



Hacettepe University Graduate School of Social Sciences

Department of Healthcare Management

Health Financing in Indonesia Prior to Universal Health Coverage Implementation: Value for Money Analysis


Elita Rachmie Dwi HANGGIRI

Master's Thesis

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HEALTH FINANCING IN INDONESIA PRIOR TO UNIVERSAL HEALTH
COVERAGE IMPLEMENTATION: VALUE FOR MONEY ANALYSIS

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ACCEPTANCE AND APPROVAL

The study titled "Health Financing in Indonesia Prior to Universal Health Coverage Implementation: Value for Money Analysis" which was written by Elita Rachmie Dwi Hanggiri is approved by our committee based on accomplishment of her thesis defense that was held on 03.04.2017.



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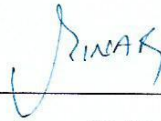
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03.04.2017



Elita Rachmie Dwi HANGGIRI

ETİK BEYAN

Bu çalışmadaki bütün bilgi ve belgeleri akademik kurallar çerçevesinde elde ettiğimi, görsel, işitsel ve yazılı tüm bilgi ve sonuçları bilimsel ahlak kurallarına uygun olarak sunduğumu, kullandığım verilerde herhangi bir tahrifat yapmadığımı, yararlandığım kaynaklara bilimsel normlara uygun olarak atıfta bulunduğumu, tezimin kaynak gösterilen durumlar dışında özgün olduğunu, Prof. Dr. Yusuf ÇELİK danışmanlığında tarafımdan üretildiğini ve Hacettepe Üniversitesi Sosyal Bilimleri Enstitüsü Tez yazım Yönergesine göre yazıldığımı beyan ederim.



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For my precious baby who patiently accompanied me during the work,

Muhammad Ergenç Assayyed

Ibun loves you



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ÖZET

HANGGIRI, ELITA RACHMIE DWI. *Evrensel Sağlık Kapsamı Uygulamasından önce Endonezya'da Sağlık Finansmanı: Value for Money Analizi*, Yüksek Lisans Tezi, Ankara, 2017.

Evrensel Sağlık Kapsamı (ESK), Endonezya dahil olmak üzere DSÖ üyesi ülkelerin nihai bir taahhüdü haline geldi. Bu çalışmanın amacı, Endonezya sağlık finansmanı sisteminin *value for money* etkinliğini daha iyi anlamamızı sağlamaktır. Bu çalışma ayrıca mevcut sağlık sisteminin temel bilgilendiricilerden ön değerlendirmesi yapılmasını sağlamaktadır. Value for Money analiz etmek için üç yöntem kullanılır: elde edilen sağlık sonuçlarına göre Endonezya sağlık harcamalarının genel tanımlayıcı verileri, veri zarflaması analizi (Data Envelopment Analysis) ve önemli bilgilendiricilerle yapılan görüşme. İlk iki yöntem, Endonezya'nın sonuçlarını, üç kategoriye ayrılmış karşılaştırmalı ülkelerle yani APEC üyeleri, düşük orta gelirli ülkeler ve orta HDI düzeyinde olan ülkeler olmak üzere karşılaştırmaktadır. Bu çalışmanın bulguları, Endonezya'nın son on yıl içinde çok az teknik etkinlik değişikliği ile düşük bir Value for Money sahip olduğunu gösteriyor. Endonezya, nispeten düşük sağlık harcamaları, özellikle kamu sağlık harcamaları ve cep payı yüksektir. Bu çalışmada kullanılan sağlık göstergelerinin tümünde zayıf puan aldı. Önemli muhbirler, mevcut sağlık sisteminin de verimsiz olduğuna inanmaktadır. Bu düşük kazanımların arkasındaki bazı rasyonel nedenler şunları da kapsayan kilit bilgilendiriciler tarafından ortaya koymuştur: 1) Azınlık yardımı 2) Koruyucu ve teşvik ediciden, iyileştirici sektörde daha yüksek vurgu 3) Coğrafi nedeni ve sağlık personelinin orantısız dağılımını içeren zayıf erişim; 4) Altyapı, hekim düzenlemesi ve sağlık personelinin eksik tedarikiyle ilgili kaynak yönetiminin zayıf olması; 5) Siyasal irade. Bununla birlikte, bu nedenleri araştırmaya yönelik derin araştırmalar teşvik edilmeye gerekmektedir.

Anahtar Sözcükler

Value for Money, Endonezya sağlık finansmanı, Evrensel sağlık kapsamı, Evrensel sağlık kapsamı, Verimlilik

ABSTRACT

HANGGIRI, ELITA RACHMIE DWI. *Health Financing in Indonesia Prior to Universal Health Coverage Implementation: Value for Money Analysis*, Master's Thesis, Ankara, 2017.

Universal Health Coverage (UHC) has become an ultimate commitment of WHO country members, including Indonesia. Good health financing system which comprises well-funding, reduction of out-of-pocket expenditure and efficient use of fund, is critical to move toward UHC. The aim of this study is to give greater understanding of value for money of Indonesian health financing system, that is, the efficiency of Indonesian spending on healthcare prior to the implementation of universal health coverage. This study also provides preliminary evaluation of current health system from key informants.

Three methods are used to analyse the value for money: general descriptive of Indonesian health expenditures relative to health outcomes achieved, data envelopment analysis, and key informants interview. The first two methods compare Indonesia's results with those of benchmark countries which are classified into three categories: APEC members, lower middle income countries, and countries with medium level of HDI.

The findings of this study suggest that Indonesia had low value for money with very small change of technical efficiency over the past decade. Indonesia has relatively low health expenditure, particularly public health expenditure, and high out of pocket share. It scored poorly on all of health indicators used in this study. Key informants believe that current health system is also inefficient. Some rationales behind these low attainments explicated by key informants including: 1) Underfunding 2) High accentuation on curative sector than preventive and promotive ones. 3) Poor access that comprises geographical reason and disproportionate distribution of health personnel; 4) Poor resources management involving infrastructure, physician regulation issue and undersupply of health personnel, and; 5) *Political will*. However, deeper research on exploring these reasons is encouraged.

Key Words

Value for Money, Indonesian health financing, universal health coverage, efficiency

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ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
Askes	<i>Asuransi Kesehatan</i> / Health Insurance
Askeskin	<i>Asuransi Kesehatan Rakyat Miskin</i> / Health Insurance for the Poor
BPDPK	<i>Badan Penyelenggara Dana Pemeliharaan Kesehatan</i> / Health Maintenance Agency
BPJS	<i>Badan Penyelenggara Jaminan Sosial</i> / Social Security Agency
BUMD	<i>Badan Usaha Milik Daerah</i> / Local-Government Owned Company)
CRS	Constant Return to Scale
CRSTE	Constant Return to Scale Technical Efficiency
DEA	Data Envelopment Analysis
DJSN	<i>Dewan Jaminan Sosial Nasional</i> / National Social Security Council
GDP	Gross Domestic Product
HDI	Human Development Index
HMO	Health Maintenance Organization
IMR	Infant Mortality Rate
INA-CBGs	Indonesia's Case Base Groups / Indonesian DRGs
JKN	<i>Jaminan Kesehatan Nasional</i> / National Health Insurance
Jamkesmas	<i>Jaminan Kesehatan Masyarakat</i> / Community Health Insurance
Jamsostek	<i>Jaminan Sosial Tenaga Kerja</i> / Workforce Social Security
JPKM	<i>Jaminan Pemeliharaan Kesehatan Masyarakat</i> / Community managed health care
JPS	<i>Jaring Pengaman Sosial</i> / Social Safety Net
KAJS	<i>Komite Aksi Jaminan Sosial</i> / Social Security Action Committee
LMIC	Lower Middle Income Countries
MMR	Maternal Mortality Ratio

MoH	Ministry of Health
OECD	Organisation for Economic Co-operation and Development
OoP	Out of Pocket
PBI	<i>Penerima Bantuan Iuran</i> / Contribution Benefecaries
PHB	<i>Perum Husada Bhakti</i> / Public Company <i>Husada Bhakti</i>
PPP	Purchasing Power Parity
PT	<i>Perusahaan Terbatas</i> / Limited Liability Company
Puskesmas	<i>Pusat Kesehatan Masyarakat</i> / Primary Health Centre
RIFASKES	<i>Riset Fasilitas Kesehatan</i> / Research for Health Facilities
SE	Scale Efficiency
SJSN	<i>Sistem Jaminan Sosial Nasional</i> / National Social Security System
Susenas	<i>Survey Sosial Ekonomi Nasional</i> / National Economy and Social Survey
TE	Technical Efficiency
TEC	Technical Efficiency Change
THE	Total Health Expenditure
UHC	Universal Health Coverage
UNDP	United Nations Development Programme
VRS	Variable Return to Scale
VRSTE	Variable Return to Scale Technical Efficiency
WHO	World Health Organization

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INTRODUCTION

After the end of World War II, several countries initiated to apply universal health coverage (MoH, 2014: 8). Universal health coverage (UHC) then was adopted by many countries, including developing countries, and being wider following the pursuit of the United Nations Millennium Development Goals' which some are related to universal health coverage's aims (WHO, 2013: 16) and the 58th WHA (World Health Assembly) on Sustainable Health Financing, Universal Coverage and Social Health Insurance (WHA, 2005: 139). Momentum of UHC has been rising, encourages countries from all income levels to get ready toward UHC (Kieny & Evans, 2003: 306). To achieve this global commitment, universal health coverage scheme had been on Indonesia's national development agenda since Act No. 40 Year 2004 pertaining to National Social Security System enacted. However, the reformation process took ten years until this program, which is called *JKN (Jaminan Kesehatan Nasional / National Health Insurance)*, officially commenced in January 1st, 2014.

Implementing universal health coverage, of course, will be followed by the increasing amount of national health expenditure. WHO reported that Indonesian total health expenditure in 2014 was 2.9% of GDP, 20% higher than the amount in 2004 (WHO, 2014). This number might grow even more since *JKN* is expected to be the biggest universal health insurance scheme in the world (Britnell, 2015: 47). Unfortunately it cannot be decided yet whether those spending is worth enough as *JKN* has just been running for three years. Nevertheless, the efficiency achieved throughout the reform stage can be used as a proxy since *JKN* hasn't been achieved. Allocating or using funds in an efficient way is critical for moving closer to universal health coverage. Besides, sufficient funding and reducing financial barriers are also needed to reach this agenda (WHO, 2016).

Reform means an improvement, especially in a person's behaviour or in the structure of something (Cambridge University Press, 2013: 1194). In line with the meaning, improvement on health in Indonesia were expected to be better throughout those ten years and it could be a sign whether Indonesia had been ready for implementing "the real" universal health coverage. If along the road of reformation it presented worse or the same

outcome, how could the payers be reassured that the bigger money they would spend on universal health coverage system would be treated wisely? This is the fundamental reason why value for money is analysed (Smith, 2009: 11). Further, the importance of assessing value for money of the health system prior to the implementation of universal health coverage is also explicated by Roxx: significant lacks of efficiency and equity, unless addressed, will aggravate cost burdens and hamper the effective implementation of universal health coverage (Rokx, 2009: 22).

This value for money analysis can be used as a review, since Indonesia still needs to find the right configuration of health financing until it fully covers the people with JKN as targeted in 2019. This also can be used as a comparison when the value for money analysis of Indonesian universal health coverage system (JKN) undertaken. By comparing the efficiency of a country before and during the implementation of UHC, we could see whether UHC improve the efficiency of country's health system, or in other words, how the effects of UHC on its value for money. Besides that, value for money studies pertain to Indonesian health financing system are very limited. Thus, this study attempts to fulfil those hollows and provides useful information to improve Indonesian health system.

How was Indonesia's Value for Money during its reform phase toward universal health coverage? This study attempts to answer this question in three stages. The first, by comparing Indonesia's health care expenditures relative to its health status indicators improvements with benchmark countries which are classified under these categories: (a) the APEC (Asia-Pacific Economic Cooperation) members; (b) Lower Middle Income Countries (according to World Bank), and; (c) the countries with similar HDI Level (according to UNDP). The second one, by analysing Indonesia's value for money compared to benchmark countries using DEA (Data Envelopment Analysis). And the third, by obtaining the views of key informants on health care sector in Indonesia which are collected using semi-structured interview. The value for money analysis will specifically focus on benchmarking the achievements in the last decade, when the reform toward universal health coverage was going on. Nevertheless, this study also provides a brief summaries obtained from key informants interview on current health system (JKN) as a preliminary evaluation.

