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# REFORMULATING POLICY ON FREQUENCY USAGE FEES AS NON-TAX STATE REVENUE: URGENCY AND ITS IMPLICATIONS

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***ABSTRACT***

*Spectrum/frequency is a backbone of telecommunication industry and an input to produce various goods and services. Because of its being a limited resource, by tradition it has come to be owned by the state. Many governments levy usage fees/charges to establish a managed spectrum environment or to generate national fiscal income. This varies in different countries. Government of Indonesia levies several taxes and fees/charges to telecommunication operators. As a result, there are double or multi-tax costs of taxation, which can distort productivity. This phenomenon shows that government should consider reformulating frequency usage fees policy in order to minimize the cost of taxation, promote teledencity, affordability, and growth of telecommunication industry. Moreover, many researches have showed that telecommunication industry could accelerate Gross National Product (GNP).*

*This study describes all taxes and fees/charges applied to telecommunication industry in Indonesia, comparing them to those of some other countries, and analyze frequency usage fees based on the theory of earmarking tax. An alternative way to reformulate levy policy on frequency usage fee is analyzed by simulating its impacts using system dynamic.*

*The result shows that taxes and fees/charges applied to telecommunication industry increased cost of taxation, and government should simplify in order to give them more opportunity to increase their productivity resulting in products of good quality and affordable price. Furthermore, it is better for government to levy frequency usage fees based on earmarking concept, so the frequency regulator can optimize its role to manage spectrum effectively and efficiently. Moreover, the government can provide public and universal services, especially in rural areas.*

***Keywords:*** *Frequency Fees, Earmarked Tax, Cost of Taxation, Supply side tax policy*

[1] This research was carried out in collaboration with PT LAPI ITB. This research is divided into 2 i.e. (1) Simulation on Bandwidth Index and Power Index Adjustments for Cellular System conducted by ITB Team (Dr. Aditya as the Head of the Team) and (2) Analysis on the Levy of Spectrum Fees as Non-Tax State Revenue Viewed from State Financial Concept and Supply Side Policy (Dr. Haula Rosdiana, M.Si as the Head of the Team; Members: 1. Dra. Inayati, M.Si. 2. Umanto, S.Sos., M.Si. and 3. Aisyah Farida Sari, S.Sos). The writer is willing to put forward any supporting data when needed as the consequence of publishing this study.

## INTRODUCTION

Frequency/spectrum is a productive resource since it is an input to produce various goods and services (Crandall, 1998:22). The existence of this resource is limited and traditionally is owned by the state. Therefore, associated with the intended use, place, power, and scope of the transmission, its use should be regulated (Chowdary, 2003).

Changes in telecommunication technology such as mobile telecommunication and wireless Local Area Network (LAN) in 1990 and the 2000s led to sharply increasing demand for spectrum (Marks & Yaguchi, 2004: 77). Thus, the use of frequency, a limited natural resource, should be directed for the sake of the state and public interests.

In general, the state levies fees/charges for use of frequencies. This levy is intended to provide a managed spectrum or to increase government revenues (Cheng Yu, *et al.*, 2004: 680). The quantity of charges between one country and other countries varies widely, in that it depends on the aims. Some countries levy small fees/charges because the levy is intended to cover the cost of spectrum management (for cost recovery). Some other countries impose high fees/charges to increase government revenue.

Indonesian government is a state conducting charges for the use of frequency/spectrum. These charges, categorized as Non-Tax State Revenue, are called the Frequency Right of Use Fee (BHP Frequency), or in short it can then be said as frequency usage fee.

When this study was being conducted, the frequency usage fee for telecommunication operators running cellular system of Global System for Mobile Communication (GSM) second Generation (2G) was determined based on Radio Station License (ISR) on each channel in the Base Transceiver Station (BTS). Therefore, frequency usage fee increases if an operator develops its network (e.g. by adding BTS) because the fee to be paid is calculated on the basis of channel utilization in each BTS. Hence, network development or quality improvement means additional cost for wireless mobile network operators.

At the time when the number of services was still very limited and mobile telecommunications tariffs were relatively expensive, the policy on frequency charges did not overload operators. These conditions have been changing along with the increasing number of operators causing an increasingly tight competition. As the consequence, the mobile telecommunications rates have been declining sharply. Nevertheless, the frequency usage fee to be paid by operators does not subsequently decline. Instead, the frequency usage fee increases in line with the addition of BTS built by the operators, so that it even more burdens the financial performance and distorts the operators' motion to expand services. On the other hand, operators must continue to expand the coverage area by building new base stations to be able to compete.

In the end this paradoxical condition brings problems for new operators. Unlike the incumbents that have declining fixed costs (Jehiel, *et al.*, 2003: 286) due to their already having facilities, including existing base stations, new operators have to deal with continually growing fixed costs as the consequence of their necessity to expand their coverage in order to compete with the incumbents.

This policy has impacts on the complex and expensive frequency management system. The existence of control systems procurement towards the use of frequency channels in each of base stations as required by the Directorate General of Post and Telecommunications as the spectrum manager/regulator shows that the frequency usage fee calculated based on ISR on each channel in the BTS results in a complex and high cost frequency management system. This policy has an impact on operators regarding that they have to adjust their spectrum administrative system for the sake of matching the amount of frequency usage fee in

accordance with the spectrum regulator version. Moreover, this policy is believed to easily lead to calculation disputes.

Besides technical implications, this policy even hampers operators to build networks swiftly and thoroughly reaching all parts of Indonesia. Moreover, all operators must pay diverse kinds and amount of regulatory charges in which this often leads to double taxation both vertically and horizontally. Frequency usage fee is one of levies made by the government (regulatory charges). There are still some kinds of other government levies imposed on telecom operators, both by central and local governments. These levies, to mention same, are:

1. Levies in the form of tax, including income tax (PPh) Article 22 on imports of telecommunications equipment, Value Added Tax (VAT) and Income Tax (Tax Agency),
2. Non-tax levies (Non-Tax State Revenue), for instance Frequency usage fee and Frequency Telecommunications Service Providers fee.

