minister of Internal Affairs No. 13/2004 The management of the local budget, the disbursement of fund in the local budget for road maintenance is as follows:

- a. Routine maintenance (self managed by local road agency)
 - 1) In the beginning of the year (and so forth on each quarter of the year), local road agency submits its budget to finance department of Local Secretariat.
 - 2) Finance department releases funds quarterly to the head of local road agency which allocates the funds for the monthly payment for routine maintenance works.
 - 3) Local road agency submits an accountability report to the finance department of Local Secretariat, which gives details of the use of funds released to it. The statement must be received by the finance department before the next quarterly allocation is released.
- b. Periodic maintenance (contracted to the third party)
 - 1) Monthly certificates for completed works are sent to the assigned official in local road agency which is responsible for periodic maintenance activity for approval.
 - 2) The assigned official submits the payment request for the contractor to the head of local road agency.
 - 3) The head of local road agency submits the payment request to the finance department of Local Secretariat in the prescribed form & content.
 - 4) Finance department releases funds directly to the contractor.

Particularly for the use of general and specific allocation fund for local road infrastructure in Indonesia, referring to Figure 3.2 in sub chapter 3.1.2 above, the following general requirements should be met (Alie, 2006):

- a. Regency/municipal road maintenance financing mainly comes from local budget of revenue and spending (*APBD*).

- b. Minimum standard of service for road infrastructure is used to allocate general and specific allocation fund.
- c. From the allocation of general allocation fund, the administering which can be performed includes road maintenance, upgrading and widening.
- d. Regency/municipal government will obtain specific allocation if its financial resources are not sufficient, it is urgent needs and the length of its regency/local road is less than the road network minimum standard of service prescribed. In the other words, specific allocation fund is granted to assure the implementation of prescribed minimum standard of road network service.

3.3 Concluding remarks

Vehicle ownership tax in the form of annual vehicle license fee in Indonesia is under the authority of provincial government. It is performed by *Kantor Samsat* which is established on local level. The provincial government will manage and return it back to local government in certain proportion in representation of tax revenue sharing. This revenue sharing can be identified and be counted as original local revenue (*Pendapatan Asli Daerah/PAD*) in the local budgeting. In the local budgeting, revenue sharing from vehicle ownership taxation, along with other revenue sources, can be allocated and be spent to fund the local development which also includes road infrastructure provision and maintenance.

Local road administrator has obligation and responsibility to perform road maintenance according to its respective authority. Road maintenance includes routine maintenance, periodical maintenance, and rehabilitation. Local road agency does not only perform road maintenance by itself, but also involves the private sector such as to engage consultants for studies, engineering design and work supervision; and local contractors for executing periodic maintenance through competitive procurement.

In the common government budget, revenue obtained from vehicle ownership tax is not fully nor specifically allocated to fund road provision and maintenance. Along with other local natural revenues, this revenue is utilized to fund and to provide all kinds of public services. In the new act of regional taxes and charges, the revenue of the vehicle ownership tax is earmarked to be allocated for the road development and maintenance and the improvement of public transport mode and facility. The earmarked revenue from vehicle ownership tax surely will be another way to finance road maintenance besides through common government budget.

CHAPTER 4

INTERNATIONAL PRACTICES OF ROAD FUND ADMINISTRATION

In this chapter, we will discuss about international practices of road fund administration by using Pakistan and Ghana cases. The discussion will be elaborated within legal, organizational, financial and operational framework. These countries are chosen because they have similarity with Indonesia as developing country and in facing poor public road condition. These countries have been implementing road fund administration to deal with road maintenance up to now since it was firstly established on respective countries. Pakistan represents the implementation of “first generation” road fund; meanwhile Ghana does the “second generation” road fund administration. Each country also has various organizational and financial arrangements on its road fund. Moreover, the availability of the literatures is also taken into account in regard to choose these international practices. In the end of this chapter, the lesson learned about road funding in general will be drawn and compared with the Indonesian context.

4.1 Ghana

4.1.1 Legal and organizational arrangement

Ghana Road fund was firstly initiated in 1985 to create a secure source of funding for road maintenance. The fund was managed as a part of government revenue by Ministry of Finance until 1997. Within this period, Ghana Road Fund experienced difficulties arising from management of the road fund, such as weak capacity, absence of user participation and lack of public support of user charges.

In 1997, Ghana Road Fund was restructured through the enactment of Road Fund Act 1997 by Parliament to provide a comprehensive legal framework and to regulate the conduct of the Road Fund (RF). The primary objective of the

fund under this law is to finance routine, periodic maintenance and rehabilitation of public roads in the country.

This law was also a milestone of the establishment of a management board for the fund, namely Road Fund Management Board, which task is to manage and administer the fund. The RF board has a permanent RF Secretariat and thirteen board-members, set up under the law, which consist of five members from public sectors and eight members from private sectors. RF was firstly and effectively operated in 1998, including funds collection and disbursement to the 3 road agencies (Ghana Highway Authority, Department of Feeder Roads and Department of Urban Roads) as agreed by the RF Board.

4.1.2 Financial and operational arrangement

After the restructuring, the fund obtained its revenue from fuel levy on petrol, kerosene and diesel; road, ferry and bridge tolls; and vehicle inspection fee. A vehicle registration fee was brought in with effect from September 1998 and so was the road user fee in January 1999. The fuel levy is a fixed charged per liter on petrol, kerosene, diesel and fuel oil, which is payable by the oil distribution companies. The government with approval from the Parliament defines the rates of fuel levy and communicates it to the oil distribution companies through Ministry of Fuel and Power. In 2002, the Government of Ghana agreed to set the fuel levy at the level of USc 9.5 per liter.