CHAPTER 1: INDONESIA HEALTH PROFILE

1.1. DEMOGRAPHY

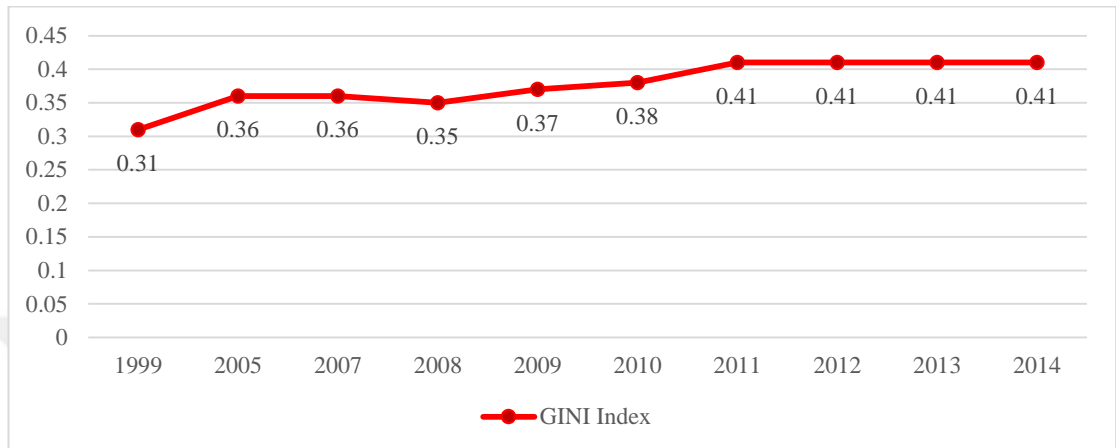
Geographically, Indonesia is situated between two continents; Asia and Australia, and surrounded by Pacific and Indian Ocean. It is the biggest archipelago country in the world as two third of its territory is water area with over thirteen thousands islands lie within (BIG, 2016). Having approximately 260 million people spread in 34 provinces has placed Indonesia on 4th world most populous countries after China, India, and The United States (US Census Bureau, 2016). Notwithstanding large number of islands, population distribution is very disproportionate with more than half of population (57%) concentrates in Java Island, escorting Java as first-ranked island in the world for people density category (MoH, 2015: 3).

Domination of Java in development, both in economic and politic side, had led to income distribution inequality. Government has been trying to carry some actions to deal with this uneven distribution including; transmigration, controlling population number through “*Keluarga Berencana*” (Family Planning) Program as well as enforcing more strict law for early-age marriage, developing industries in less-populated island to widen job opportunities, and applying decentralization policy that had been commenced since 1999 (MoH, 2015: 5). Income distribution inequality can be reflected by GINI index. Figure 1.1 shows the increasing trend of Indonesia’s GINI Index that means the gap between people in the amount of income is getting wider overtime (BPS, 2016).

Income received by households reflects the wealth level of society. However, BPS (Statistics Indonesia) prefers to use households’ expenditure for estimating the wealth of society as the data of expenditure is rated as more accurate than income data. Households’ expenditure captured how population allocates their needs. It is divided into two categories: food expenses and non-food expenses. Ernst Engle (1857), as cited by MoH in Indonesia Health Profile 2015, said that according to the law of economics, when there is no change on taste then the percentage of income spent on food will decrease as the income rising. Thus, the increase of income (wealth) could be reflected by diminishing amount of food expenditure (MoH, 2015: 12). Last data from BPS on Average Monthly Expenditure per Capita by Commodity Group (2014) showed that Indonesian household

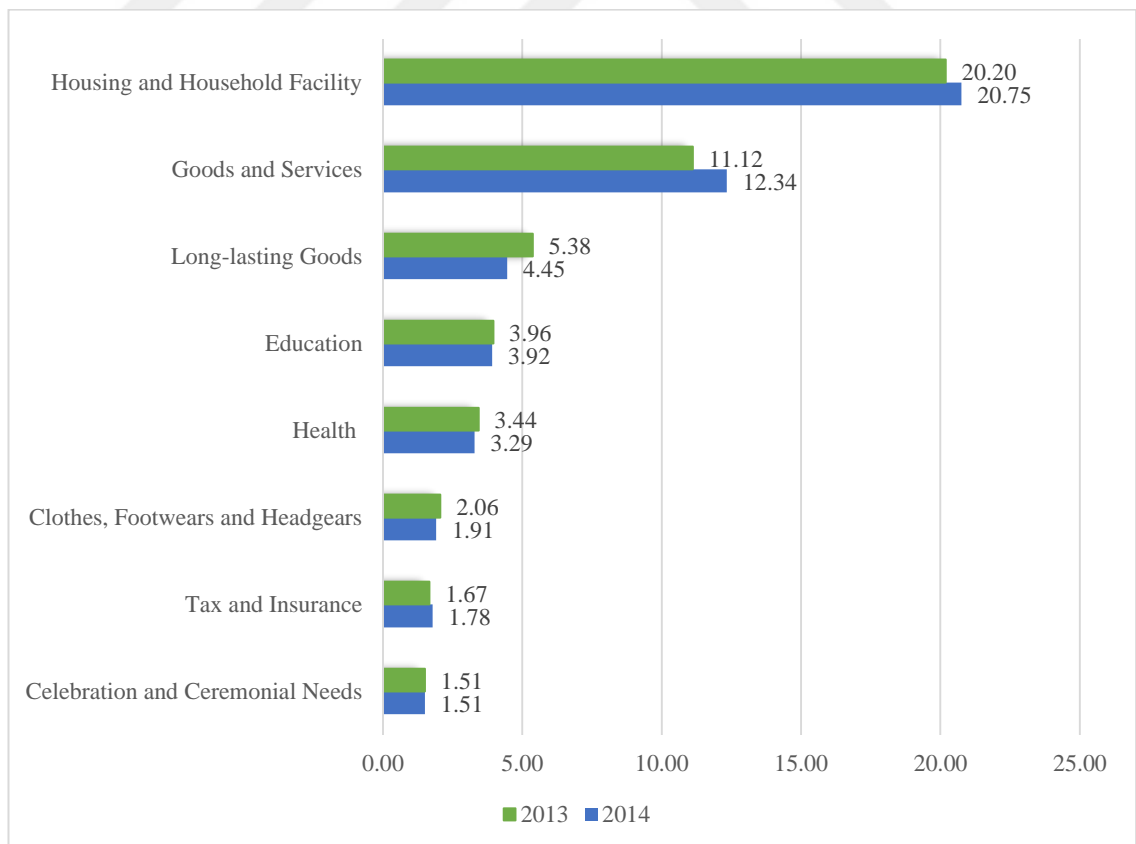
expenditure were still depleted slightly more by food expense (50.04%) than non-food (49.96%). If we see Figure 1.2 we will notice that Indonesian only shared 3.29% for health of their monthly expenditure. The number was lower than that of 2013 (3.44%).

Figure 1.1. GINI Index of Indonesia



Source: BPS, 2016

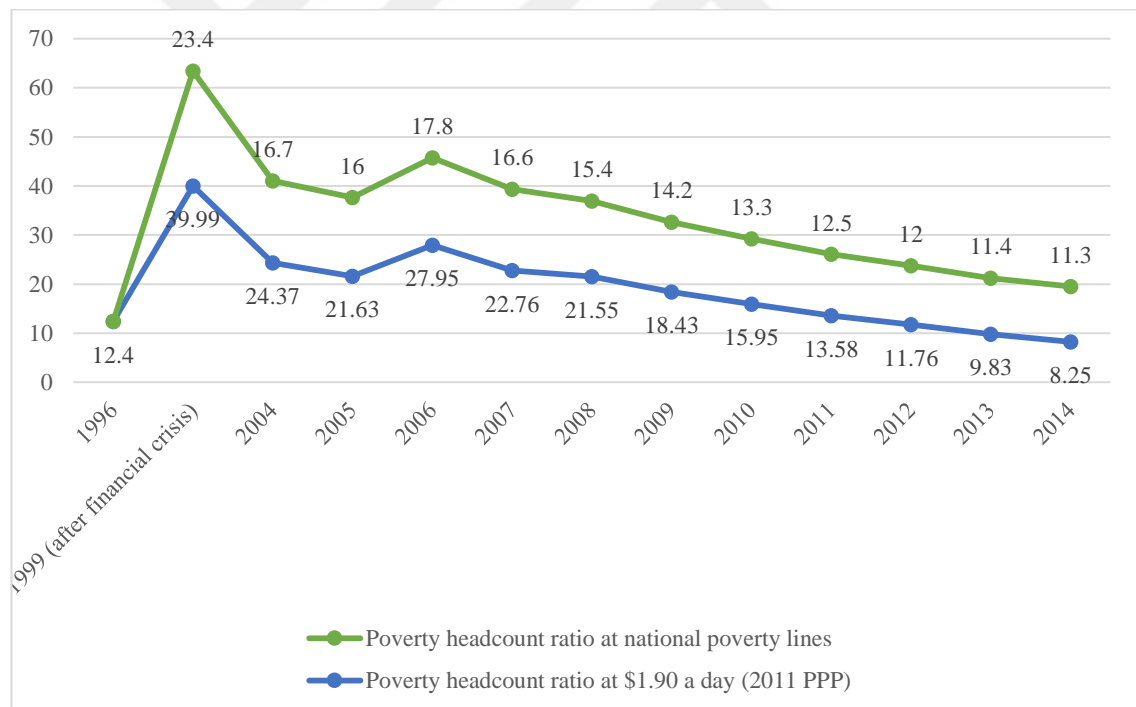
Figure 1.2. Average Monthly Expenditure per Capita on Non-Food, 2013-2014 (%)



Source: BPS, 2016

Poverty rate, a common issue faced by many developing countries, had vigorously escalated in Indonesia after financial crisis struck Asian countries in 1997-1998. Figure 1.3 provides the data on poverty in Indonesia by headcount ratio at \$1.9 a day and at national poverty line. Poverty headcount ratio at \$1.9 a day represents the percentage of population living below \$1.9 a day which the number has been announced as the new global poverty line defined by World Bank (World Bank, 2016). Whereas poverty headcount ratio at national poverty line using country's own poverty line which may vary from one country to another. In Indonesia, national poverty line in 2015 was 356,378 Rupiahs/Capita/Month for urban area and 333,034 Rupiahs/Capita/Month for Rural region (BPS, 2016). In both terms, poverty in Indonesia declined sluggishly and as of 2012, nineteen years after monetary crisis, the rate eventually reached smaller number than that of 1996.

Figure 1.3. Poverty Headcount Ratio of Indonesia



Source: World Bank, 2016

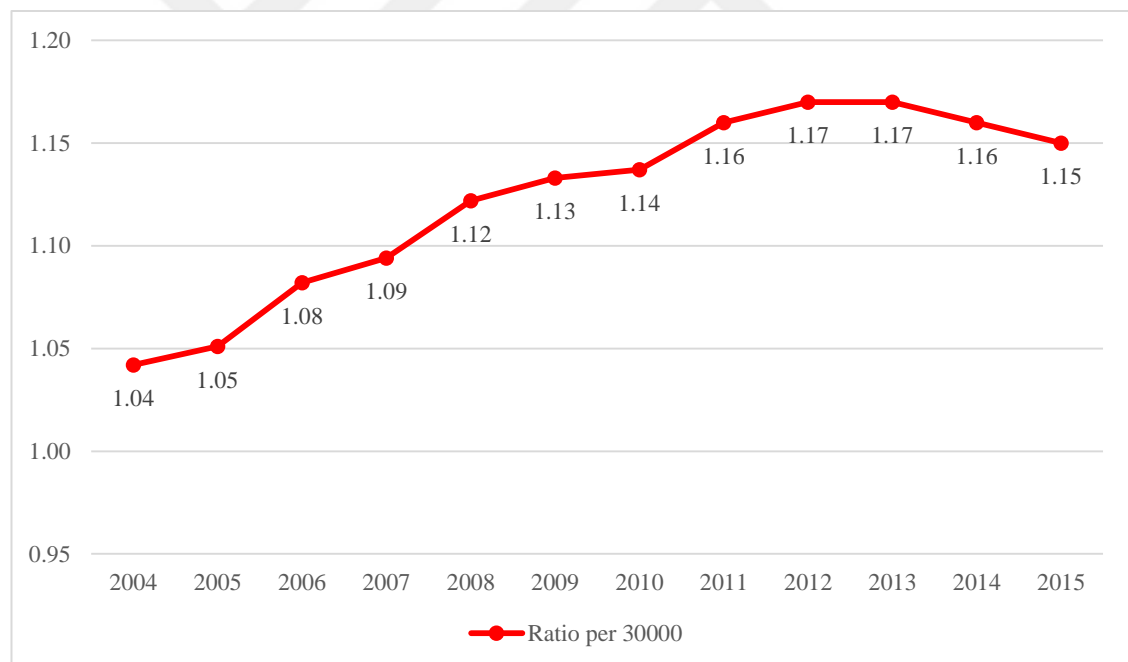
People is one of development determinants of a country. Thus, demographic changes need to be seriously considered when government wants to plan any development programs, including that on health sector. Health improvement is one of important factors to escalate society's health level. Optimal achievement of society's health level is not merely

determined by the state of health, but other related contributors such as education, economic, social and political situation also play a crucial role (MoH, 2015: 6).

1.2. HEALTHCARE FACILITIES

Health level of society in a country is highly associated with health facilities condition. As stated in Law No. 36/2009 on health, healthcare facilities is a tool and place used to organize healthcare programs, either promotive, preventive, curative or rehabilitative, carried out by government, local government and society. In primary level of public and individual healthcare provision, government put *Puskesmas* (Health Center) as a gatekeeper which emphasizes more on preventive and promotive actions (MoH, 2015: 25).