In addition to the above levies, there are fees charged by local governments, such as fee for the establishment of towers (BTS) and other licensing fees. These various regulatory charges particularly cost of taxation eventually increase the operating costs as a whole. As the consequence, high cost can distort the development of the telecommunication industry and impede more affordable telecommunication services more.

Based on these backgrounds, a study is required to (1) map the regulatory charges for the telecommunication industry in Indonesia and compare with those of other countries, (2) analyze the levy of non-tax state revenue using the essence of earmarking conception, tax characterization, and cost of taxation, and (3) analyze the urgency of adjustment policy on frequency usage fee in terms of the conception of state finance and supply-side policy.

## METHOD

This study applied constructivism paradigm. Ontologically − related to an assumption on the object or reality under study − constructivism paradigm sees reality as a social construction in which truth is relative (Relativism) meaning that it is valid in accordance with specific context considered relevant by people. This research was conducted to find a truth about a phenomenon of non-tax revenue in terms of frequency usage fee in Indonesia.

Epistemologically − related to assumption on the relationship between the researcher and the research in the process of acquiring knowledge about the objects under study − in constructivism paradigm, understanding reality or a research finding is an interaction product between the researcher and the object studied. This study intends to reflect a social reality in accordance with the reception of the subjects related to the reality itself, with still adhering to the rules of goodness criteria of a research. In constructivism paradigm, these criteria include trust-worthiness, which consists of credibility, transferability and conformability, and authenticity, which consists of ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity. In other words, the quality criteria of this research is determined by the extent to which the research findings are an authentic reflection of the reality lived by social actors, in this case the actors in the system of telecommunication industry, both employers and government.

Axiologically (related to the positions of value judgments, ethics and moral choices in a research), in this study the researcher is a facilitator, where values, ethics and moral choices are an integral part of the research. The objective of this research is to dialectically reconstruct social reality between the researcher and the study. Thus, in this study, the researcher serves also as a passionate participant, namely a facilitator to bridge the

diversity of social actors. The researcher endeavours to reconstruct the reality of frequency usage fee in a balance discussion covering up both the telecommunication industry agents, especially telecommunication operators, and the government.

Finally, from methodology dimension, containing assumptions on how to gain knowledge about a research object, reality construction is formed in a natural setting, a hermeneutic, and compared dialectically. Frequency is not analyzed from the formality of its name as non-tax state revenue, but more than that, it is interpreted in accordance with the essence of earmarking conception, tax characterization, and cost of taxation.

Basically, this research applied mixed approach. This combination is intended to answer research questions that cannot thoroughly be answered by either qualitative or quantitative research. A combination of qualitative and quantitative researches is possible as long as both are based on the same paradigm. In other words, as long as the research paradigm is the same, a combined approach can be applied. In connection with mixed approach, Neuman (2003:139) states that "Qualitative and quantitative researches differ in many ways, but they complement each other as well." Of Neuman opinion above, it can be seen that even though to some extent these two approaches are different, but in fact they can be complementary to each other.

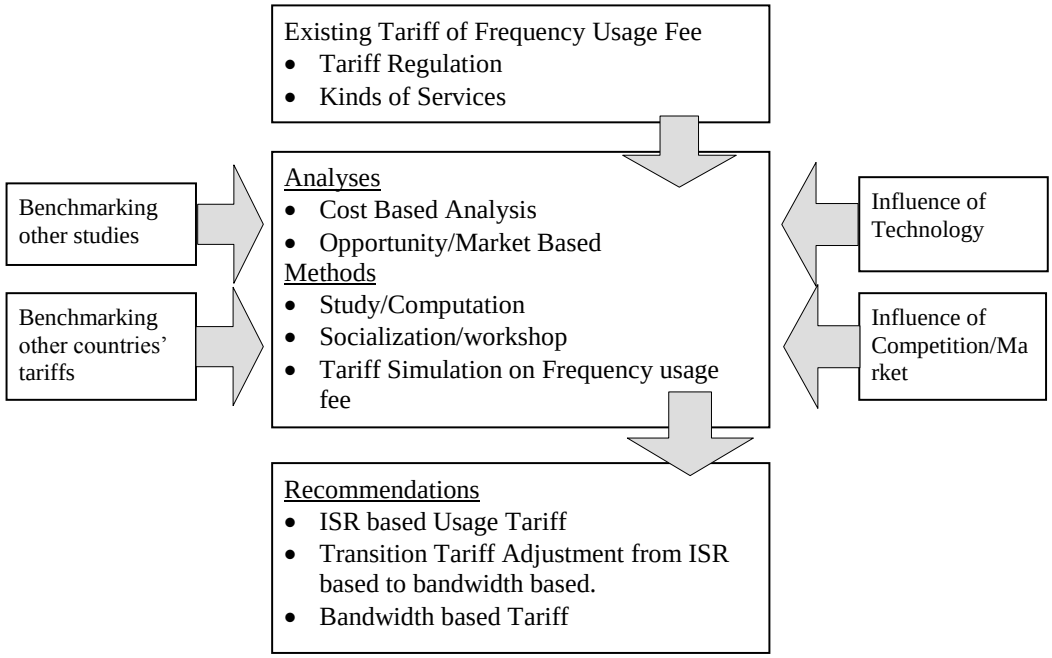
Prior to collecting qualitative and quantitative data, a literature study is performed. A literature study a data collecting method conducted to give theoretical and conceptual bases that are important and relevant in either proposing hypotheses or breaking down the analyses. Qualitative data gathered within this study are observation, interview, and documentation study.

In data collection and fieldwork strategy, the researcher used personal experience and engagement (Patton, 2003: 40). The intention is to give a better meaning and understanding considering that the field of study is very multidisciplinary that can drive an inappropriate interpretation when there is a gap between the researcher and the object studied.