The revenues from the fuel levy compose 90% of the total RF revenue in both 1998 and 1999. The fuel levy is collected by Customs, Excise and Preventive Service and directly paid to RF bank account at the Bank of Ghana. The withdrawal of these revenues is made monthly and regularly by RF board. This has helped reducing uncertainties on budgetary process of the road agencies, allowing them to expedite contracting of works.

The RFs are disbursed to Ghana Highway Authority (GHA), Department of Feeder Roads (DFR), Department of Urban Roads (DUR) and National Road Safety Committee respectively for trunk roads, feeder roads, urban roads and road safety activities. The composition of the disbursements for 1998 was 52% to

GHA, 20% to DFR and 27% to DUR. The rest, 1% was disbursed to Ministry of Road and Transport for emergency road works and the RF Secretariat's operating expenditure. The defined composition of the disbursement is necessary to avoid the activity of the board disburses the fund unbalanced and largely on certain road agency and only channel the rest to the other road agencies.

The following procedure for disbursing funds was agreed upon with agencies at the beginning of the year (Kumar, 2000):

- a. routine maintenance
 - 1) Agencies submit their budgets before the beginning of the year to get approval by the RF Board
 - 2) RF Board gives funds monthly to the agencies' head office, which allocates the funds to their regional office for payment for routine maintenance works
 - 3) Agencies submit a Payment Report to the Secretariat of the RF, which provides details of the utilization of funds released to them. This report has to be received by the Secretariat before the next monthly allocation is released
- b. periodic maintenance
 - 1) Agencies submit their budgets before the beginning of the year to get approval by the RF Board, which explains details of all periodic maintenance activity and by region.
 - 2) Certificates of completed works are sent to the agencies for approval by the awarding authorities – Metropolitan, Municipal and Regional Tenders Boards.
 - 3) Agencies submit a schedule of approved certificates received for payment to the Secretariat of the RF after the end of each month in the prescribed format and content
 - 4) Agencies submit a Payment Report to the Secretariat after payment has been made.

In order to guarantee effectiveness of the fund, the monitoring activity is carried out (Kumar, 2000), which includes internal and external monitoring.

Internal monitoring is performed to check the use of fund and the quality of work, to ensure that the staffs of collecting were obeying the procedures and inspect projects financed by the funds. External monitoring comprise of both external financial and technical audits on the financial and technical performance of the fund.

In 1998, almost 95% of the road maintenance works in Ghana have been contracted to private sector (Kumar, 2000). The ministry and road agency engage consultants for studies, engineering design and work supervision. Local contractors mainly execute periodic and routine maintenance through national competitive bidding. International competitive procurement is held for major works.

Achievements which Ghana experienced with the existence of Ghana Road Fund are substantial improvement in the quality of road network and the performance of road contractors. In overall performance of road agencies, 98% of routine maintenance (19,857 km from 20,181 km planned) and 73% of periodic maintenance (2,940 km from 4,020 km planned) were achieved. Referring to road condition survey in 1995 – 1999, the decline in road condition was halted and turned around in 1998, as the result of the regular disbursement of funds by the RF Board to the agencies (Kumar, 2000). Moreover, regularly released funds to the road agencies enhance planning and programming activities; and also performance of the contractor because of the guarantee of prompt payment after the works completed.

4.2 Pakistan

4.2.1 Legal and organizational arrangement

The road maintenance fund in Pakistan is established under a notification, which is the Government of Pakistan Notification of National Highway Authority (NHA) Road Maintenance Account Rules 2003 (RMA Rules 2003), issued by Ministry of Communications on behalf of the Government of Pakistan. According to RMA Rules 2003, Road Maintenance Account is a commercial non-lapsable

account in Pakistani scheduled banks and should be maintain by the National Highway Authority. The major reason for the establishment is to provide an adequate, secure and stable source of funding for maintenance of national highway network.

The road fund in Pakistan is administered by National Highway Authority (NHA) Executive Board. The executive board comprises 9 members, all of the members come from public sector and it is chaired by the Chairman of NHA. The NHA executive board is responsible for approval of RMA budget and maintenance program. The administrative work of RF Board is carried out by Road Asset Management Directorate (RAMD) of NHA. It has no administrative autonomy since RAMD is recommended by Executive Board and approved by Federal Government

In Pakistan's road fund, there is no clear separation between the purchaser and provider functions. NHA is both financier and purchaser of road maintenance services, by having both responsibilities of financial management of road maintenance resources and management of road maintenance programs (Guillossou & Stankevich, 2008).

4.2.2 Financial and operational arrangement

According to NHA RMA Rules, 2003, the revenue sources for the road maintenance account come from tolls on roads and bridges, road use related fines (for instances, overloading and traffic offence), axle load charges, supplementary heavy vehicle fee, international transit fees and border fees. Moreover, NHA also should transfer periodically all revenues accumulating to it from the following other sources into the RMA, i.e. charges for commercial use of right of way; profits on bank deposits and income on investment of moneys in the Roads Maintenance Account, annual maintenance grant from the Federal Government, maintenance funds provided by international donor agencies, loans secured to finance any maintenance work shortfall and endowments and donations for maintenance and road safety from any organization, group or person. In fact, based on the data from RMA Financials 2003 – 2006, the largest contributor to

the RMA in average is toll income which is about 66% of RMA's share and the other contribution are 20% from government grant, 10% from fine collection and 4% from other sources (Guillossou & Stankevich, 2008).

The revenue maintained in RMA has financial autonomy since it is independent from general taxation and the financial management system is based on international standards as acknowledged in Pakistan for financial reporting (Guillossou & Stankevich, 2008). The financial management is upheld by the Finance Wing of NHA. The financial audit of RMA is performed by the engaged accountants appointed as independent auditors by the Executive Board of NHA. Moreover, the technical audit of road maintenance work is performed by an independent, sound professional firm or individual hired by Executive Board.