Figure 1.4. Ratio of *Puskesmas* per 30000 people in 2004 – 2013



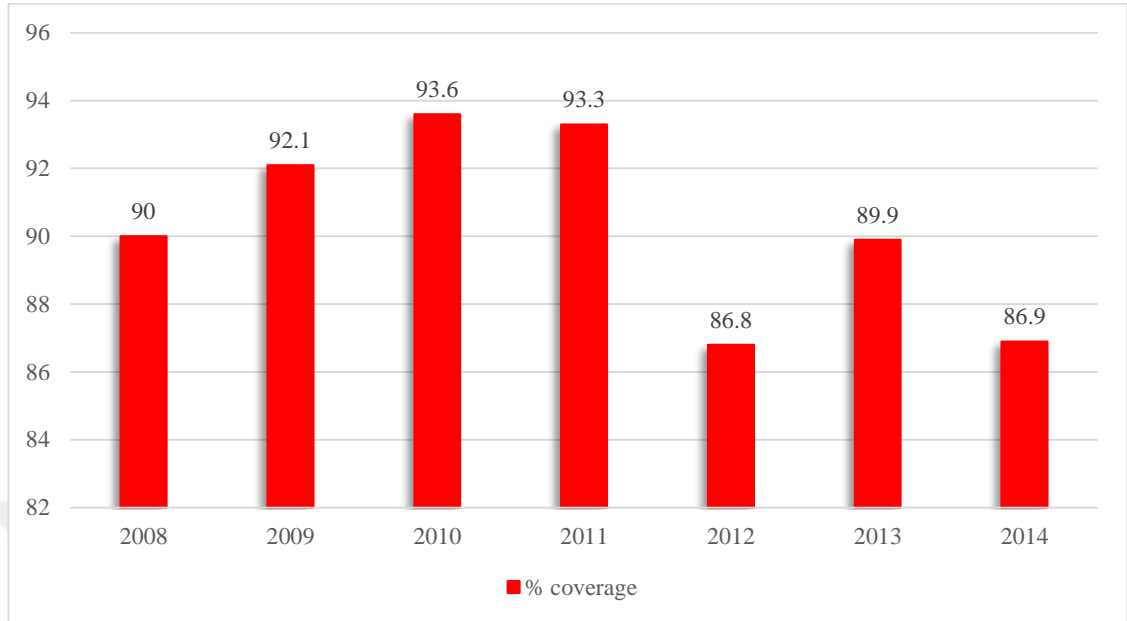
Source: MoH, 2004 - 2015

The number of *puskesmas* had increased from 9,731 units in 2014 up to 9,754 units in the late of 2015 which consist of 3,396 *puskesmas* with inpatient care service and 6,358 without it. Even though the number is always augmented, but it does not mean that the needs of primary healthcare in a region is sufficient enough for the people. Generally, the fulfilment of primary health care needs can be described by the ratio of *puskesmas* to

30,000 people (Figure 1.4). The ratio of *puskesmas* to 30,000 people in 2015 was 1.15, it means approximately each 26087 people in population were served by 1 *puskesmas*. The ratios had increasing trend until 2012 though only in piecemeal amounts. It seemed to get lower since 2014 as the result of imbalance between the growth of *puskesmas* number and the population growth. Nevertheless, even the ratio cannot bring actual condition of *puskesmas* provision as the accessibility and population density may vary in each province. Some provinces may have higher ratio of *puskesmas*. It usually happens to remote districts which working-area coverage larger than the population number. Districts with greater population density like those in Java Island, in other hand, have less number of *puskesmas*. In these area, individual healthcare activities are “helped” by numbers of private clinics. However, it should become a concern of government since individual healthcare, which mostly focuses on curative care, doesn’t enough to lift up society health level. More *puskesmas* are needed as it is the primary health organization that focuses as well on public healthcare activities; health promotion and disease prevention (MoH, 2015: 27).

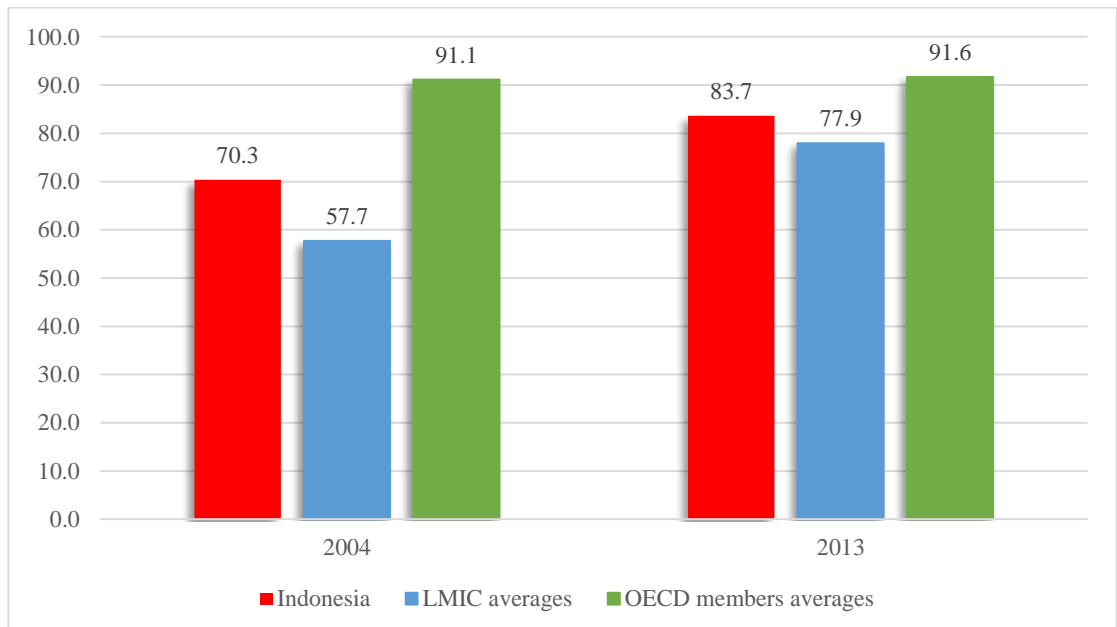
Puskesmas as a gatekeeper also played an important role in the provision of immunization. There are five compulsory basic immunizations in Indonesia which the vaccines are subsidized by government: BCG, Hepatitis B, DPT-HB-HiB, Polio, and Measles. Other immunizations such as IPV, Rotavirus, Influenza, MMR and Varicella are provided by private sectors and are often either out-of-stock or costly. Figure 1.5 shows the coverage of complete five basic immunizations received by infants in Indonesia. Unfortunately, the coverage tended to decrease after 2011. No confirmation was found from MoH related to this climbdown neither in Infodatin (MoH’s Data and Information Centre) nor in Indonesian Health Profile Annual Report. Furthermore, the average number of DPT, Hepatitis B and Measles immunization coverage in Indonesia was much lower than OECD member average yet still above the averages of lower middle income countries (Figure 1.6)

Figure 1.5. Complete Five Basic Immunizations Coverage in 2008-2014



Source: Pusdatin MoH, 2016

Figure 1.6. DPT, Hepatitis B, Measles Immunization Coverage in Indonesia, Lower Middle Income Countries and OECD Members



Source: World Bank, 2016

To escalate the health level of societies, we need to consider not only promotive and preventive actions, but also curative and rehabilitative actions. Curative and rehabilitative care are delivered by hospital which takes a role as referral services provider too. Hospitals in Indonesia are divided into two categories: public and private hospital. Public hospitals are organized by ministry of health, local government (provincial or district/municipal), military, other ministries, or non-profit organizations. Whilst private hospitals are managed by BUMN (*Badan Usaha Milik Negara / State-owned Enterprise*) or by for-profit private institutions. The number of hospitals by ownership is presented in Table 1.1.

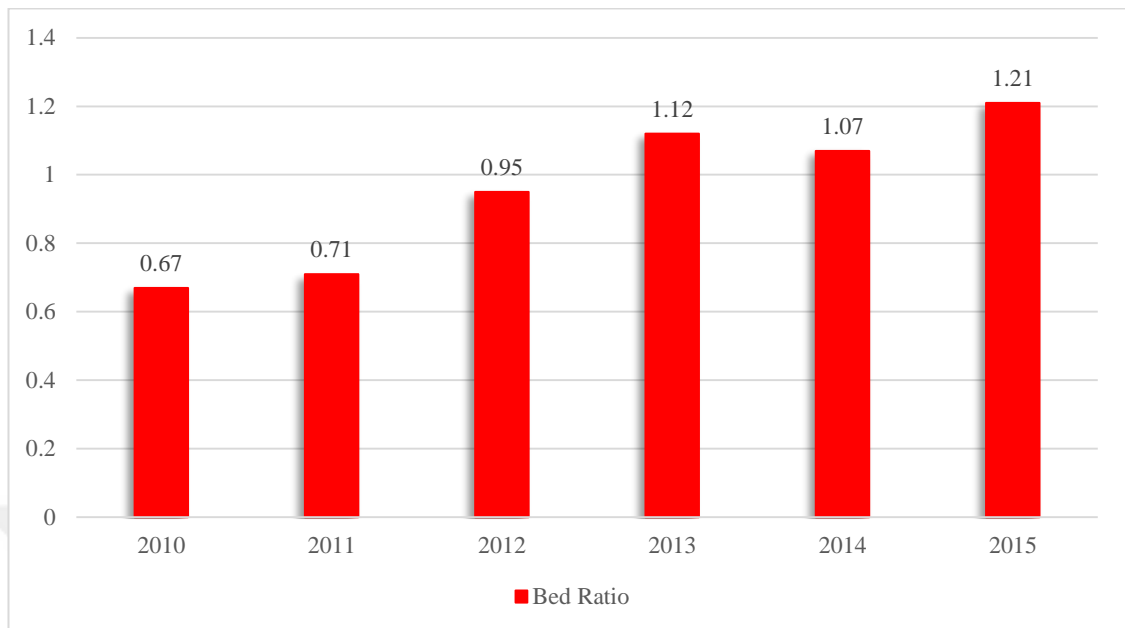
Table 1.1. The Number of Hospitals by Ownership

Ownership Status	2013	2014	2015
Public			
Ministry of Health and Local Government	676	687	713
Military	159	169	167
Other Ministries	3	7	8
Non-Profit Organization	724	736	705
Total of Public Hospitals	1562	1599	1593
Private			
SOEs (State-owned Enterprises)	67	67	62
For-profit Private Organization / Person	599	740	833
Total of Private Hospitals	666	807	895
TOTAL	2228	2406	2488

Source: MoH, 2015

Ratio of hospital bed to 1000 people can explain whether population's need for referral care in a region is fulfilled. In the late 2015, ratio of hospital beds in Indonesia was 1.21 per 1000 people. As 1:1000 bed ratio suggested by Indonesian Ministry of Health, it means sufficient bed for everyone (MoH, 2015: 37). Figure 1.7 reflects that Indonesia reached sufficient amount of bed for its population as of 2013. However these numbers, again, cannot describe the actual condition since there is gap in the number of population density for each province.

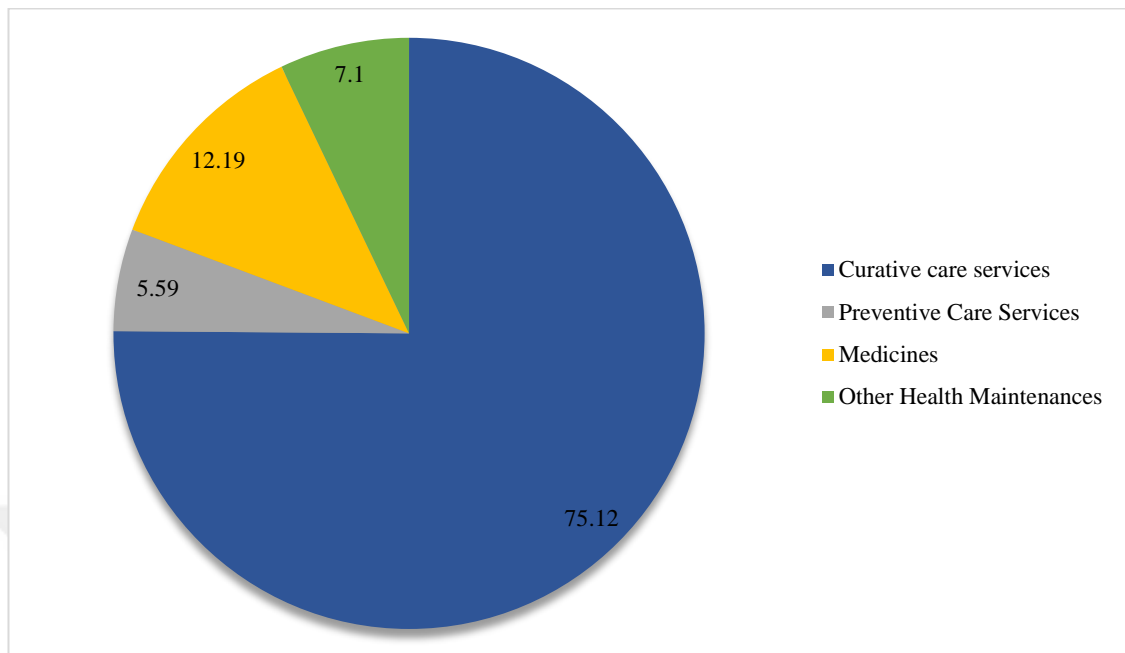
Figure 1.7. Hospital Bed Ratio per 1000 People



Source: MoH, 2015

Most curative and many preventive health activities depend on medicines. However, medicines also involve economic interests. Many stakeholders are concerned with pharmaceutical; manufacturers, consumers, professional associations, service providers, and various government departments (WHO, 2000: 131). In Indonesia, household expenditure on health was 12.19% spent on medicines, second largest item after curative care services (Figure 1.8). Government must ensure that access on medicine, especially essential drugs, is easy to find and affordable for people. Furthermore, the quality of medicine should also come into consideration since it is highly related to patient safety. Some attempts may include; effective regulation of system in market approval, quality assurance, licensing of professionals, and inspection of facilities (WHO, 2000: 131).