To analyze data, this study applies holistic perspective (Patton, 2003: 41). Here are all phenomena taken as a complex system rather than a sum of the fragmented parts, meaning that this holistic perspective focuses on the interdependence and dynamics of those parts. This perspective sees that variables are not fragmented and linear things, but they affect each other. Dynamic system with using Powerism Program is used to analyze the implication of frequency usage fee levy. It needs to be mentioned here that the adjustment number of frequency usage fee was calculated by PT LAPI ITB team (Figure 1). The simulation was conducted by way of benchmarking ISR frequency usage fee (cellular) to band frequency usage fee (UMTS) as a reference. It was performed because band frequency usage fee that has been set in the Minister Regulation of Telecommunication and Information No. 7, year 2006 was an auction result so as to reflect operators' ability to fulfil obligation paying frequency usage fee to the state.

In general, adjustment simulation on Bandwidth Index and Power Index was conducted to take data samples from 3 big operators namely Telkomsel, Indosat, and Excelcomindo. The calculation stages are as follows:

1. Calculating frequency usage fee on the basis of bands (for UMTS) in the past 10 years with reference to the provisions stipulated in the Minister Regulation of Telecommunication and Information No. 7, year 2006. In this calculation, the bandwidth UMTS (block 2x5 MHz) is scaled on the bandwidth occupied by each service provider having cellular systems (GSM).




*Source:* Author's own calculation (2009)

**Figure 1.** Framework Ideas on frequency usage fee for mobile cellular network and fixed wireless access.

2. Calculating frequency usage fee on the basis of ISR (Radio Station License) using provision currently valid, namely Minister Regulation No. 19, year 2005.
3. Using the difference, obtained from the calculation result of the two previous methods, as the parameter for adjusting the new values of Bandwidth Index and Power Index.

The Radio Frequency usage fee based on band is applied on cellular operators running on 1920 − 1980 MHz / 2110 − 2170 MHz for UMTS service (3G). The fee to be paid for using radio frequency band is based on the occupied bandwidth, in which the amount of rupiah per MHz is resolved by auction held on February 2006. The components of band fee applied on 5 UMTS providers are (1) Up Front Fee and (2) Annual Fee.

For the providers set through an auction mechanism, the up front fee is 2 x the last bid of each auction winner. The up front fee of each of the 3 providers used in this simulation is presented as follows:

1. Telkomsel: Rp. 218 Billion × 2 units of auction result = Rp. 436 Billion
2. Excelcomindo: Rp. 188 Billion X 2 units of auction result = Rp. 376 Billion
3. Indosat: Rp. 160 Billion × 2 units of auction result = Rp. 320 Billion

The annual radio frequency band fee is as much as the lowest bid, and the payment scheme is for a period of 10 (ten) years. In accordance with the Minister Regulation, the annual amount to be paid is as shown in table 1. The Multiplier Index is the one used to adjust the annual auction price by the auction winner based on the above provisions.

When calculating frequency usage fee based on the band, bandwidth owned by UMTS service providers is first multiplied

**Table 1.** Annual fee to be paid by providers based on Minister Regulation

| Annual Payment | Up-front Free Payment | BI Rate (%) | Multiplier Index | Permit Rates of Frequency Usage | Total Payment |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| Year 1 | 2 × HP | | | 20% × HL | 2 × HP + 20% × HL |
| Year 2 | 0 × HP | R1 | I1=(1+R1) | 40% × I1 × HL | 40% × I1 × HL |
| Year 3 | 0 × HP | R2 | I2=I1(1+R2) | 60% × I2 × HL | 60% × I2 × HL |
| Year 4 | 0 × HP | R3 | I3=I2(1+R3) | 100% × I3 × HL | 130% × I3 × HL |
| Year 5 | 0 × HP | R4 | I4=I3(1+R4) | 130% × I4 × HL | 130% × I4 × HL |
| Year 6 | 0 × HP | R5 | I5=I4(1+R5) | 130% × I5 × HL | 130% × I5 × HL |
| Year 7 | 0 × HP | R6 | I6=I5(1+R6) | 130% × I6 × HL | 130% × I6 × HL |
| Year 8 | 0 × HP | R7 | I7=I6(1+R7) | 130% × I7 × HL | 130% × I7 × HL |
| Year 9 | 0 × HP | R8 | I8=I7(1+R8) | 130% × I8 × HL | 130% × I8 × HL |
| Year10 | 0 × HP | R9 | I9=I8(1+R9) | 130% × I9 × HL | 130% × I9 × HL |

*Source:* Author's (2009).

Notes:
HP = Bid price of auction winner per block 2x5 MHz;
HL = Auction result per block 2x5 MHz;
Ri = BI Rate (simple average), issued by BI a year in prior

with a multiplier factor (adjustment bandwidth) so that the bandwidth is equal to that owned by the operator running cellular (GSM). As an example, Telkomsel obtains a license to run UMTS with 5 MHz bandwidth, and running GSM needs 30 MHz. Hence, the band fee for Telkomsel is calculated by adjustment bandwidth 6, gained from 30 divided by 5 MHz. This is also applied to both Indosat and Exelcomindo, thus from the data of frequency license belonging to each provider of both UMTS and GSM, the adjustment bandwidth is as follows:

Telkomsel : 6 (30 MHz divided by 5 MHz)
Indosat : 6 (30 MHz divided by 5 MHz)
Excelcomindo: 3 (15 MHz divided by 5 MHz)

The calculation basis for frequency usage fee based on the current ISR refers to provisions set forth in Regulation (PP) No. 28, year 2000. According to the provisions, radio frequency usage fee is calculated in rupiah per channel per BTS per year with such a formula:

Radio Frequency usage fee (Rupiah) =

$$\frac{(Ib \times HDLP \times b) + (Ip \times HDDP \times p)}{2}$$

HDDP : Transmission Basic Price
HDLP : Bandwidth Basic Price
p : Transmission output power of EIRP antenna (in dBmWatt)
b : bandwidth occupied in kHz
Ib : cost index of bandwidth occupied
Ip : cost index of transmission power index

HDDP and HDLP are set based on frequency band grouping and transmitter zone in Regulation (PP) No.14, year 2000. The value of both Ib and Ip are set in Minister Regulation No. 19 year 2005.