Since its establishment in 2003, there has been a significant increase in revenues from 2 main sources of maintenance funds, which are tolls and government grants. The total revenues in 2003 is PKR 5,372 million or equal with USD 93.4 million (2000 price – USD 1 = PKR 57.51), which government grant and toll contribute PKR 825 million and PKR 3,435 million respectively. The trend is always raising and in 2006, the total revenue is PKR 12,486 million which government grant contributes PKR 4,816 million and toll PKR 6,295 million. However, there is a decrease of government grant in 2007 since the government realized the increasing trend of the revenues and decided to reduce the support and allow RMA to count on its own revenue source.

The types of network which receive the allocation of the funds are national highways. The type of work which is given the first priority in the eligible expenditure is routine maintenance. The other eligible expenditures are respectively rehabilitation, geometric improvement and highway safety improvement, new toll plazas and weigh stations, and corridor management.

NHA Executive Board contracts out some of the road works to construction industry through competitive bidding. The procedure of disbursement of the fund, as mentioned in NHA RMA Rules 2003, is as follows:

1. contractor submit to the Engineer⁷ progress report and request for payment
2. Engineer submit the certification of about the works, goods and services have been carried out and delivered according to the specification to RAMD
3. RAMD disburse the payment to a contractor through a mailed “payee A/c only” cheque or bank transfer into bank account of beneficiary through bank

According to RMA Financials 2003 – 20078, the disbursement of the funds show an increasing trend. It increases from PKR 2.8 billion in 2004 to PKR 8.19 billion in 2007 or almost four folds in the period of 4 years.

4.3 Concluding Remarks

RMA in Pakistan was established under a government notification and practically it shows the signs of success. However, this could have a long term risk if it is compared with Ghana Road Fund which was established under an act. A sound legal basis, in theory, can make a road fund more sustainable if it is founded under a Law or Act rather than through a secondary level of law such as Decree or Rules and Regulations since the secondary level of law may be easily amended or cancelled with the change of a government. However, beyond the soundness of the legal framework, the other important thing is to appraise the proper implementation of the respective legislations and to develop good governance at the country. Furthermore, both regulations in the respective countries have specified the arrangements to be the basis for the implementation of the road funds (see Table 4.1 below).

Both in Ghana and Pakistan, the road fund is managed by a specific board. The difference between these boards lays on the separation of the purchaser and provider functions. In Pakistan, NHA Executive Board plays both roles, while in

⁷ “Engineer” means any person employed by the Chairman for supervision and execution of a contract between the National highway Authority and a contractor.

⁸ <http://www.nha.gov.pk/Downloads/RFPs.asp>

Ghana there is clear separation of the function. The road fund board is to be the financier/purchaser and the executing road agencies are to be the providers. This may be considered that the road fund board in Pakistan is more prone to a conflict of interests that may abate financial discipline and compromise efforts to control costs and maintain quality. Therefore, Pakistan NHA has set up a road asset management system (RAMS) to increase transparency in the planning system and conducts periodical financial audit to improve financial management.

There is a clear and specific designation of revenue source for the road funds in both countries, which is from road user charges. Ghana relies heavily on fuel levy and Pakistan on tolls and government grant. Another characteristic that can be seen is that the revenue will be channeled through RF accounts before being transferred to road departments/agencies. There is also a clear designation in Ghana and Pakistan road fund in regard with the type of work priority, where the road maintenance is at the top of the priority list among other road works. This will imply that there is secured allocation for road maintenance before another road works take place. Moreover, the type of network which will receive the funds has also been defined clearly. While Pakistan RMA dedicates the funds mainly to maintain the national network, Ghana RF disburses the funds to trunk roads, feeder roads and urban roads.

The road maintenance work is not only performed by the road agency itself in both countries, but also it is contracted to the construction industry through competitive procurement. Ghana has also detailed internal and external monitoring procedures to ensure efficient use of money, accompanied by monthly progress reports and external financial and technical audits.

The characteristics and the arrangements of the implementation of the road fund in Ghana and Pakistan will be the lessons learned to evaluate the possibility to initiate the local road maintenance fund in Indonesia, as discussed further in next chapter.

Table 4.1 The arrangement in Ghana and Pakistan road fund

Arrangement	Ghana	Pakistan
Legal arrangement		
Legal basis	Act	Notification
Organizational Arrangement		
Administrator	Ghana Road Fund Board	National Highway Authority (NHA) Executive Board
Separation financier - provider function	Yes	No
Day-to-day management	Secretariat	RAMD
Board members	13	9
composition of the board (public-private)	5 // 8	9 // 0
Financial arrangement		
Source of fund	Fuel levy on petrol, kerosene and diesel; road, ferry and bridge tolls; and vehicle inspection fee.	From tolls on roads and bridges, road use related fines, axle load charges, supplementary heavy vehicle fee, international transit fees and border fees.
Major revenue	fuel levy	road tolls & government grants
Channeling to road fund account	directly to RF account	directly to RF account
Disbursement	force account and contract account	force account and contract account
Operational arrangement		
Type of work	maintenance; routine and periodic	maintenance (first priority), rehabilitation, geometric improvement and highway safety improvement, new toll plazas and weigh stations, and corridor management
Type of network	trunk roads, feeder roads, urban roads	national roads
Technical audit	yes	yes
Financial audit	yes	yes

CHAPTER 5

THE POSSIBILITY TO INITIATE THE LOCAL ROAD MAINTENANCE FUND IN INDONESIA

We have discussed the current situation in Indonesia in regard to the vehicle ownership taxation and road management in chapter 3. We also have discussed the international practice of the road funds in chapter 4. In this chapter, we will discuss about the possibility to initiate the local road maintenance fund in Indonesia based on lesson learned from other countries and what Indonesia can learn from those lessons. The discussion will be elaborated in legal, organizational, financial and operational arrangements.