Figure 1.8. Monthly Allocation of Household Expenditure on Health (2014)



Source: BPS, 2015: 249

1.3. HEALTHCARE PERSONNEL

Human resources are clearly one of the most crucial parts of health system. The performance of healthcare system depends on the knowledge, skill, and motivation of people delivering the healthcare services. Moreover, the cost of these human resources usually is the biggest single item in government budget on health. Notwithstanding its importance, it should be harmonized with other items like physical capital –health centre, hospital, equipments- and medicine as they ultimately affect healthcare personnel’s productivity. In addition to seeking balance combination between health personnel and physical resources, it is also necessary to deploy health personnel in balance number (WHO, 2000: 77).

The number of physician in Indonesia in 2015 was 41.026 (MoH, 2015: 47). It means every 100.000 population would be served by 16.06 physicians. With this number, government’s target on physician ratio per 100.000 population in 2014 was failed as it could not reach 40:100.000, and it is still far away from government’s new target that there should be 45 physician per 100.000 population by 2019 (MoH, 2015: 62).

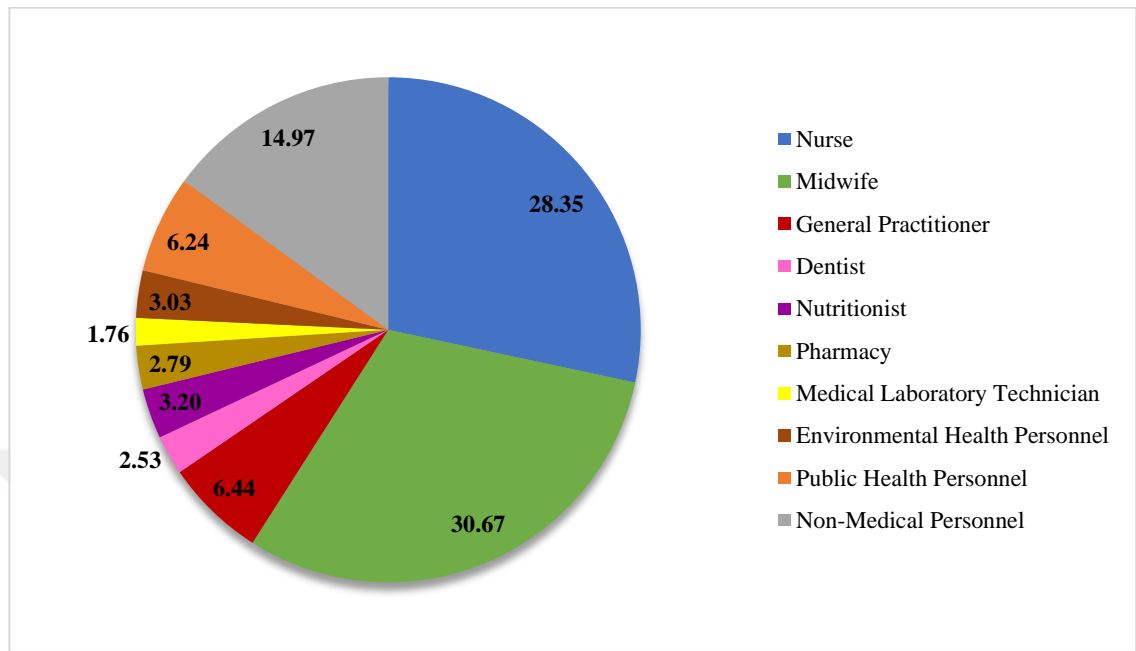
Still using 2015 data, the largest number of health personnel in Indonesia was nurse (223.910), followed by midwives number (111.736). Compared to Indonesia population number, there were approximately 88 nurses and 43 midwives for 100.000 population. These numbers yet could not meet 2014 target that were 158:100.000 and 100:100.000 for nurse and midwives respectively. Despite the failure, government had increased the target for 2019; 180 nurses and 120 midwives for 100.000 population (MoH, 2015: 64-65).

The shortage of health personnel in Indonesia compounded by imbalance distribution. Imbalance in the number of health personnel obviously gives disadvantages for population and it may attenuate the effectiveness of health personnel related to their profession. Like what stated in *the Law of Diminishing Returns*, so when a number of physician, for example, is to be added to somewhere which already have abundant number of physicians there would be a wasteful resources (cost, skills, etc.), as maybe some physicians only do simple thing that actually can be done by another health worker which is cheaper. In short, the addition of these physician would likely to waste cost than improve care (WHO, 2000: 77).

DIY Yogyakarta Province had the highest ratio of physician to population (40:100.000) while the smallest one was West Java Province which only had 11 physicians per 100.000 population. Similarly for nurse and midwife ratio, West Java held smallest ratio with 48 nurses and 21 midwives per 100.000 population. The highest was in North Kalimantan Province as the number of nurses even exceeded the government target; 211:100.000. Whilst the top of midwife ratio was owned by Bengkulu Province with 133 midwives per 100.000 population (MoH, 2016).

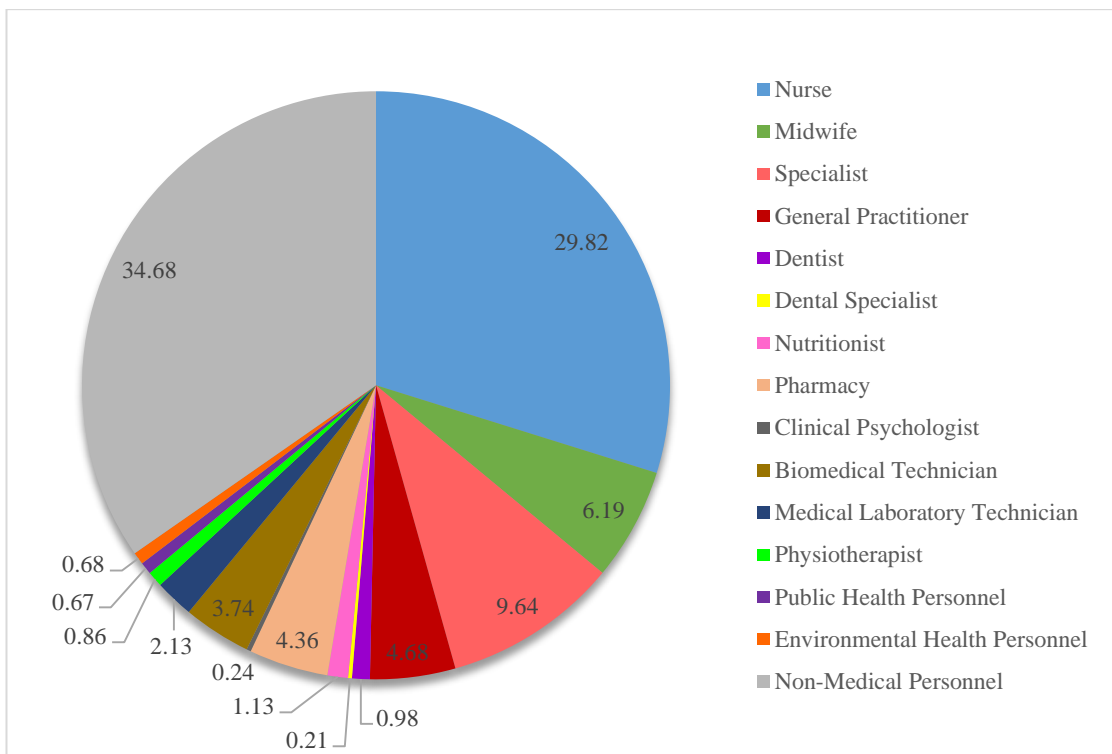
For health personnel composition in healthcare services, midwives had the biggest number in *puskesmas* health personnel composition (30.67%), with the smallest portion is medical laboratory technician (Figure 1.9). Whereas in hospitals, nurses filled almost half of medical personnel percentage (45.65%), followed by specialist (%). Dental specialist number was the smallest compared to other health human resources (Figure 1.10) (MoH, 2015: 48).

Figure 1.9. Percentage of Health Personnel Composition in *Puskesmas* by Profession, 2015



Source: MoH, 2015

Figure 1.10. Percentage of Health Personnel Composition in Hospital by Profession, 2015



Source: MoH, 2015

CHAPTER 2: HEALTH FINANCING IN INDONESIA

2.1. INDONESIAN HEALTH SYSTEM BEFORE THE REFORM

Insurance had actually been in Indonesia's health financing history since two years after it gained its independence in 1945. This social insurance, which provided its coverage only for work accidents and diseases, unfortunately was not well developed due to the instability of Indonesia domestic security. After the domestic condition gradually reached its stability, the government, under the act of fundamental health in 1960, was demanded to develop "*dana sakit*" (sick fund) in order to provide health service access for all Indonesian people, but it could not be executed as Indonesian economic power was very weak. The effort to actualize the act of fundamental health 1960 was brought up again seven years later through the Ministerial Instruction of minister of labour and workforce which assign the dues between employer and employee. This attempt, could not be accomplished since ministerial instruction was not strong enough to force the company. Some companies provided health insurance for their worker with reimburse system, while others didn't at all (Thabrany, 2014: 38-39).

In 1968, Minister of labour and workforce provided health insurance for civil servants and their direct family members. This social insurance was first managed by BDPDK (*Badan Penyelenggara Dana Pemeliharaan Kesehatan / Health Maintenance Agency*) under Department of Health. This agency was then ceased because of its lack of good management and replaced with PHB (*Perum Husada Bhakti*) in 1984. To broaden the coverage market to non-civil servants, in 1992 PHB was changed to PT. Askes (*Asuransi Kesehatan / Health Insurance*) which is a state-owned enterprise. PT. Askes also sold commercial health insurance JPKM (*Jaminan Pemeliharaan Kesehatan Masyarakat / Community Health Insurance Scheme*) to private company. In the same year, Jamsostek (*Jaminan Sosial Tenaga Kerja / Workforfe Social Security*) was introduced, but it was not an obligation, companies could choose to not participate (opt-out) in the program (Thabrany, 2014: 38-41)

As happened in many developing countries, Indonesia was struck by financial crisis in 1997-1998. Indonesian Government run a number of pro-poor programs, including JPS

(*Jaring Pengaman Sosial / Social Safety Net*), to deal with the severe circumstances. JPS segment on health, which was called JPSBK (*Jaring Pengaman Sosial Bidang Kesehatan / Social Safety Net on Health*), was failed because it carried JPKM (HMOs) objectives, that is maximize profit (Thabrany, 2014: 42-43 & Jacobs, 2004: 163).

In 2000, a task force from Medicine Faculty of *Universitas Indonesia* (University of Indonesia) was ordered to carry out a comprehensive review of Indonesia social security system. The review provided recommendation to reform social security system in Indonesia. It became the platform of SJSN (*Sistem Jaminan Sosial Nasional / National Social Security System*) (Thabrany, 2014: 43).

2.2. HEALTH INSURANCE REFORM (2004 – 2013)

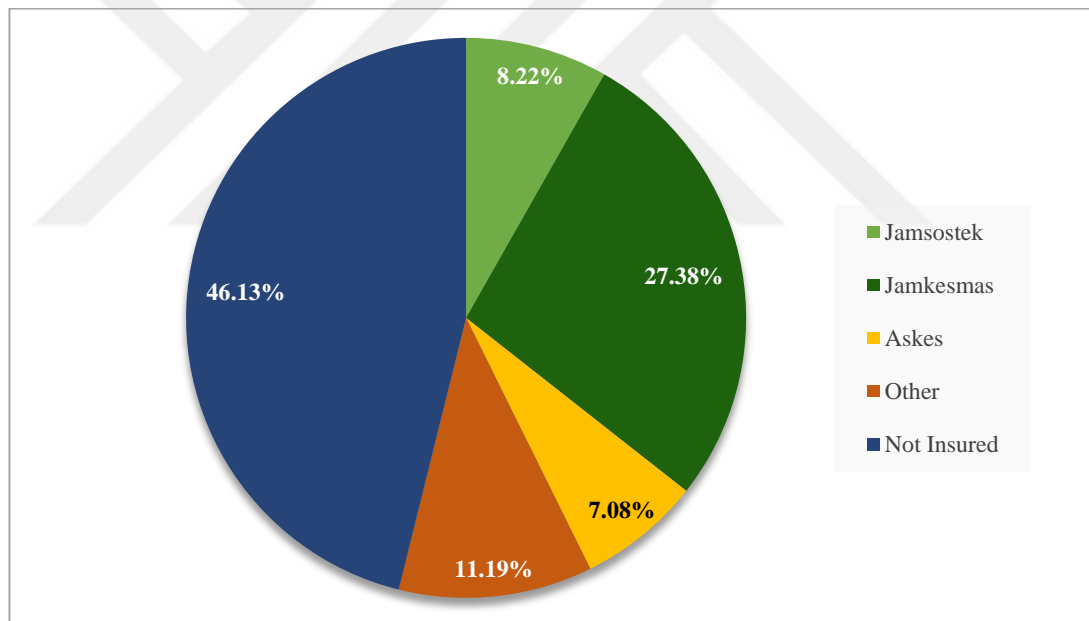
The process to establish SJSN was going slowly. Presidential instruction pertains to SJSN was just released two years after comprehensive review undertaken. Under presidential instruction No. 20/2002, a task force was formed to construct the academic text and draft bill of SJSN. The bill then was enacted in October 19th, 2004. In early 2005, new health program for the poor, Askeskin (*Asuransi Kesehatan Masyarakat Miskin / Health Insurance for Poor Population*), was introduced. The program, in 2008, expanded its coverage to near-poor population, and its name was changed to Jamkesmas (*Jaminan Kesehatan Masyarakat / Health Insurance Scheme for Population*) (Thabrany, 2014: 43-44).