The simulation using dynamic system was done by applying frequency usage fee adjustment number from PT LAPI ITB team. In fact, when referring to a thorough conception of Supply-side Tax Policy, the policy implication of frequency usage fee adjustment might be

bigger and have wider trickle down effect considering that the cost of taxation consists of both tangible and intangible costs. Intangible costs such as time cost and psychological cost can in fact be quantified as has been conducted in some researches on compliance cost/cost of taxation in some countries like England, Australia, India, New Zealand, Malaysia and some other countries. In this study, intangible costs were not calculated due to limited time and data. Therefore, the "input" data of powerism simulation used were numbers resulted by PT LAPI ITB team. Those numbers were then converted into phone connection unit possibly added or produced by telecommunication providers if the distance of frequency usage fee was fully used to add phone connection unit.

## ANALYSIS

### Regulatory Charges on Telecommunication Industry in Indonesia and the Comparison with some Other Countries

Regulatory charges related to telecommunication service industry vary from one country to another. Table 4 shows that, compared with other countries such as Pakistan, India, China and Sri Lanka, spectrum charge in Indonesia is not categorized too high, only 1% compared to that in India which reaches 2 - 5%, but China has lower tariff of as much as 0.5. However, telecommunication service providers in Indonesia still have to pay USO (Universal Service Obligation) charges of 0.75%.

In India, USO levy is included in the license fee of as much as 2 -5%. This quantity once triggered objections from various parties having requested that government should conduct a review on the regulatory charges (AUSPI, 2006). In China, the USO is not imposed on telecommunication service providers although actually the tariff of spectrum charges is relatively the lowest compared to the tariff of most other countries. Unlike India and China, telecommunication service providers in Sri Lanka are no longer burdened with USO obligations. They are only charged for spectrum charges by 1.1% (AUSPI, 2006). Although the spectrum charges and license fees are not as much as those in India, there are some other relatively big costs associated with implementing telecommunication service, such as licensing costs to establish BTS and compensation cost for the community living in the area around the established base stations.

Thoroughly, regulatory charges applied by the Government of Indonesia upon telecommunication industry are relatively various in either kinds, tariffs, or implementation bases. Those regulatory charges consist of (1) tax, (2) non-tax, and (3) Charge fees levied by two different taxing authorities, namely Central Government and Local Government. Hence, Indonesia has relatively more regulatory charges than do other countries mentioned within this study. The regulatory charges can be completely seen in table 2.

### Regulatory Charges in Indonesia viewed from Cost of Taxation Conception, Taxation characterization, and Earmarking

*Review on Cost of Taxation conception*

Currently the government of Indonesia has six types of regulatory charges considered as non-tax state revenue (see table 2). Those six charges are applied based on different tariffs and bases. Seen from the perspective of Supply-side Tax Policy, these charges heavily burden the actors of telecommunication industry of dealing with high cost of taxation. As the result, there is a limited space to increase productivity by both expansion and intensification (network improvement, etc).

The essence or basic philosophy of Supply-side tax policy concept is actually almost the same as that of neoclassical economics, including the belief that tax affects economic behaviours, and the effect of tax substitution is very important for the efficiency of resource allocation. According to

**Table 2.** Percentage of Non-Tax State Revenue Fund Use the Decree of Minister of Finance, Republic of Indonesia No. 174/KMK.02/2007

| | |
|---|---|
| 1. Radio Frequency Charge | as high as 21. 64% (twenty one point sixty four percent). |
| 2. Telecommunication Operation Fee | as high as 12.31% (twelve point thirty one percent) |
| 3. Certification and Test Fee on Telecommunication devices | as high as 42.55% (forty two point fifty five percent) |

*Source:* Minister of Finance, Republic of Indonesia (2007).

Gandhi, as quoted by Rosdiana (2008), there is something new in this policy; that is the belief of some fiscal economists that the reduction of tax burden will bring a significant impact on productivity and growth rate. In a broader and latest concept, tax burdens are denoted in terms of the so-called cost of taxations.

The terminology of cost of taxation is used to refer all the burdens borne by taxpayers in exercising out their rights and obligations on tax. Consequently, cost of taxation is not only a material/tangible burden, but it also is an immaterial/ intangible burden. Chattopdhyay and Das-Gupta quoted the opinion of Slemrod & Yitzhaki (2002) stating that there are five indicators of cost of taxation i.e. compliance costs, administrative costs, deadweight efficiency loss from taxation, the excess burden of tax evasion, and avoidance costs.

Cost structures that become the burdens of telecommunication service providers have various kinds, for instances operation and maintenance cost, radio frequency usage fee, universal service and organization right expenses, phone cards bills, SIMM and RUIM, electricity, water and gas payments, motorized vehicles and supporting facilities, insurance, customer circuits, official travel expenses, Call Centre and others. Frequency usage fee is one of regulatory charges having bigger percentage than other charges. This can be seen from percentage ratio between Operation and Maintenance (O&M) cost and frequency usage fee. In 2002, the percentage of frequency usage fee towards O&M costs was only fourteen percent (14%). After 2002, the percentage increased to the range of twenty-two (22%) up to twenty-nine percent (29%).

Fines to be paid by providers due to government delay in issuing SPP also add cost of taxation. In fact, the delay itself is often caused by internal factors within the government due to some technical matters covering up, among others, running out of paper to print out SPP, or it is tucked in administration system.

In addition to frequency costs (including fines), providers have to pay some more other costs, both tangible and intangible, in order to fulfil the frequency usage fee obligations. This cost is called compliance costs. Compliance costs are often the focus or the main theme in research relating to the cost of taxation. This is because the three elements of compliance costs recommended by Sandford (Das Gupta, 2002), i.e. the fiscal cost (direct money cost), time cost and physic/psychological cost, are the costs in the context of fulfilling the obligations of frequency charges most directly felt by taxpayers.