5.1 Legal arrangement

5.1.1 Lesson from other countries

Ghana and Pakistan have established a road fund with a certain legal basis, which is an act in Ghana and a notification in Pakistan. These legal frameworks, more or less, guide the objective of road fund establishment, the administering board, the composition of the board, the type of work, the type of network which will receive the fund, the revenue source, the disbursement of the fund and the audit (see Table 4.1). The important thing to consider beyond the soundness of the legal basis is the good governance which is characterized by government effectiveness in providing public services.

5.1.2 What can Indonesia learn from the lesson of other countries?

The regulation which mentioned about the earmarking issue of vehicle ownership tax revenue is Act No. 28/2009 Regional taxes and charges. In that law, it is mandated that minimally 10% of the total revenue from vehicle

ownership tax, including the revenue sharing to the local/municipal government, is allocated to road development and/or maintenance, and the improvement of public transport mode and facility. Moreover, the government of Indonesia also has enacted the laws (along with their secondary level regulations) regarding the implementation of decentralization and the balancing between central and regional financial administration. One object in the decentralization process in Indonesia, as also stated in the road law, which is important to consider is that the central government has transferred the authority to administer local/municipal road to the local/municipal government.

Here, we can translate and interpret that the local governments in Indonesia have enough legal basis to initiate the implementation of local road maintenance. The local government is the road administrator as regulated in Act No. 38/2004 which has the obligation to administer the local roads in its respective region. Ghana and Pakistan have established a road maintenance fund with a different legal basis, an act (Ghana) and a notification (Pakistan). Even though some critics said that a sound legal basis can make a RF more sustainable if it is established through a Law or Act rather than through a Decree or Rules and Regulations, (as the latter may be easily amended or cancelled with the change of a government), the important thing now is how the existing related regulations can be interconnected, synchronized and implemented.

However, the term or rule about the earmarking of the vehicle ownership tax revenues in regional tax law is only stated in one rule, which is Rule 8 verse (5). There are three types of program which may receive the earmarked revenues as stated in that rule, namely road development, road maintenance and improvement of public transport mode and facility. The rule has not specified the detailed information about the exact proportion of the allocation for road maintenance alone. Hence, this rule needs to be specified and clarified, perhaps under government decree or regulations, at least as clear as Ghana RF or Pakistan RMA legal framework which provide the information of the objective, the agency in charge, the type of work (e.g. aimed for road maintenance), the type network (e.g. aimed for local roads), the disbursement of the fund and the audit. The

specification in the proposed regulation should consider protection from political interference by establishing full or partial autonomous body, security for the fund flows, obviously defined responsibilities and regulatory rules to make sure accountability.

Regarding with the government effectiveness⁹ as indicator of good governance¹⁰ at country level, Indonesia still has a lot work to do to pursue and ensure it. The government effectiveness can be measured with Worldwide Governance Indicator (WGI)¹¹. This indicator provides the estimation of governance measured on a scale from approximately -2.5 to +2.5. The higher values correspond to better governance. According to Worldwide Governance Indicator (WGI), in 2008 the Governance Score for Indonesia is -0.29 and it is still far behind from Ghana which score is -0.08. Even though it is not the only parameter of government effectiveness, each government level in Indonesia has to show the government's commitment to such policies in regard with the proper implementation of the related legal basis.

5.2 Organizational arrangement

5.2.1 Lesson from other countries

As in many other countries, funding of road maintenance has been a major problem in Pakistan. In order to address this problem, the Government of Pakistan has started an off-budget financing arrangement by establishing a road fund called

⁹ Government effectiveness measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (Guillossou & Stankevich, 2008).

¹⁰ According to World Bank, governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them. (<http://info.worldbank.org/governance/wgi/index.asp>)

¹¹ The governance indicators aggregate the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. The data are gathered from a number of survey institutes, think tanks, non-governmental organizations, and international organizations. For further reading, see Kaufmann D., A. Kraay, and M. Mastruzzi 2009: *Governance Matters VIII: Governance Indicators for 1996-2008* (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1424591)

Road Maintenance Account (RMA). The National Highway Authority (NHA) has introduced a fee-for-service concept on national highways. The road fund practice in Pakistan may be seen as first generation road fund. It is characterised by the earmarked revenue from a certain sources to be allocated specifically to the road works. Although RMA lays the major revenue on road tolls revenue, RMA also gets receipts from all sources specifically earmarked for highway maintenance which are channelled through the road fund.

Ghana and Pakistan has established a specific board to administer the road funds in the respective country. The difference between these boards lays on the separation of the purchaser and provider functions. In Pakistan, NHA Executive Board plays both roles, while in Ghana there is clear separation of the function. The road fund board is to be the financier/purchaser and the executing road agencies are to be the providers. To be noted, the financier/purchaser should be responsible for managing resources and financing maintenance program while the provider for planning, procuring and managing road maintenance works. To cover the double-roles played by NHA Executive Board, Pakistan NHA sets up a road asset management system (RAMS) to increase transparency in the planning system and conducts periodical financial audit to improve financial management.

With the clear function separation and delineation of responsibilities, Ghana practice may be seen better than in Pakistan, since it can prevent a conflict of interest that may decrease the financial discipline and compromise the efforts to control cost and maintain quality.