Although Jamkesmas was claimed as the key building blocks of the government's proposed universal coverage scheme (Rokx, 2009: 31), but it was not considered as universal health coverage. Some of middle class segment, informal worker were excluded from the scheme. Even many poor, beside their motives to attain better health are low, didn't have *Jamkesmas* as it was not a mandate. *KAJS* (*Komite Aksi Jaminan Sosial / Social Security Action Committee*), a "pressure group" consisting of student and youth organizations, community leaders, and; labor and farmer unions, filled a lawsuit in public court in 2010 in order to rush the government to fulfil the mandate of Act of 2004 pertains to universal health coverage implementation (Fuady, 2013: 13). The lawsuit was granted

by public court through the issuance of Act No 24 of 2011, a passage on *BPJS (Badan Penyelenggara Jaminan Sosial / Social Security Administration)*.

Health insurance coverage in Indonesia had been very low. Reliable data from *Susenas (Survey Sosial Ekonomi Nasional / National Social and Economic Survey)* showed that only 20% of Indonesian population covered by health Insurance before the reform (BPS, 2015). In spite of there was an increase during the reform, it was a piecemeal. The survey indicated that the percentage increase only 6% in 2008. The number was upsized more rapidly after the implementation of *Jamkesmas* and the abolition of opt-out provision. The coverage eventually reached half of the population by the end of 2013, seconds away before *JKN* was commenced. Figure 2.1 shows the insurance coverage status of the population in 2013.

Figure 2.1. Insurance Coverage Status of Indonesian Population in 2013



Source: BPS, 2015

Despite the expanded of coverage, it was still difficult to attain equity in health care financing in Indonesia. The law of regional autonomy, which was applied since January 2001 as an effort in stabilizing the country after financial crisis, complicated the health financing system albeit also brought some advantages such as narrowing urban-rural infrastructure gap (OECD, 2013: 5). Under this law, local government had its own responsibility in providing health care services including the independence to set the

services charges. Local government then implemented various policies, even some transformed public hospitals into BUMD (*Badan Usaha Milik Daerah* / local government owned company) as they perceived that hospital services could be used to generate local income (Thabrany, 2008: 5). Decentralization also rendered difficulty for insurer (central government) to reimburse the hospitals in the same scheduled date as the direct payments of salaries and capital costs by all levels of government were differ among the region. World Bank believed that the complexity of the flows of funds during this decentralization as an intricate, inequitable, inefficient, and fragmented set of financing flows (Rokx, 2009: 31).

2.3. JAMINAN KESEHATAN NASIONAL (JKN): UNIVERSAL HEALTH COVERAGE IN INDONESIA

Indonesian universal health coverage which is called JKN (*Jaminan Kesehatan Nasional* / National Health Insurance) was officially implemented in 2014 January and as law No. 24/2011 stated, it is run by Health BPJS (*Badan Penyelenggara Jaminan Sosial* / Social Security Administration), the successor of PT. Askes (MoH, 2014: 10). Unlike the predecessor, the legal status of BPJS is a non-profit public corporation. Non-profit corporation was expected to maximize the benefit for members as it is the aim of universal health coverage. The three major social health insurances, Jamkesmas; Jamsostek Health; and Askes, were synchronized into single insurance scheme, creating one large risk pool (Trisnantoro, et al., 2014: 13).

This social health insurance is a mandatory scheme as stated in Law No.40/2004. It is funded through the government contribution and premiums paid by the member. The member is divided into two categories: *PBI* (*Penerima Bantuan Iuran* / Contribution Beneficiaries), those who cannot afford to pay the premium, and; *non-PBI*, consists of salaried workers, non-salaried workers including foreigners who have been staying in Indonesia more than six months, self-employed, and pensionaries. The premium paid by salaried workers is depend on the percentage of their salaries, while for non-salaried and self-employed, the nominal is set by *BPJS* (MoH, 2014: 21-22).

In *JKN* system, unless it is an emergency case, every participant must visit *puskesmas* (*Pusat Kesehatan Masyarakat* / primary healthcare provider) first in order to receive the health services needed. Thus, primary healthcare provider play as a gatekeeper. *BPJS* pays the primary care providers using monthly capitation basis. They are reimbursed based on the number of registered members. In other hand, *BPJS* pays hospitals, both private and public, through a prospective payment system based on *INA-CBGs* (Indonesia Case Base Groups / Indonesian DRGs). *INA-CBGs* is expected to encourage a more patient-focused and better quality services, efficient treatments, and avoiding moral hazard (Trisnantoro, et al., 2014: 14). The current coverage of *JKN* per March 2016 was 171 million people, 65.8% of total population (BPJS, 2016). Government targeted all of Indonesia population will be covered by 2019, five years after it was first implemented. These landmarks are summarized in table 2.1.

Table 2.1. Overview of Social Health Insurance Landmarks in Indonesia

Year	Initiative
1947	Social insurance for work accidents and diseases: failed
1960	Government's attempt to develop " <i>Dana Sakit</i> " (Sick Fund) under act of fundamental health in 1960 was failed
1967	Minister of labour and workforce issued Ministerial Instruction as an effort to actualize the act of fundamental health 1960: failed
1968	Health insurance for civil servants (managed by <i>BPDPK</i>)
1974-1990	Trial in community-based health insurance (CBHI) a.k.a. " <i>Dana Sehat</i> " (Healthy Fund)
1984	<i>BPDPK</i> replaced with <i>PHB</i> (<i>Perum Husada Bhakti</i>)
1992	<i>PHB</i> was changed to <i>PT. Askes</i> (<i>Asuransi Kesehatan</i> / Health Insurance) which is a state-owned enterprise. <i>PT. Askes</i> initiated to sold <i>JPKM</i> (HMOs) <i>Jamsostek</i> (<i>Jaminan Sosial Tenaga Kerja</i> / Workforfe Social Security) was introduced
1997	Financial crisis
1998	<i>JPS</i> (<i>Jaring Pengaman Sosial</i> / Social Safety Net) financial assistance for the poor, assisted by ADB (Asian Development Bank) loan
2000	Comprehensive review of Indonesia social security system

2001	The law of regional autonomy (decentralization) was implemented
2002	A task force on <i>SJSN</i> bill was formed under presidential instruction No. 20/2002
2003	The task force finished drafting bill on National Social Security System (<i>SJSN</i>) on December
2004	The bill on National Social Security System (<i>SJSN</i>) was enacted
2005	<i>Askeskin</i> (<i>Asuransi Kesehatan Masyarakat Miskin / Health Insurance for Poor Population</i>) scheme was introduced
2008	The insurance coverage was expanded to cover near-poor population by transforming <i>Askeskin</i> to <i>Jamkesmas</i> (<i>Jaminan Kesehatan Masyarakat / Health Insurance Scheme for Population</i>)
2010	<i>KAJS</i> demanded the government to implement universal health coverage as mandated in Act No. 40 Year 2004
2011	The lawsuit was granted by public court through the issuance of Act No 24 of 2011, a passage on <i>BPJS</i>
2014	<i>JKN</i> was officially commenced
2019	<i>JKN</i> is expected to cover all of Indonesia Population

Adapted from: Thabrany (2014) and Rokx et al (2009)

CHAPTER 3: VALUE FOR MONEY

3.1. VALUE FOR MONEY CONCEPT

Vast use of internet and other social media disseminates information in a flash speed throughout the world. It gives people images about the condition of other countries, including health services and the outcomes, resulting in higher expectation for their own countries to improve their health performance. The pressure to secure accountability to citizens leads to the interest of international health comparisons study. It might produce a source of empirical evident and guide the policy makers in finding the appropriate policies (Papanicolas & Smith, 2013: 2).

Some would argue that the result of the study is questionable since no country has exact similarity to one another neither in the organization nor in funding arrangements of health. Nevertheless most of them face the similar challenges and struggle to achieve similar goals such as rising the quality of health, the equity in its access, and securing people from catastrophe expenditure. Thus, other countries will potentially act as an “experimental laboratory” by providing a comparison from their varying approaches and results (Nolte, Wait & McKee, 2006: 17).

Measuring health system performance is not a simple task to do since the outcomes are difficult to quantify and many external factors tied on it. World Health Report 2000 defined three basis of goals to help its member states measuring their health system performance in respect to better understanding and improvement: good health, responsiveness of what people expected from health system and fairness in financing. Better health is clearly the primary goal of health system as it is no use to build this system if it has no impact on health improvement. Responsiveness is associated to how everyone should be treated psychologically, respecting their dignity, autonomy and confidentiality of their information regardless who they are. As health care can severely deplete one's resources, risk pool to provide fair financial protection is therefore prominent. Fairness in financing is not only about how to create great pooling but also whether people receive back what they spent on it. The goal that “getting what you pay for” is same to all societal system, either in trade or health services. Well-offs maybe don't really get the benefits

back directly to them, but when poor savour the health services as what they expect, then in this way their “donation” return to them (WHO, 2000: 23).

Some might assume, usually in developing countries, that health outcome merely is the objective of health system. Fairness in financial contribution and responsiveness then are ruled out while they actually are other responsibilities that should also be addressed by policy makers to enhance their health system performance. It is by reason of poor people need financial protection more than better-offs since they are more prone to catastrophic expenditure and they deserve to get the same treatment and access to healthcare (WHO, 2000: 8). Thus, measuring these three objectives is necessary to assess health system performance.

In economic terms, performance is a measure of efficiency. Good performance is achieved when the attainment of the objectives be at a distance of minimum level and come close to the maximum. A health system can move toward the maximum by improving performance, that is, obtaining more value relative to resources devoted to it (WHO, 2000: 42).

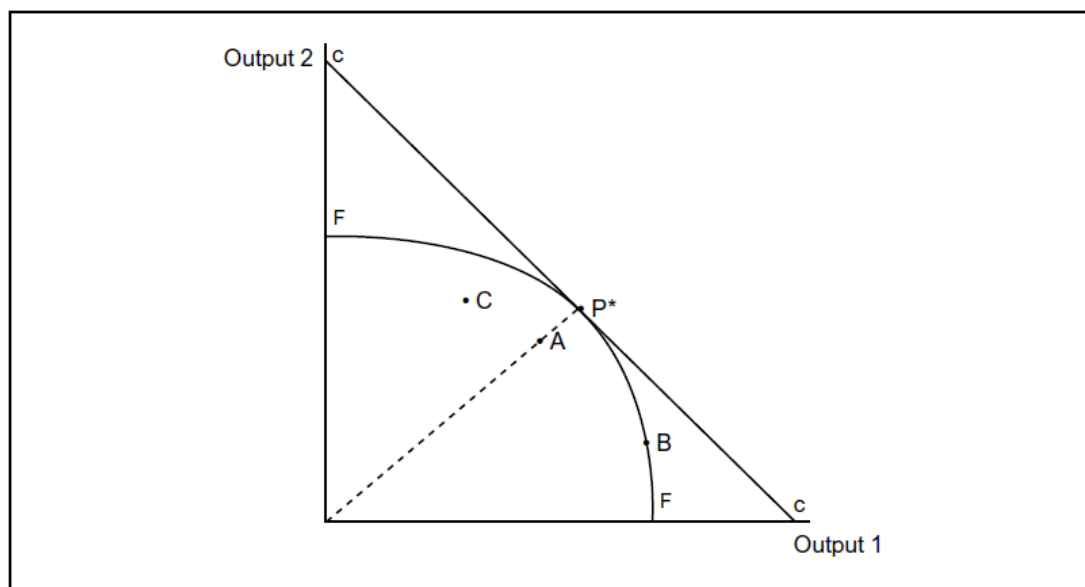
Value for Money (VfM) analysis is an approach that queries the extent to which valued outputs could be produced by the associated resources (Smith, 2009: 10). There are several stages in the transformation of the resources into valued output, and perplexity in Value for Money is often arise due to reviewers refer to different aspect of this process. Furthermore, most Value for Money concept gives a partial insight only into some aspects, for example, an outcome often offers an insight into the relationship between an output and one specific input while there are not just one input entangled to the process. Comprehensive measure of Value for Money is of course more “attractive”. Nevertheless partial Value for Money often gives a useful insight particularly when we are interested to find the reasons in poor Value for Money (Smith, 2009: 21).

Economist’ view in the terminology of Value for Money is slightly different; they brought a notion that efficiency can be used to refer various aspects of the production process (Smith, 2009: 13). Here come two fundamental economic concepts underlying Value for Money: Technical Efficiency and Allocative Efficiency. Technical Efficiency implies the extent to which an organization can minimalize the resources used to produce specified level of outputs. Whilst allocative efficiency refers to the distribution of its limited

resources to provide the correct combinations of health services in line with the preferences of society.