Based on the results of in-depth interviews, observation and documentation study, compliance costs paid by telecommunication providers include fiscal cost covering up salary of staffs to handle frequency usage fee matters such as, to say some, doing reconciliation/calculation matching on frequency usage fee between the operator version and the version of the government or spectrum management. These costs include cost to pay the experts or consultants to handle the matters in fulfilling the obligations frequency charges,

and paper, printer ink, and other expenses to meet the obligations of frequency charges. Nevertheless, these do not include administrative cost, the cost of performing both administration and maintenance. Administrative development covers up the development of administration/ network systems to meet the standards and procedures in fulfilling the obligations of frequency charges.

Furthermore, regarding license for setting up a tower, it takes longer time than what the official rules say. Even providers often feel uncertainty in obtaining license for the establishment of the tower. This of course often complicates communication service providers; furthermore, there are several types of licenses to be owned by providers to build a tower. This is one example of time cost.

The uncertainty of time and costs in managing licensing raises physical and psychological costs to telecommunications service providers. The uncertainty associated with the issuance of SPP related to disbursing non-tax revenues also causes another problem. Another cause of physical and psychological costs is the complexity of frequency charges calculation potentially causing disputes between the providers and the examiner. This dispute may lead to further uncertainty for telecommunication service providers and make them worry about an error in calculation which can lead providers to having inspection processes or even imprisonment.

*Review on Taxation characterization and Earmarking*

Viewed from the conception of tax characterization, essentially non-tax revenue meets the criteria as a tax. Conceptually, non-tax revenue meets tax criteria because (1) it is fee levied by the government (state representative), (2) it is levied under the laws, (3) it can be imposed, and (4) it is used to carry out government functions. Based on these criteria, non-tax revenue in the form of frequency charges is basically similar to taxes, so the term non-tax revenue for frequency charges must be reviewed. Other types of non-tax revenues having similar characteristics to tax, such as Telecommunication Services fee as much as 1% of turnover, lead to double taxation on the management of telecommunication services. It is called double taxation due to the fact that at the same time, operators are also subjects to Corporate Income Tax (PPh Badan). Thus, this phenomenon is included in the definition of taxation applied widely. As stated by Gunadi (1999), the definition of double taxation in a broad sense is any form of imposition of taxes and other levies for more than once that can double (double taxation) or more (multiple taxation) towards a fiscal fact (subject and/or object to tax).

If government is consistent with the term non-tax revenue, so this revenue should be levied by using conception of charges, which is included in the constellation of earmarking. Earmarking is, according to Buchanan as quoted by Marsiliani and Renstromoleh (2000:C123), dedicating specific revenues to the financing of specific public services. Seen from its name, frequency usage fee has specific characteristic, therefore, this should be used to finance specific expenses related to public services concerning frequency management and use. Implementation of earmarking on frequency charges is relevant and in line with the recommendation of International Telecommunication Union (ITU). ITU is an international organization, one of special agencies established by United Nations, to standardize and regulate international radio and telecommunication.

ITU states that all spectrum users should pay and the fees collected should be used to benefit frequency users. Besides, ITU says that the frequency usage fees should be levied on the basis of recovering spectrum management expenses, not for optimizing government fiscal revenues.

When frequency charges are levied based on the concept of earmarking, so:

1. Levy is carried out due to services given by government, for instance in the forms of surveillance, maintenance, regulation, and others. By taking frequency charges government has obligations to serve providers in concern with spectrum use,
2. The amount of charges is determined by considering minimum cost recovery,
3. The use of charges is based on the concept of earmarking. The agency having authority to levy frequency charges is authorized to manage and employ the money in accordance with mission, vision, and functions of the agency. Thus, restrictions on the authority of managing frequency charges as today occurring will not happen anymore. Based on the decree of the minister of finance no. 174/kmk.02/2007 (table 3) there is only maximally twenty-one point sixty-four percent (21.64%) of non-tax revenues fund that can be used. This kind of restriction will of course distort surveillance on the use of frequency, maintenance, and optimum service to telecommunication service providers. In general, this restriction may also distort optimizing services and providing frequency for public.

Theoretically and empirically, implementation of earmarking concept on frequency charges levy brings forward some following implications:

1. Department of Communication and Information (Depkominfo), in this case is Post and Telecommunication as a government agency which manages the frequency has flexibility to enhance human resource development,
2. Spectrum management can be done better. Spectrum Management Authority to further upgrade service facilities and infrastructure as well as supervision. Thus, the service quality goes better and additional cost of taxation caused by technical factors can be suppressed, including minimizing penalties that should actually not happen, for example delays in SPP issuance. On the other side, state revenues from frequency charges can be more optimal in line with the provision of better surveillance instruments.
3. Improving the quality and quantity of human resources (point 1) and the availability of more proper facilities and infrastructure (point 2) will subsequently encourage better public services.
4. Instead of applying new charges, such as USO, which will increase the cost of taxation, thereby increasing the causes of high cost economy, frequency charges can be used to finance telecommunication development in rural or remote areas, as well as other programs included in the scheme of USO policy objectives. Not only for simplification, implementing the concept of earmarking on frequency usage fee is also meant to be an instrument of supply-side tax policy. Regulatory charges simplification, leading to the decrease in cost of taxation, will provide flexibility for telecommunication operators to increase productivity, considering that they then have more available cash flow for investment/development.
5. This addition fund can also be used to organize any programs designed to achieve targets in WSIS Plan of Action, Declaration of Tokyo in 2000 and APEC Conference in 2001. Thus, the implementation of earmarking on frequency charges is in accordance with those supporting the ideas of earmarking such as Nobel winner on economy in 1986, James McGill Buchanan, Jr., having an idea that earmarking can increase prosperity (Marsiliani and Renstromoleh, 2000:C123).