5.2.2 What can Indonesia learn from the lesson of other countries?

In the Indonesian local/municipal context, generally the public revenues will be managed and spent by the finance department of the local secretariat. This governmental body is also responsible for the disbursement of the funds for the public program in each executing agencies, including *Dinas Binamarga* (road agency). When the annual road work program is agreed and included in local budget (see sub chapter 3.2), *Dinas Binamarga* will perform competitive procurement especially for the periodic maintenance, rehabilitation and

reconstruction works. Usually the routine maintenance will be executed under the force account, which means that the road maintenance activities are performed by *Dinas Binamarga*'s own personnels and equipments, rather than by outside labor or the third party. Moreover, the provision of materials needed for this maintenance work, such as asphalt and coarse aggregate, is contracted to the supplier through competitive bidding as well. The process of the fund disbursement for the routine and periodic maintenance, more or less, is similar with Ghana experience (see sub chapter 3.2 and 4.1).

Within this organizational arrangement, we can see that actually there has been a splitting function between a financier (financial bureau) and a provider (local road agency) in local road maintenance in Indonesia, even without establishing a new entity such as a road fund board. Learning from Ghana experience, the important thing to consider is to define the clear roles and responsibilities among these two entities in regard with road maintenance fund. There should be obvious coordination between these two entities to ensure the management and disbursement of the resources can be implemented appropriately.

5.3 Operational arrangement

5.3.1 Lesson from other countries

There is a clear designation of revenue source for the road funds in both countries, which is from road user charges. Ghana relies heavily on fuel levy and Pakistan on tolls and government grant. Another characteristic that can be seen is that the revenues are channelled through RF accounts before being transferred to road departments/agencies. There is also a clear designation in the Ghanaian and Pakistani road funds in regard to the type of work priority, with the road maintenance being at the top of the priority list.. This implies that there is a secured allocation for road maintenance before another road work takes place. Moreover, the type of network which will receive the funds has also been clearly defined. While Pakistan RMA dedicates the funds mainly to the maintenance of

the national network, Ghana RF disburses the funds to trunk roads, feeder roads and urban roads.

The road maintenance work is not only performed by the road agency itself in both countries, but also it is contracted to construction industry through competitive procurement. Moreover, Ghana has detailed internal and external monitoring procedures to ensure efficient use of money, accompanied by monthly progress reports and external financial and technical audits.

5.3.2 What can Indonesia learn from the lesson of other countries?

The major revenue source of the road maintenance fund in Pakistan comes from road tolls. National Highway Authority (NHA) in Pakistan has initiated the implementation of the fee-for-use principle on national highways and strategic roads which is by collecting tolls from road users on almost all major highways. Meanwhile, in Ghana, the major revenue comes from fuel levy. It is designed to be a fixed charge on the fuel wholesale price. Beyond the different major source of revenue for road maintenance fund, we may see that both countries have ensured stable revenue from road related charges.

In the Indonesian context, one road related tax is vehicle ownership tax. In the new law of regional taxes and charges, the revenue from this tax has been earmarked, at least 10% of total revenue, to the road development and/or maintenance.

The registered number of vehicles in Indonesia has grown significantly at a rate which was larger than the growth of the real GDP. Within the period 1998 – 2008, the registered number of vehicles has grown around 250% (or an average of 17% per year). This impressive growth contributes significantly to the revenue growth. On average, the revenues have been growing much more rapidly than the economy in general.

To estimate the revenues needed, the resources to maintain the local road network should be estimated. It is not easy to get an accurate estimation because it needs highly detailed and localized data, such as road segment/network's length and type of surface, local topographical data and the climatic condition

(precipitation rate). The recent condition of the road network also has an effect on the economic returns to periodic and routine maintenance. In the case of the heavy damaged or largely deteriorated road, it is not economically efficient to try to maintain it. It has to be entirely reconstructed before regular or normal maintenance can be valuable. Moreover, the annual unit cost (Rp/km) of road maintenance should be available to get an accurate estimate.

Especially for the local roads network, only 36% (or around 113,000 km of length) of total local roads are in good condition and the rest is in moderate to heavy damaged condition. The government through the Ministry of Finance has published the national standard of road maintenance cost¹², which varies on each province in Indonesia. It is around Rp 37 - 41 million per km (around € 3,270 – 3,630 per km¹³). By using the national standard price, the funds needed to perform routine maintenance, in order to keep the level of service of these local roads amount to almost Rp 4 trillion (around € 354 million) for the whole country. This may be a rough and too simplified estimation. However, it will at least give us the suggestive picture about the large funding needs for road maintenance. The study from Directorate General of Road estimated that the vehicle ownership tax contributed Rp. 2.1 trillion (around € 186 million) per annum. In the common local budget in Indonesia, this revenue is utilized to finance public programs together with other revenues. If the earmarking regulation is applied, minimally 10% of this money can be allocated specifically to finance not only the road maintenance, but also the road development and the improvement of public transport mode and facility.

Moreover, revenues from the vehicle ownership tax are collected by the provinces and shared with their part local/municipal in regard with the proportion specified in the Act 28/2009. This tax contributes for a major part of the own source revenues (*Pendapatan Asli daerah/PAD*) of regional governments, even though the proportion varies considerably from region to region. The proceeds are

¹² Based on national price standard on FY2010 issued by Ministry of Finance (PMK 108/PMK.02/2009)

¹³ Based on July 2010 exchange rate – current price (the currency converter is available on <http://www.xe.com/ucc/>)

earmarked with minima 10% for financing the road programs. Even if the proceeds are all allocated for financing the road maintenance, those may not meet the funding needs. However, we may not conclude that the revenue from road related tax is not sufficient for road maintenance fund because we have not taken the revenue from fuel tax into account; which is not in the scope of this discussion.