The ideas of technical and allocative efficiency are diagrammatically illustrated in Figure 3.1. Suppose there are only two outputs; output 1 and output 2. Given expenditure (input) with current technology, the maximum possible outputs organization can obtain is described by frontier FF. Thus, any organization's output must lie on or below this frontier. If the combination of output 1 and output 2 lie below the frontier FF, for example point C and A, then the organization located in either point C or A is producing technically inefficient outputs. Any points that lie on frontier FF such as P* and B, in the other hand, are technically efficient. But being technically efficient solely doesn't mean they got allocative efficiency. Society's value are represented by slope cc. It exhibits the combination of output 1 relative to output 2 weighted by society's preferences. Point P* is the only point whose the combination of outputs lies on frontier FF and is also meet the expectation of societies by intersecting slope cc. Point P* therefore is both technically and allocatively efficient (Smith, 2009: 14-15).

Figure 3.1. Technical and Allocative Efficiency with Two Outputs



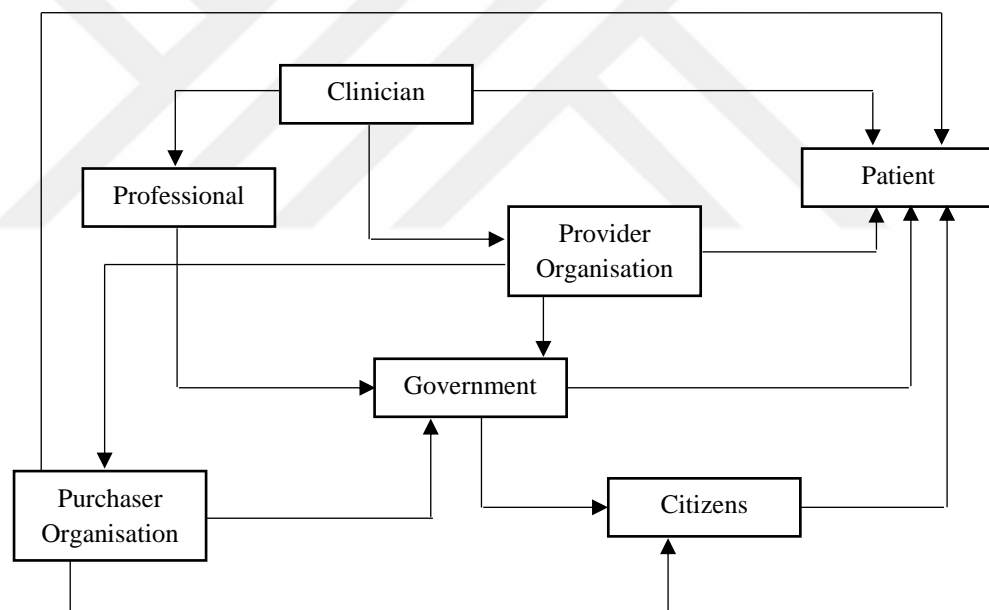
Source: Smith, 2009

The main background of analysing value for money is related to accountability: to reassure payers that the money they spent transformed into worth outputs. For example,

taxpayers would expect the taxes assigned to the NHS used to maximise health gain. Thus provider needs to weigh allocative efficiency to determine what to purchase and in what amount. Similarly, technical efficiency should also come to concern as it is significant to secure the resources in achieving optimum performance.

Even though there may not all of stakeholders see the necessity of Value for Money, such as country with NHS where patients do not pay directly for healthcare, in any health system someone must pay for it after all. Patient has interest to assurance that their money pay them back with the expected consequence. Likewise, taxpayers need to know that the tax contributions to NHS are wisely spent. The government as well, is in charge to oversee whether the health system is both, adequately funded and correctly used. Figure 3.2 illustrates some of the accountability relationship in healthcare (Smith, 2009: 10-12).

Figure 3.2. Some of the Accountability Relationships in Healthcare



Source: Smith, 2009

3.2. MEASURING VALUE FOR MONEY IN HEALTHCARE

3.2.1. Developing Value for Money Measurement

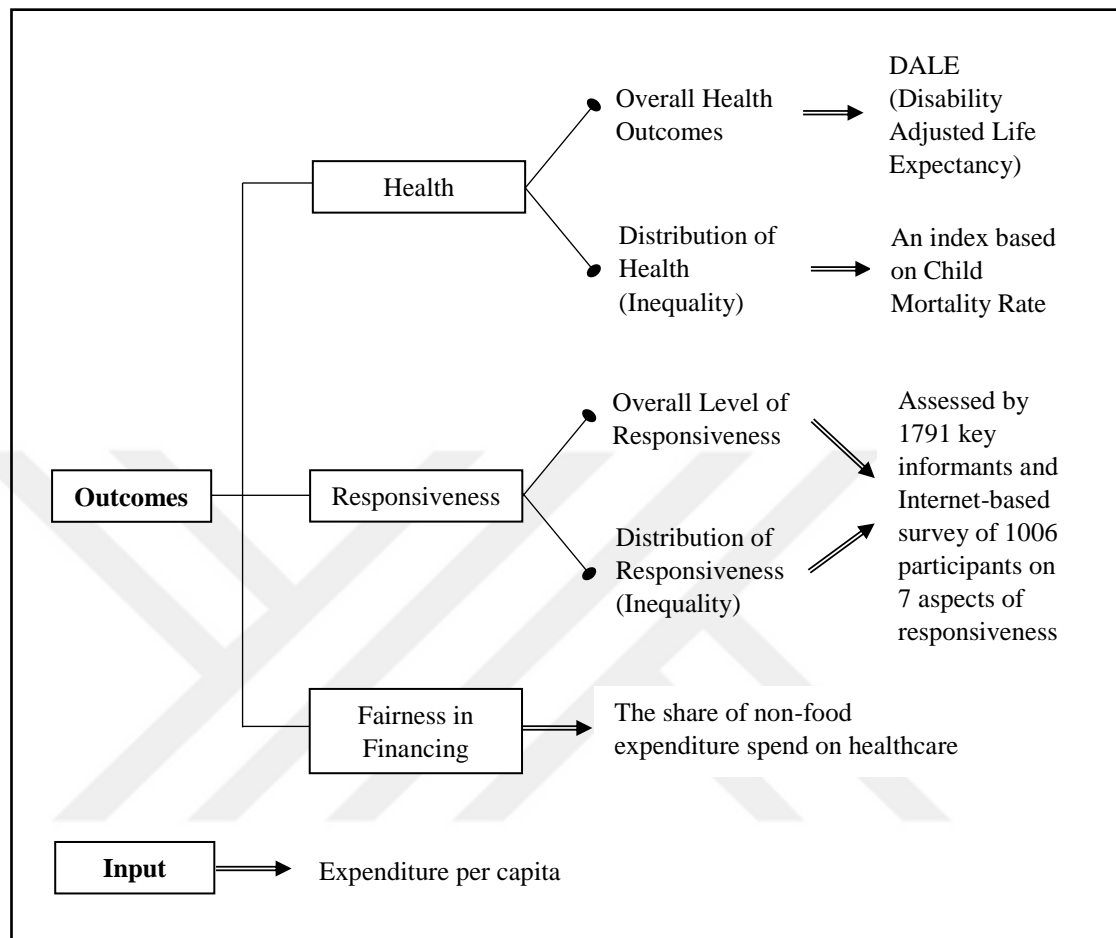
Enormous challenge in measuring value for money has ignited the emergence of many approaches. Value for money assessments in healthcare and government organizations in Indonesia were commonly measured by comparing the proportion of realised budget (as output variable) to planned budget (as input variable) to reflect the efficiency value, then defining effectiveness value by calculating the percentage of achieved outcomes which were obtained from customer or patients' level of satisfaction (Alni, 2006; Marsit, 2010; Naim, 2013; Nugrahani, 2007; Putra, 2013; Rismala, 2008).

Other approach, adopted by the United Kingdom's Office for National Statistics (ONS) is by tracking the change in productivity of the NHS over time. It measures the outcomes of the NHS, which are acknowledged as aggregation of various type activities, by using the cost attached to these activities as their weights (Smith, 2009: 23).

WHO with their World Health Report 2000, which so-called "the most ambitious level" on health performance assessment, has provided another example in obtaining a whole-system value for money measure. Their "three basis of goals" with inequality adjustment to depict the distribution were playing as outcome variables whilst the input variable was drawn from health expenditure per capita (Figure 3.3) (WHO, 2000: 27).

Whatever approach to be adopted, there are some points, according to Smith (2009), need to be considered in measuring value for money: outcomes of interest, intermediate outputs and activities, inputs, possible external constraints on achieving value for money, and choosing time horizon.

Figure 3.3. Variables used by WHO in World Health Report 2000 model of Health Performance Assessment



Source: WHO, 2000

3.2.1.1. Outcomes of Interest

Outcome is the valued output of the health service, that is, the extent to which the output yields the desired aims. Albeit there is dissent in viewing what should be valued, World Health Report 2000 model has been adopted by many of its member states to define the outcome items: Health gain, responsiveness, and fairness in financing (Figure 3.3).

Health gain, was measured by WHO using DALEs (Disability-Adjusted Life Expectancy) that weight disability through reflecting social preferences for seven severity levels of disability (Mathers et al., 2000: 6). England used QALYs (Quality-Adjusted Life Year) and associated measurement instruments such as EQ5D (Smith, 2009: 7). Some other

countries, such as Canada and Australia, applied HALEs (Health-Adjusted Life Expectancy) using population survey data on the prevalence of disability at four severity levels along with more or less arbitrary severity weights (Mathers et al., 2000: 6).

Responsiveness measures the extent to which the health system meet the expectation of population on non-health related aspects. The basic notion of responsiveness is related to respect human being as a person, which is subjectively judged by the patients, and more objective matter that is related to the ability of health system in satisfy the concern of patients and their families regarding the services, as clients. This concept brought forth seven aspects of responsiveness (Figure 3.4) that was used as the score card by WHO. 1791 key informants from 35 countries and internet-based survey of 1006 participants were asked to rank these seven elements, generated opinions about the relative importance of the aspects. The results were then adjusted for three consistent biases: women respondents gave lower scores than men, government official informants gave higher score than independent ones, and all countries with less political freedom tended to give higher score (WHO, 2000: 32).

Figure 3.4. Seven Aspects of Responsiveness Used in World Health Report 2000

<p>Respect human being as a person includes:</p> <ul style="list-style-type: none"> ▪ Dignity: generally it means not humiliating or demeaning patients ▪ Confidentiality: protect patient information or limited the access of patient information from whom doesn't have the right ▪ Autonomy: Give right to patient in choosing what treatment to receive or not receive regarding his/her own health, after get needed explanation. <p>As client:</p> <ul style="list-style-type: none"> ▪ Prompt attention: Immediate attention in emergencies and reasonable waiting times in non-emergency cases. ▪ Amenities of adequate quality: it mostly associated to cleanliness, spaces, hospital food etc. ▪ Access to social support networks: promote the right of patient to connect with family and friend as a supporting system ▪ Choice of provider: patient have the right in choosing which individual or organization deliver his/her care

Source: WHO, 2000

Fairness in financing is ensuring financial protection for everyone by alleviating the risk of household faces due to healthcare cost through risk distribution to population. Unfairness in health financing can be rendered by two situations: it inflicts regressive payments or exposes families to large unexpected expenses that are unforeseen and have to be paid out of pocket at the time of utilization rather than being covered by any prepayment scheme. Thus, financial fairness is best served by small amount of prepayment instead of depend on out-of-pocket expenditure, and prepayment arrangement must be more progressive. However, to measure the fair contribution to healthcare finance, WHO didn't refer to these *ex ante* risks, as there is no need to estimate the prepayment coverage of population. Coverage is just an instrument, not a final goal. Thus, what more appropriate to be measured is *ex post*, the burden of particular household related to healthcare cost compared to their capacity to pay (WHO, 2000: 38).

Albeit there have been progressive developments on the concept of outcomes, measuring eventual outcomes of healthcare is not an easy task to do. Most value for money analysis are therefore forced to measure the outputs instead of the intended outcomes. This is obviously inadequate since it omits three basic goals of healthcare mentioned before. However, many circumstances leave no alternative than to use outputs. There are often good rationales why value for money measurement ought to be based on outputs rather than outcomes. For instance, some health outcomes may need years to be realized, and the analyst obviously cannot wait for them until they appear. Furthermore, measuring outputs may show how much they contribute to the variation of outcomes (Smith, 2009: 34).

Generally, at macro level, scrutiny of the value for money of whole-system defined by WHO as “all the activities whose primary purpose is to promote, restore or maintain health” (WHO, 2000: 5) is challenging. In practice, this definition makes very difficult to be carried out in operational. Thus, health system outcomes are usually defined mainly in terms of the health of the population (Smith, 2009: 20).

3.2.1.2. Intermediate Outputs and Activities

Healthcare organizations are constituted from complex entities. Many activities therefore attribute to the outcomes. Some researches, including those in World Health Report 2000, explore items that tend to influence people's relative weight to outcomes, such as waiting time and travel distance. In World Health Report 2000 case, WHO combined all the three goals to be a single attainment by conducting a survey of 1006 respondents from 125 countries –half from among its own staff- to obtain how important each goal relative to others (WHO, 2000: 39). Anyway, the works regarding this measurement are still immature (Smith, 2009: 7).