**Table 3.** Levies on Telecommunication Industry in Indonesia

| KINDS OF LEVY | TARIFF | CHARGE /TAX BASE |
|---|---|---|
| A. CENTRAL TAXES | | |
| 1. Corporate Income Tax | 1. Tariff of Income Tax Article 17 (Agency) | 1. Providers' Net Profit |
| 2. Income Tax Article 22 | 2. 2.5% or 7.5% | 2. Import Value |
| 3. VAT | 3. 10% | 3. Tax Base is the Sales Price or Consideration or Import Value or Export Value, or such other value as may be determined by the Minister of Finance Decree, to be used as the basis for calculating taxpayable.<br>Sales Price is the value in money, including all costs charged or which should be charged by a seller, on supply of Taxable Goods, excluding tax withheld in accordance with this law and any rebate which is written in the Tax Invoice.<br>Consideration is the value in money, including all costs charged or which should be charged by a firm rendering a service, arising from the rendering of a Taxable Service, excluding tax withheld in accordance with this law and any rebate which is written in the Tax Invoice.<br>Import value is the value in money, which forms the basis for calculating import duty plus other levies incurred under the Customs Regulations on the import of Taxable Goods, excluding tax withheld in accordance with this law. |
| 4. Custom Fee | 4. Depend on the kinds of goods | 4. Custom Value |
| B. Non-Tax State Revenue | | |
| 1. Telecom Service Operation Fee | 1. 1 % | 1. Gross Revenue |
| 2. Frequency License Fee | 2. Depends on Frequency | 2. HDPP |
| 3. Frequency usage fee | 3. BHP = (lbxHDLPx b) + (lpxHDDPxp)/2 | 3. Per certificate |
| 4. Certification Fee on Telecom devices and tools | 4. Depends on devices and tools types | 4. Per type |
| 5. Test Fee on Telecom devices and tools | 5. Depends on devices and tools types | 5. Per certificate |
| 6. USO | 6. 0,75 % | 6. Gross Revenue – Interconnection Cost |
| C. Local Charges (DKI) | | |
| 1. IMB: Site Plan | | |
| 2. Telecom Service License: | 1. about Rp.2.000.000,- | |
| Location Permit | 2. about Rp. 2.500.000,- | Per unit (tower) |
| Devices | | Per license |

*Source:* Minister of Finance, Republic of Indonesia (2007).

**Frequency usage fee in Indonesia viewed from the Concept of Supply Side Tax Policy**

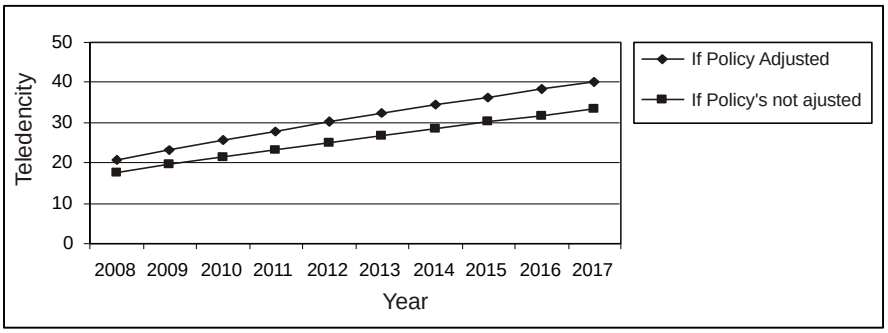
Basically, without any support from government the private sectors find difficult to apply efficiency for their businesses. That is why up to this present time, the development of telecommunication industry in Indonesia is not yet optimal. One of the reasons is the presence of regulatory charges performed by both central and local governments upon this industry. These charges in turn bring forward high cost economy affecting the price of telecommunication service. High price impedes affordable telecommunication service for common public. When regulatory charges rise, basic selling price also rises, and as the consequence, the final selling price rises. Therefore, government is required to help create conducive business climate by, among others, overcoming and reducing factor causing high cost economy.

To maintain the balance among all those various interests, ITU as quoted by Cheng Yu et al. (2003, 681) recommends some principles in developing frequency usage fee system:

1. All spectrum users should pay and the fees collected should be used to benefit frequency users.
2. Fee calculation should be fair, e.g. the charges for identical usage of spectrum resources should be the same.
3. Fee should be proportional to the bandwidth of spectrum used.
4. Fee should reflect the spectrum value to public, e.g., frequency used for public services should be charged less because of its greater social value.
5. Spectrum management expenses should not become a financial burden to the government.
6. Inputs from the frequency user community should be surveyed when establishing or revising the frequency usage fee structure.
7. The frequency usage fees should not become an obstruction to the public in accessing radio frequencies nor for service providers to deploy wireless services.
8. The pricing structure should be clear, concise, and comprehensible without unnecessarily prolonging the frequency licensing process.
9. The price should reflect the scarcity of frequency availability as well as the level of demand for frequencies in different spectrum bands. Nevertheless, a frequency shortage should not be caused by insufficient allocation or poor management of spectrum by regulators.
10. The frequency usage fees should be levied on the basis of recovering spectrum management expenses, not for optimizing government fiscal incomes.
11. Legal bases of charging frequency usage fees should exist, and a mission statement should be established to serve as the guideline for implementing the charging procedures.

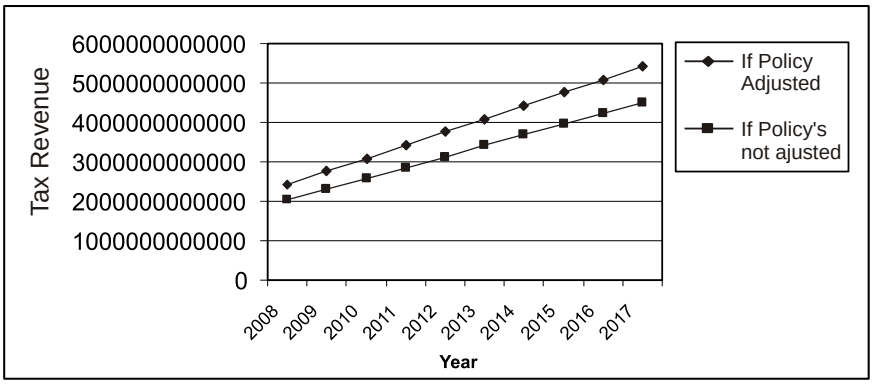
From the recommendations, there are two important things to pay attention to. First, the frequency usage fees should not become an obstruction for public in accessing radio frequencies nor for service providers to deploy wireless services. Government then should be vigilant and comprehensive in determining frequency usage fee. Second, the frequency usage fees should be levied on the basis of recovering spectrum management expenses, not for optimizing government fiscal revenues.