The administration of the vehicle ownership tax is fairly inexpensive and simple. The vehicle owner only needs to go to the *Kantor Samsat* in the respective locality or municipality and the official on the *Kantor Samsat* only needs to know about the type, the engine capacity and the age of the vehicle. The cost for going to the Kantor Samsat may vary among vehicle owners, according to the distance of the office from their residential location. However, the vehicle owners may be not significantly burdened with this cost. It is simple to detect the evasion of the vehicle ownership tax because the vehicle's license plates display both the month and year of expiry and they are replaced on an annual basis. Hence, the vehicle ownership may be considered as revenue source for local road maintenance besides other road related or vehicle based tax such as fuel tax and vehicle transfer fee.

The fund flow mechanism of the public revenues and expenditures in the local budget on the present arrangement is displayed in Table 3.1 (see sub chapter 3.1.2). The lesson from Pakistan and Ghana experience explains that they place the funds for road maintenance in the specific account separated from general tax revenues. Learning from that experience, the local government in Indonesia may create specific account as long as it is accommodated by the existing regulation about local budget management. The proposed fund flow mechanism, specifically for the local road maintenance, in this research is shown on Figure 5.1

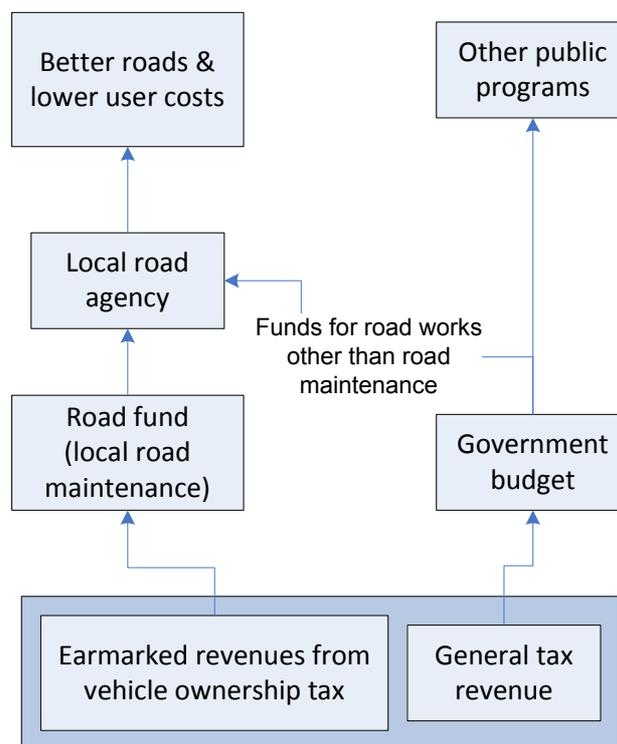


Figure 5.1 Local road maintenance fund

The Pakistan Road Maintenance Account (RMA) and Ghana Road Fund (GRF) have defined clearly the type of work and network which their road funds will finance. This clarity may ensure that the road fund will not be allocated for other purposes. As mentioned before, RMA will finance national highway and mainly its maintenance. Meanwhile, GRF will finance trunk, feeder and urban roads and also mainly focus on the road maintenance.

In the Indonesian context and the discussion of this thesis, the type of work which the road fund will finance is emphasized on road maintenance since this road work is a first priority before other road works will take place. This has been prescribed in national policy of road work prioritization and *Kabupaten* Road Management System (KRMS). Around 64% of the local roads in Indonesia are in damaged and heavy damaged condition. The rehabilitation and reconstruction works of these roads surely need larger amount of funding. Relying only on the earmarked revenue for performing these road works may not be sufficient. Thus, the other road works such as rehabilitation and reconstruction are

suggested to be financed through other source which may provide larger funds such as governmental transfer or international donors. Moreover, the type of network is emphasized on local roads since the majority of roads in Indonesia are local roads and the most of the road users (as the vehicle owners and taxpayers) use these local roads in their daily activities. The roads in good condition should be maintained and increased. The specification of the type of network and work should be regulated clearly to avoid the diversion of the funds to other programs.

5.4 Concluding Remarks

The new act of the regional taxes and charges mentions about the earmarking issue of the revenue of vehicle ownership tax. The revenue from vehicle ownership tax is allocated minimally 10% for the road development and/or maintenance, and for the development of public transport mode and facility. The proportion from those minima for road maintenance alone is not specifically defined. In that statement, the type of networks which will receive the funds from this tax is not described clearly as well. Implicitly, this regulation is aimed to the provincial and local/municipal roads since the provincial and local/municipal governments are the agents of vehicle ownership tax implementation and they enjoy the share of the revenue from it. This at least will give an opportunity; if it can not be said as an obligation; to the local government as the agent and the local road administrator, to allocate this revenue specifically to local road maintenance. Therefore, there is the possibility to initiate a local road maintenance fund at the local level.

The vehicle ownership taxation is acknowledged to give a big contribution to the regional own revenue in Indonesia, in line with the rate of vehicle ownership growth. The large sum of revenue from vehicle ownership taxation surely will attract many vested interests to utilize it. In regard to the earmarking regulation in regional taxes & charges law, it is hoped that this regulation can encourage the local governments to have strong commitment to implement it. The local governments should guard the minimally 10% allocation of the revenue for

the road expenditures, not for other public expenditures or new priorities different from those specified in the related act/law.

Moreover, a good communication and understanding among sectors, political will and good governance are needed to implement the securing and increasing process in financial allocation to the road maintenance. The importance of road maintenance should be well communicated and informed to the stakeholders of the local government. The road maintenance program may be seen as less popular than road rehabilitation or new construction. The road development often becomes a top priority on the political agenda since it is a more visible output of road works to the public eye, and that will lead to gaining public acknowledgement of the government performance. Moreover, the good governance, which is appraised by the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies¹⁴, should be developed to secure the reliability of the related legal basis and its proper implementation.