3.2.1.3. Inputs

The next fundamental concern is defining money side of VfM analysis, that is the inputs. Whatever the sources and distribution of finance, whether it comes from public or private source or whether they flow from prepayment or out-of-pocket, the level of resources devoted to health is called an input of the health system (WHO, 2000: 39). In macro level it is quite clear what should be entitled as input. But when it comes to entity smaller than hospital, such as department, team, surgeon, it would be more difficult. It often rely on arbitrary accounting choices which may considerably vary from one unit to another being compared (Smith, 2009: 36).

3.2.1.4. Possible External Constraints

Value for money analysis is often complicated by exogenous factors such as geography, the characteristic and culture of people, activities of other related agencies, etc. Many of these factors are beyond the control of the organization under scrutiny. For example, mortality rates depend on demographic structure and political stability of the country. Surgical outcomes which usually are heavily related to the severity of the disease when the patient came to the hospital, can be another example of external constraint in smaller range. Researcher has attempted to develop methods for adjusting this issue such as by

compare like with like, selecting only organizations working in similar circumstances. However this is still a crude expedient (Smith 2009: 8 & 37)

3.2.1.5. Time Horizon

Other challenge in measuring value for money is whether the assessment adopts short run or long run perspective. It is very difficult to match the inputs to outcome –even to outputs- across time as current outcomes can be the consequences of previous efforts, such as disease prevention program. And vice versa, some of today's endeavours may contribute to future outcomes, for example, the cost spend on medical training at this time, will produce more skilled health personnel for the future. Therefore, it is necessary to adopt longer time horizon in analysing value for money.

3.2.2. Some Methods in Measuring Value for Money

Since there are limitations in piecemeal comparison, analysts then developed various statistical and management science techniques to measure the ratio of total outputs (or outcomes, if the quality is known) to total inputs. Smith (2009) has classed these into two broad approaches: statistical and descriptive methods.

Statistical methods are based on conventional econometric regression models. The focus of this method is on the input, which means it gauges the organization's expected expenditure given the outputs it produces. So, deviation degree between the actual and the predicted cost indicates the magnitude of efficiency. In conventional regression model, all variations in input then are assumed as inefficiency, whereas refined model called SFA (Stochastic Frontier Analysis) disentangle the variations into inefficiency elements and random elements –something that have no correlation with inefficiency-. However, SFA has been gain small endorsement from global researchers (Smith, 2009: 8).

Whilst descriptive methods are based on non-parametric technique called DEA (Data Envelopment Analysis). In contrast to typical statistical method which represents central tendency -that is evaluating organizations relative to an average value-, DEA evaluate

each organization by comparing it to only the “best” organization. This virtual organization with its inputs and outputs is the composite of all other organizations. Virtual organizations show the optimal performance the associated organizations could have obtained. The deviation between any inefficient organizations from its virtual organization reflects the efficiency score. That must be less than 1 (1 reflects the perfect score that means the associated organization is efficient) (Anonymous: 147-148).

DEA has been favoured than SFA method due to its flexibilities. DEA doesn't require the imposition of a specific functional form to describe the correlation between the dependent and independent variables. It therefore involves neither specific assumptions on distribution of the error terms nor strict model testing (Charnes et al., 1994: 5). In addition, it can handle multiple outputs and inputs simultaneously. Nevertheless, DEA also entails some shortages, for example, if any of best DMUs that compose the optimal frontier is incorrectly measured then the curve may envelop efficient DMU and give false judgement to efficiency score of inefficient DMUs (Smith, 2009: 45).

CHAPTER 4: METHOD

4.1. RESEARCH OBJECTIVES

As all countries face resource constraints in achieving or sustaining universal coverage, managing spending efficiently is critical (Maeda, et al., 2014: 34). Significant deficiencies in the efficiency and equity of the health system, unless addressed, will exacerbate cost pressures and could preclude the effective implementation of universal coverage and the desired result of improvements in population health outcomes and financial protection (Rokx, et al., 2009). Thus, every country need to arrange (or adjust) expenditure management which can ensure that the universal health coverage (UHC) would bring positive impacts not only fiscally but also for better health outcome of society. Likewise, since the law of National Social Security System (*SJSN*) enacted in 2004, the health expenditure has been increased steeper than previous years as it begun to move toward UHC. Indonesia, therefore, should do analytical assessment to ensure that they obtain worthy value for money.

The objectives of this study:

1. To define Indonesia's level of health care spending toward the implementation of universal health coverage
2. To define whether Indonesia gets back the value of its money spending on health care sector toward the implementation of universal health coverage
3. To obtain the views of key informants on health care sector in Indonesia regarding value for money of Indonesia's late and current health system

4.2. RESEARCH DESIGN

This study was conducted in three stages: First, generally describe the extent to which Indonesia gets its value for money by comparing its health expenditures relative to the improvements of health status indicators. Some health status indicators according to WHO were used: (1) Life expectancy at birth; (2) Probability of dying under age five years (under-five mortality rate) per 1000 live births; (3) Infant Mortality Rate per 1000

live births; (4) Maternal Mortality Ratio per 100 000 live births. Data on health expenditures and these health status indicators were obtained from World Bank, UNDP, WHO, MoH and other statistic centres.

The results then were benchmarked with other countries which are classified under these categories: (a) the APEC members; (b) Lower Middle Income Countries (according to World Bank), and; (c) the countries with similar HDI Level (according to UNDP). The APEC members included in this study are: Malaysia and Thailand as the developing neighbour countries; Australia as a developed country whose national health insurance claimed to be excellent, even resulting in the fall of private health insurance in this country. In terms of geographical situation, Australia is a neighbour country which also has a large territory; China as an Asian developing country which has quite high GDP with enormous number of population and vast territories, similar with Indonesia; and; the United States as a developed country known to have the highest health expenditure in the world.

In Lower Middle Income Countries category, Philippines, Vietnam, India, Ukraine, and Swaziland are on the list. Philippines and Vietnam are selected since they are developing countries neighbored to Indonesia, have similar HDI (Human Development Index) level, and; as for Philippines, the population spread to about 2000 of its more than 7000 islands, although inhabited islands of Indonesia reach almost the same with the total islands of Philippines, that is 6000 islands (out of about 18000 islands in total), in term of archipelago countries they are concluded to be similar (CIA, 2015). India is selected as a developing country with huge population and wide territories, characteristics that are also found in Indonesia. While Ukraine and Swaziland are selected due to the fact that the GNI (Atlas method) are the closest with Indonesia's. GNI Atlas method is the basis for grouping countries by their income (World Bank, 2015). The third category used in this study is HDI (Human Development Index). Thus, Botswana, Gabon, Paraguay, Uzbekistan, and South Africa are selected since they have the nearest HDI Level to Indonesia according to UNDP (UNDP, 2015).

At the second stage, this study measured value for money of Indonesian health financing system using output-oriented Data Envelopment Analysis with variable return to scale (VRS) specification. Unlike conventional statistical method which focus on the average

value of all producers, DEA seeks the “best” producer or best DMU (Decision-Making Unit) in DEA term. These best DMUs create Pareto-efficient frontier which “envelop” all other organizations. Each DMU not on the frontier is scaled against a convex combination of the DMUs on the frontier facet closest to it. Since this closest DMU doesn’t actually exist thus it’s called “virtual DMU” (Charnes et al., 1994: 5).

DEA is very flexible method in comparing the efficiency performance of various decision-making units (DMUs) which can be countries, organizations, or even individuals. As a non-parametric measure, DEA doesn’t need to assume any mathematical form to define functional relationship between the inputs and outputs. Instead, it use weighting scheme to estimate country efficiency score. Separate optimization is performed for each DMU then each optimization selects the set of weights that yields the highest possible efficiency for the associated DMU (Sale, 2003: 2-4). The maximal score would be 1. The closer DMU score to 1 the more efficient the DMU is.

The important step in DEA is defining the output and input variables. Life expectancy at birth and Out of Pocket Health Expenditure were drawn as output variables. Life expectancy at birth widely used as health status indicators since the gain highly related to many factors such as increased living standards, better education, improved lifestyle, larger access to quality health services, etc. (OECD, 2016). Out of Pocket Health Expenditure gives an idea on fairness in financial contribution as household catastrophic expenditure mostly imputed to it (Xu, Ke., et al., 2005: 2). In many countries the extent to which health system can shed protection from catastrophic expenditure is an important outcome measure (Smith, 2009: 29). Whilst for input variables, health expenditure per capita is obviously appropriate inputs as value for money analysis seeks the “return” of the money spent on health. GDP per capita was chosen as input variables since income reflects the wealth level of people which attributes to the health status. Similarly, education has a significant part in providing individuals with knowledge and competences that are needed to lift up health status. Education, in this study, is represented by Education Index. Urban population growth was also used as input variable, as it is a proxy for larger access to health as well as wider job opportunities (Çelik, et al., 2016).

The third stage is obtaining the views of key informants on health care sector in Indonesia regarding value for money of Indonesia’s health system during the reform years before

JKN was implemented and after *JKN* was implemented as a preliminary evaluation. They were collected using semi-structured interview performed to key informants which were selected through purposive sampling. The first key informant was one of the key person of *SJSN* law and concept in Indonesia, Prof. dr. Hasbullah Thabrany, MPH, Dr.PH., The second one was Kusman Ibrahim, Phd., vice chairman of AIPNI/AINEC (the Association of Indonesian Nurse Education Center), member of PPNI (Indonesian Nurse Association), and dean of Faculty of Nursing of Padjadjaran University . The third was dr. Dani Ferdian, founder of Vol-D (Volunteer Doctors) and member of IDI (Association of Indonesian Doctors). The 4th person was Jajang Rahmat, M.Kep., Sp.Kom., the head of welfare departement of PPNI (Indonesian Nursing Association) and staff of Ministry of Health Jakarta Branch and the last, Mamat Lukman, M.Si, the head of PPNI – West Java Region. The interview guide is attached in the annexes.

4.3. DATA SOURCE

The data of all variables were obtained from trusted sources: WHO, World Bank, UNDP, National Reports and Government Statistics Centers. The data used in this study were within 2004-2013 year boundaries as the reform stage begun in 2004 and the UHC was commenced in 2014.

4.4. DATA ANALYSES

The 2nd stage of value for money analysis in this study, that used Data Envelopment Analysis, was calculated with DEAP Software. Whereas the result of the 3rd stage, since there were only five interviews, were therefore manually analysed. Data analysis procedure were as following:

1. Collecting all the interviews' data and compile them verbatim into single interview transcript.
2. Sending the interview transcripts to key informants to be verified (if needed).
3. Reducing the data abstraction, that is, resuming the whole data then arrange them into segments (paragraphs).

4. Segmented sentences or paragraphs are categorized and labeled with a term (coding).
5. Listing significant statements until the list being unrepitive and overlapping
6. Grouping the statements into larger units (themes)
7. Translating the summaries into a mindmap
8. Interpreting the data

4.5. LIMITATIONS OF STUDY

From many Indicators proposed by WHO as proxies for health, the first stage of data analysis in this study only used four of them; a) Life Expectancy at Birth, b) Under-5 Mortality Rate, c) Infant Mortality Rate, d) Maternal Mortality Ratio. Other limitation is regarding to the number of key informant interviewed. Key informant interview indeed doesn't have minimum or maximum number of informants as long as their view reached a saturated data. In this study, however, the number of key informant was very limited due to the limitation of the writer. Thus, related publications and news were used to enrich the data.

CHAPTER 5: FINDINGS

5.1. HEALTH EXPENDITURES IN INDONESIA AND BENCHMARK COUNTRIES

As mentioned in earlier chapter, health care reform in Indonesia took place from 2004, when the law of *SJSN* enacted, until the beginning of *JKN/UHC* in January 2014. Thus, in order to receive the view of the extent to which health outcomes improved with the resources devoted to it, defining the level of Indonesia health expenditure is therefore necessary.

Table 5.1 presents the health expenditure trends in Indonesia from 2004-2013. Indonesian health expenditures, either as percentage of GDP or Per Capita, had never been high and although they showed an upward trend but it was only piecemeal. Even government health expenditure in 2013 was slightly less than it was in 2004. This low commitments on health funding in term of GDP share had made Indonesia placed among the 10% countries in the world with lowest share of GDP on healthcare (Bappenas & NDPA, 2014: 10).

As for out-of-pocket expenditure for health, despite the relatively decrease trend during 2005-2012, but 2013 out-of-pocket payment was higher than it was in 2004. While per capita out-of-pocket expenditure showed an increase trend. Indonesia's out-of-pocket payments were considerably high, as it exceeded the 15-20% limit suggested by World Health Report 2010, to be considered as negligible level (WHO, 2010: 42). The high out-of-pocket expenditure are likely for country whose government expenditure is low.