By considering both the two recommendations and cost structure along with regulatory charges applied upon telecommunication industry, the government should readjust the frequency usage fee to drive up the growth of telecommunication industry in Indonesia.




*Source:* Author's own calculation (2009).

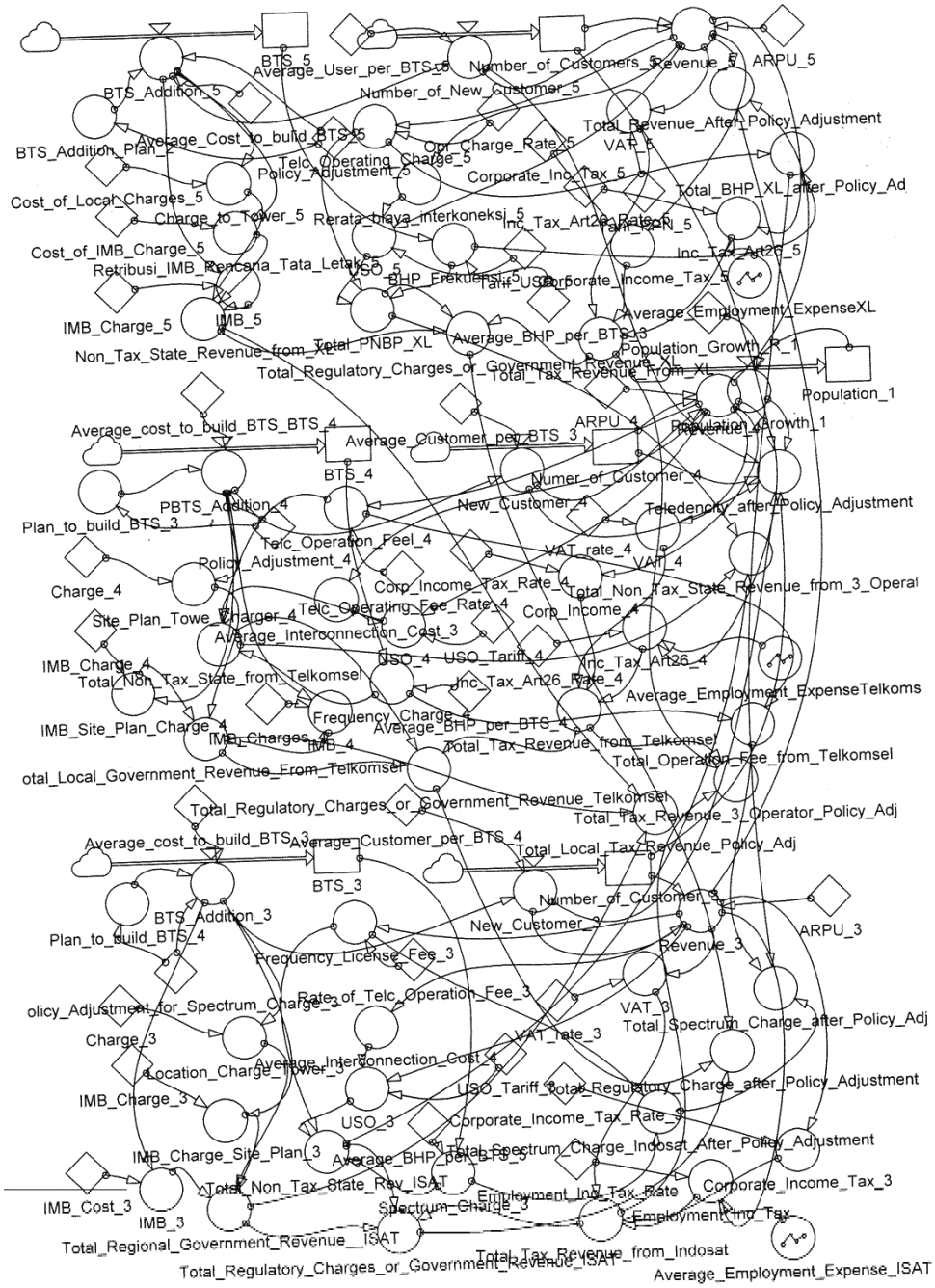
**Graphic 1:** Comparison Total Teledencity Before and After Adjustment Policy on Frequency usage fee




*Source:* Author's own calculation (2009).

**Graphic 2:** Comparison Tax Revenues of 3 Providers Before and After Adjustment Policy on Frequency usage fee

A total adjustment of frequency usage fee will not subsequently decrease government revenue, instead, government revenue will potentially rise. It is seen from the result of the simulation performed by using dynamic system (see Figure 2). It shows that, in accordance with the concept of supply-side tax policy, the government policy to boost the increasing supply (by way of reducing government regulatory such as taxes and charges) created a positive domino effect that will ultimately increase government revenue. The simulation results show that the total state tax revenue from VAT, Corporate Income Tax, and Income Tax Article 21 experienced significant improvement. This improvement is caused by a potential increase of new customers as a result of frequency usage fee adjustment. This adjustment is influential towards increasing teledencity due to increasing potency of new customers.