In regard to the implementation of local road maintenance funds, the rules which describe the detailed and specific organizational, financial and operational arrangement of the funds should be enacted soon. The nature of law or act Indonesia is providing regulation in general. This offers flexibility in regard to not easily to be amended. Therefore, the enactment of the new law or act should be followed by the regulation in the secondary level which provides specific technical and procedural guidance. This is important to avoid different interpretation and misconception of the regulation which may lead to the different implementation, outside from what the law has mandated.

¹⁴ Based on the Worldwide Governance Indicators - issued by World Bank

CHAPTER 6

CONCLUSION, RECOMMENDATION AND REFLECTION

The description and discussion in this research will be summarized in this chapter. This chapter comprises 3 sub chapters, which are conclusion, recommendation and reflection. In sub chapter 6.1, we will know the conclusions for all discussion in this research and also these will be the answer for all research questions of this thesis. The answer of the research questions will be the basis for policy recommendation and presented in sub chapter 6.2. Furthermore, the strength and weakness of this research will be presented in sub chapter 6.3 as well as the suggestion for further research.

6.1 Conclusion

This research was started by indication of the funding problem of road infrastructure in Indonesia. There was lack of fund for local/municipal road infrastructure development and maintenance. There were also competing local funding needs and tensions between sectors. Revenue obtained from vehicle ownership tax was not fully nor specifically allocated to fund road provision and maintenance. This revenue is utilized to fund and to provide all kinds of public services.

This research was aimed to understand the vehicle ownership tax practice in Indonesia and the possibility to initiate the local road maintenance fund in Indonesia by using vehicle ownership tax as revenue source. The research methodology which was used comprised the policy document analysis and literature review.

Related with the problem and the objective mentioned above, the research questions were raised and have been answered. The research questions included *what are the objectives of transport pricing policy, road maintenance and road*

fund based on international literatures; how are vehicle ownership taxation and road management being applied in Indonesia; what kind of international practices in road funding schemes can be compared with the Indonesian context and what is the possibility to initiate the local road maintenance fund in Indonesia, by using revenue gained from vehicle ownership taxation and based on the general lessons of international road fund practice.

The objectives of transport pricing are to internalize external cost, to reduce transport demand, to gain revenues and to raise funds. The revenues gained can be used for giving back the benefit to the road user in the form of the good maintained roads. Roads need to be maintained in order to keep their level of service. The good & maintained road will give the benefit such as keeping the user cost low. One mechanism to finance road maintenance is through the implementation of a road fund. A road fund, which is a holding of dedicated revenues collected as road user charges, outside the central government's general budgetary framework, may be responsible for maintenance and/or capital expenditures. The advantages of the road fund include a stable road budget and avoiding 'political' diversion of road user charges; efficient programming and lower contracting cost promoted by stable road budget; more acceptance on increasing user charges because road fund can be identified and monitored; cost recovery and equity facilitation, which means that the beneficiaries and those who pay can be matched; and more efficient management of funds and increasing sense of accountability promoted by easily monitored programs and a link between payments and benefits. Meanwhile, the disadvantages comprise an entailed cost in terms of loss of budgetary freedom, especially in unpredictable fiscal difficulties; distortions between different economic sectors, specifically leading to overspending on road sectors; and a tendency to use road fund for new construction rather than for maintenance

Vehicle ownership tax in Indonesia is one of provincial taxes, regulated in the act of regional taxes and charges. It is in the form annual registration fee and the calculation is based on a prescribed cap/limit of vehicle sales value and a certain coefficient which reflect environmental and road damage. This tax has

been acknowledged for giving large contribution to the regional revenue. The revenue of this tax is shared among provincial and local/municipal government in a prescribed proportion. In the new act of regional taxes and charges, the revenue of this tax is earmarked to be allocated to the road development and maintenance and the improvement of public transport mode and facility. Moreover, according to the road law and rules, public roads in Indonesia are managed by each government level according to the road status. Hence, local government, through executing road agency, is responsible for the maintenance, rehabilitation and construction of local roads. Around 81% of total road network in Indonesia are local roads and only 36% of local roads are in good condition. Local governments certainly face the lack of funding and competing funding needs for road maintenance. The earmarked revenue from vehicle ownership tax surely will be another way to finance road maintenance besides through common government budget.

The international practices which were studied in this thesis are Road Maintenance Account (RMA) in Pakistan and Ghana Road Fund (GRF), based on their legal, organizational, financial and operational arrangement. The lessons are drawn from this study and comprise the soundness of legal basis, the different organization which manages and allocates resources, the clarity of function between financier and provider, and the clear design of revenue source for the road funds, type of network and type of work, fund channelling and disbursement, and financial and technical audit.

Based on lesson learned from Pakistan and Ghana experience with their road fund and current regulation and situation in Indonesia, it is possible to initiate local road maintenance fund in Indonesia, by using earmarked revenue from vehicle ownership tax. However, the rules which describe the detailed and specific organizational, financial and operational arrangement of the funds have not been enacted yet. The enactment of the new law or act should be followed by the regulation in the secondary level which provides specific technical and procedural guidance. This is important to avoid different interpretation and misconception of

the regulation which may lead to the different implementation, outside from what the law has mandated.

Above all, this research has been done comprehensively, starting from the review of the transport pricing policy, road maintenance and road funding concepts. Within legal, organizational, financial and operational arrangement; the vehicle ownership taxation and road management in Indonesia and the international practice of road funds were studied. Finally, based on the lesson learned from other countries and what Indonesia could learn on each lesson, the possibility to initiate the local road maintenance fund in Indonesia was formulated.