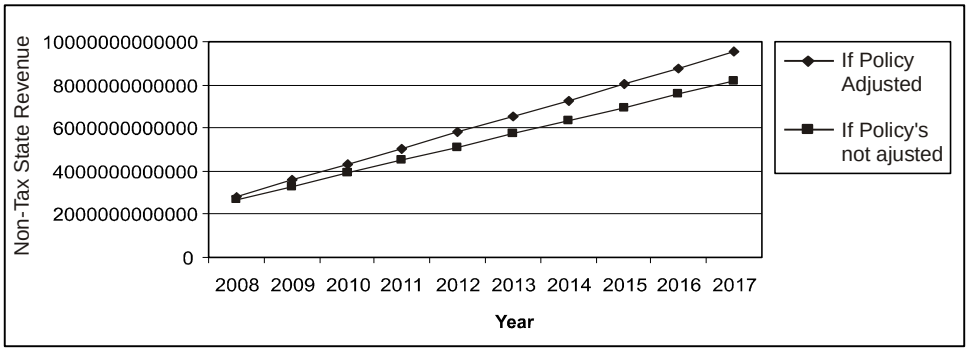

*Source:* Author's own calculation (2009).

**Figure 2.** Simulation Model on the Adjustment Policy of Frequency Usage Fee in Stock Flow Diagram

The increasing new customers will have an effect on the increasing income of the providers (Graphic 2). With the increasing income of the providers, the potency of the central government obtaining taxes in the forms of Income Tax (net income basis), Income Tax Article 21 (employees net income basis), and Value Added Tax (sales basis) will also increase. Finally, the policy will enhance the potency of government obtaining Non-Tax State Revenue following the increasing potency of the providers gaining new customers. This policy will also simultaneously boost the potency of USO income (Graphic 3).

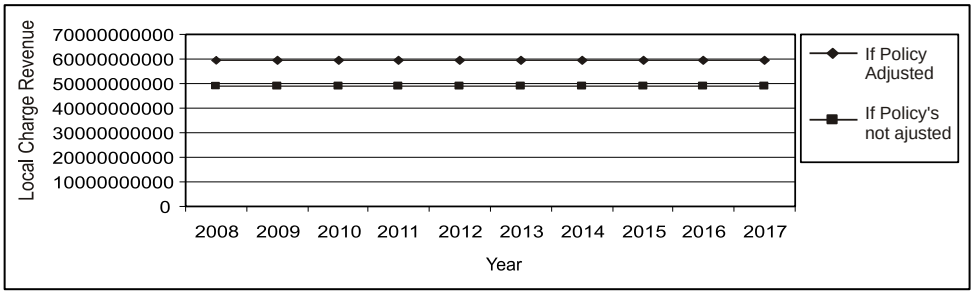
For local government, this adjustment policy will also have an effect on increasing local income in the form of Local Charge Tax. These income potencies derive from Building Constructing License (IMB) fee, site plan fee, and IMB cost (Graphic 4).

The dynamic system simulation conducted for this study is in line with some other researches' findings analyzing the influence of cellular telecommunication industry towards economy growth. A research conducted by Mc Kinsey shows that the implication of telecommunication industry development reaches eight percent (8%) of Gross Domestic Product (GDP). Mc Kinsey's research (Bahl, Kushe, *et al*: 2006) even shows the domino effect of telecommunication industry development, because this did not only study direct impact on the providers, but also indirect impact on wireless system business such as hardware and




*Source:* Author's own calculation (2009).

**Graphic 3:** Estimated Comparison on Non-Tax State Revenue Before and After Adjustment Policy on Frequency usage fee




*Source:* Author's own calculation (2009).

**Graphic 4:** Estimated Comparison on Local Charge Revenue Before and After Adjustment Policy on Frequency usage fee

software traders and others (Graphics 3 and 4). Besides, it also has implication on employment.

## CONCLUSIONS

Based on the previous analysis, the conclusions are as follows:

First, regulatory charges on telecommunication industry in Indonesia are various and can result in double taxations and even, in a broad sense, multiple taxations due to more than one charge and levy on fiscal facts. Second, the diversity of regulatory charges for the telecommunications industry in Indonesia caused relatively high cost of taxation impeding the optimization of telecommunication industry growth. Moreover, based on the concept of taxation terminology, frequency usage fee goes in harmony with the concept of earmarking. Theoretically and empirically, the implementation of frequency usage fee adjustment will even more empower the regulators both in their functions as managers and supervisors of spectrum/frequency use, and in giving public service including providing more proportional telecommunication access to entire area of Indonesia. The implementation of earmarking concept will also optimize operators' performances for it can eliminate cost of taxation.

Third, frequency usage fee adjustment policy needs implementing in order that frequency usage fee levy should not obstruct people to access radio frequency nor telecommunication providers to give services to public. Analysis using dynamic system through Supply-side Tax Policy modelling shows that as a whole the state revenue is not disturbed. Instead, eliminating cost of taxation that may give flexibility to telecommunication providers to improve their productivity has a potency to increase state revenues from taxes (Income Tax Agency, VAT, Income Tax Article 21 and Income Tax Article 23) and other types of related non-tax revenues.

## RECOMMENDATIONS

Based on the previous conclusions, some recommendations are proposed as follows:

First, regulatory charges on telecommunication industry need simplifying to avoid high cost of taxation. Simplification can be conducted by first mapping similar kinds of regulatory charges. Simplification is needed not only to reduce cost of taxation, but also to make providers easily calculate cost structure of which business planning is performed more easily.

Second, it is considered better for the government to levy frequency usage fee in accordance with the essence of earmarking by which spectrum management can be better performed. Bigger allocation of fund should be used to improve human resources and appropriate equipment, and to reach teledencity target without burdening telecommunication industry with USO obligations.

Third, frequency usage fee adjustment policy can be one of government's efforts to have harmony among many interests covering up state revenues, telecommunication access opening acceleration, customers' satisfaction, and telecommunication industry growth. The adjustment can reduce cost of taxation so that service providers have more opportunities to expand their markets and penetrate into the entire regions. Therefore, teledencity may increase. If frequency usage fee adjustment policy is combined with other incentives, such as frequency addition and operational and tower licenses simplification, especially for providers expanding their networks to remote areas, the acceleration of telecommunication access can be more comprehensive and even.

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