6.2 Recommendation

The regulation of the earmarked revenue from vehicle ownership tax to be allocated for road work and public transport may be seen as the effort of the government not only to give the benefit back to the road users in the form of maintained road and improved public transport mode and facility, but also to secure the funds are really allocated to the road sector. However, this regulation is only mentioned in one article in the law of regional taxes and charges. The specific rules which describe the detailed arrangement for the implementation have not been enacted yet. Therefore, it is recommended that the government should develop the specific rules which regulate further the implementation of road maintenance fund.

The legal strategy should be developed to provide protection of funds from political interference, security for the revenue stream, obviously defined responsibilities, regulatory controls to make sure accountability and strong commitment to properly implement the regulation on each government level. Moreover, the organizational, financial and operational strategy should be developed to give assurance on the implementation level. These will include decisions to establish a new organization to manage the funds or to employ existing governmental bodies; ensuring the collecting, channelling and disbursement of the funds in a transparent and accountable process; evaluating the

existing regulation can accommodate to open a specific account of road maintenance in the government budget or commercial bank; defining type of network which the funds will finance and ensuring that the financial and technical audit process are in public domain.

6.3 Reflection

The regulation about earmarked revenues of vehicle ownership tax is a new. This regulation may be seen as closely related to set up the road fund in Indonesia. The regulation has not specified explicitly the arrangement needed to implement it. Moreover, the growing discussion in regard with road fund in Indonesia is mostly to be directed to set up road fund at national and provincial level. Having evaluated the current context of Indonesia, especially on the existing regulation and arrangement of the vehicle ownership tax and road management, this thesis gives an overview about the possibility to initiate the local road maintenance fund in Indonesia, by using revenue from vehicle ownership tax.

This thesis is still open for improvement, however. This thesis only discusses about one revenue source that comes from road related/vehicle based tax, which is vehicle ownership tax. Moreover, the data and indication used for calculating the estimation of road maintenance funding needs and the revenue from vehicle ownership tax are too general. This thesis also has not covered the detailed organizational and operational arrangement in local road maintenance fund.

Therefore, for further researches to improve this thesis the following researches are needed; i.e. other road related tax as revenue source for road maintenance funding in regard to the possible revenue sources from road related tax such as fuel tax, fuel levy and vehicle transfer fee; the more detailed and localized study to estimate the road maintenance funding needs by taking notice on each local road length, condition and type of surface, local topographical data and the climatic condition (precipitation rate); and study about recommending the detailed arrangement needed in the implementation of local road maintenance fund such standard operational procedure of the disbursement of the funds.

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APPENDIX

Appendix 1. The division of responsibility among government level in road administering in Indonesia

No.	Administering Obligation (Activity & Description)	National Strategic Road	National Road	Provincial Road	Local/Municipal Road	Rural Road	Toll Road	Specific Road
1	Section 1.01 Development Obligation							
	1.1 Regulating							
	Formulating planning policy	Central	Central	Provincial	Local/Municipal	Local-Municipal	Central	Central
	Composing general planning policy and programs	Central	Central	Provincial	Local/Municipal	Local-Municipal/Rural	Central	Central
	Composing laws and regulations	Central	Central	Provincial	Local/Municipal	Local-Municipal/Rural	Central	Central
	Composing guidance and technical standard	Central	Central	Provincial	Local/Municipal	Local-Municipal/Rural	Central	Central
	1.2 Services							
	Permits	Local/Municipal	Local/Municipal	Local/Municipal	Local/Municipal	Local-Municipal	Central/provincial/Local-Municipal/Corporate	Related institution
	Information	Central	Central	Provincial	Local/Municipal	Local-Municipal/Rural	Central/Corporate	Related institution
	1.3 Empowering							
	Guidance and counseling	Central	Central	Central/Provincial	Local/Municipal	Local-Municipal/Rural	Central	Central
	Education and training	Central	Central	Central/Provincial	Local/Municipal	Local-Municipal/Rural	Central	Central
	1.4 Research and development							
	Research	Central	Central	Central/Provincial	Provincial/Local-Municipal	Local-Municipal/Rural	Central	Central/Corporate
	Assessment	Central	Central	Central/Provincial	Provincial/Local-Municipal	Local-Municipal/Rural	Central	Central/Corporate
	Investigation	Central	Central	Central/Provincial	Provincial/Local-Municipal	Local-Municipal/Rural	Central	Central/Corporate
	Development	Central	Central	Central/Provincial	Provincial/Local-Municipal	Local-Municipal/Rural	Central	Central/Corporate

2	Establishment							
	Feasibility study	Central	Provincial	Provincial	Local/ Municipal	Local- Municipal/ Rural	Corporate	Corporate
	<i>Continued</i>							
	Technical planning	Central	Provincial	Provincial	Local/ Municipal	Local- Municipal/ Rural	Corporate	Corporate
	Construction	Central	Provincial	Provincial	Local/ Municipal	Local- Municipal/ Rural	Corporate	Corporate
	Operating	Central	Provincial	Provincial	Local/ Municipal	Local- Municipal/ Rural	Corporate	Corporate
3	Section 1.02 Monitoring							
	Development order	Central	Central	Central	Provincial/ Local- Municipal	Local/ Municipal	Central	Central
	Establishment order	Central	Central	Central	Provincial/ Local- Municipal	Local/ Municipal	Central	Central
	Utilization order	Central	Central	Central	Provincial/ Local- Municipal	Local/ Municipal	Central	Central

Source: Ministry of Public Works, 2004 in Alie (2006)