Table 5.1 Health Expenditure Trends in Indonesia

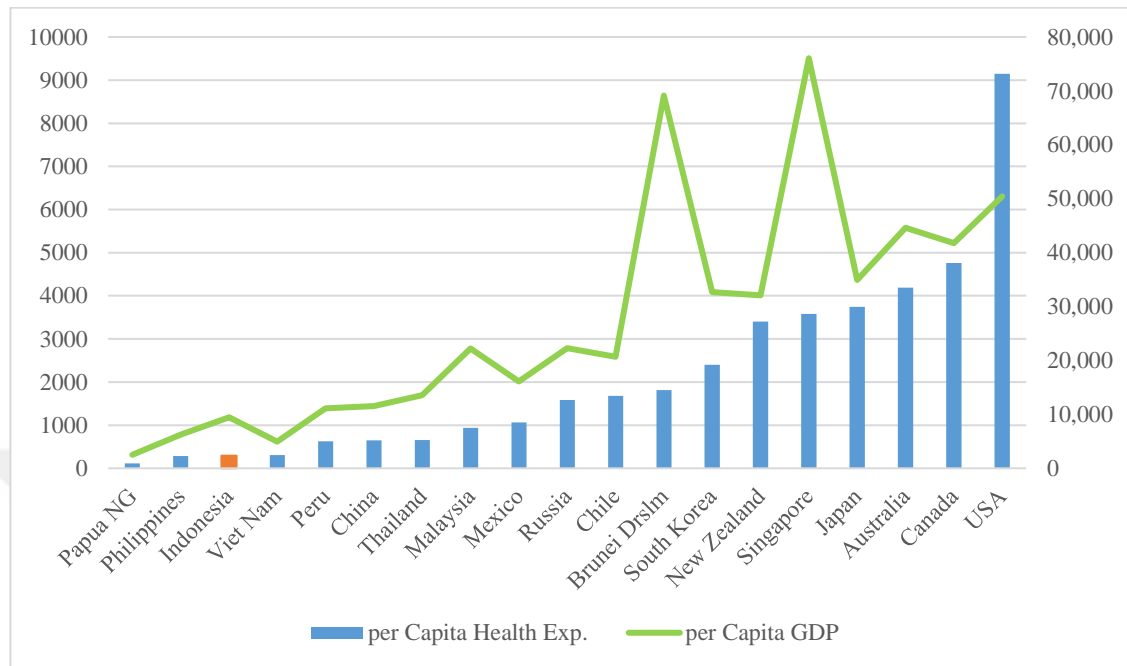
Year	GDP %	Per Capita Health Expenditure in Int\$ (PPP)	Public Expenditure (% of THE)	Out-of-Pocket Expenditure (% of THE)	Per Capita Out-of-Pocket Expenditure (US\$)
2004	2.4	128	39.5	44.7	12
2005	2.8	162	28.8	54.6	19
2006	2.9	181	31.4	52.3	24
2007	3.1	207	36.4	49.1	28
2008	2.8	200	35.8	49.1	30
2009	2.8	210	36.1	49.0	31
2010	2.9	230	37.7	47.2	41
2011	2.9	242	37.9	47.4	47
2012	3.0	273	39.6	45.3	49
2013	3.1	293	39.0	45.8	49

Source: WHO, 2014

5.1.1. Per-Capita Health Expenditures

Figure 5.1 shows health expenditure per capita among APEC countries. As would be expected, the United States stood out since its health expenditure is the highest in the world. Indonesia placed the third bottom after Papua New Guinea and Philippines. This figure reflects that health expenditure per capita is relatively related with overall income per capita.

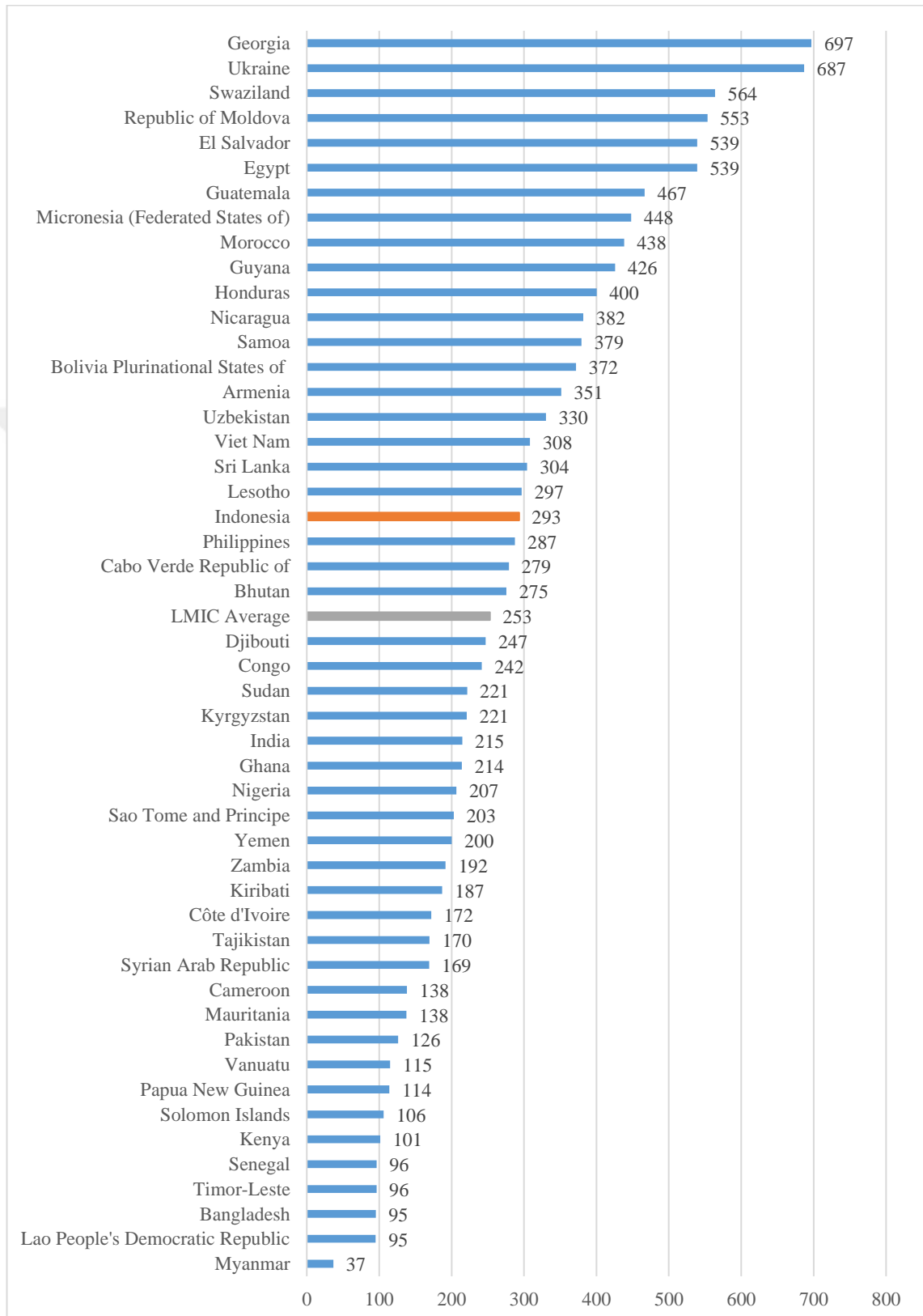
Figure 5.1 Per Capita Health Expenditures and GDP level of APEC Countries in constant (2010) PPP, 2013



Source: WHO, 2014

Among 49 lower middle income countries (LMIC), Indonesia's per capita health expenditure was ranked 20th of upper half countries, still higher than that of LMIC average. Georgia had the highest amount (697 Int\$) while Myanmar placed the last bottom with only 37 Int\$ (see Figure 5.2).

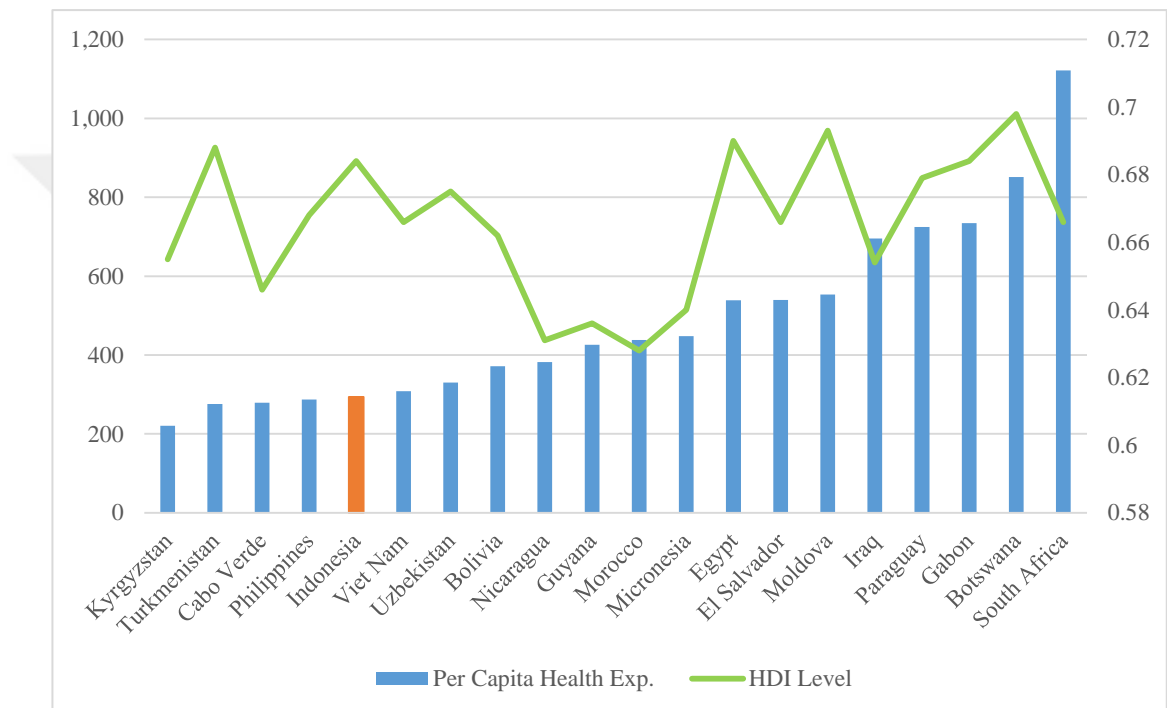
Figure 5.2 Per Capita Health Expenditures among LMIC in PPP, 2013



Source: WHO, 2014

Figure 5.3 shows that Indonesia placed the 5th bottom of 20 countries whose HDI levels are similar with Indonesia's. If we see the HDI line in Figure 5.3 where Indonesia actually has quite high HDI level among these medium human development countries. This figure indicates that there may no correlation between HDI level and money spent to health sector.

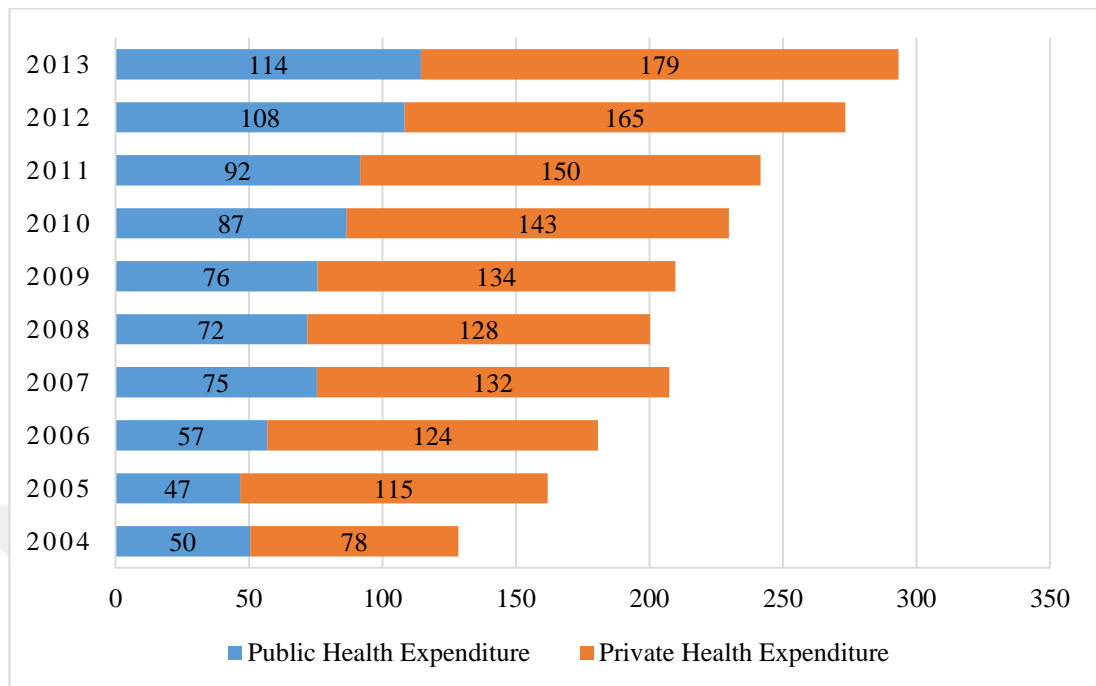
Figure 5.3 Per Capita Health Expenditures in Indonesia and Other Countries with Similar HDI, 2013 (PPP).



Source: WHO, 2014 & UNDP, 2014

Indonesia's per capita health expenditure showed an increasing trend during 2004-2013 though only piececake (Figure 5.4). However, private health expenditure still dominated per capita health expenditure in all years.

Figure 5.4 Indonesia's Per Capita Public and Private Health Expenditures in PPP, Int\$



Source: WHO, 2014

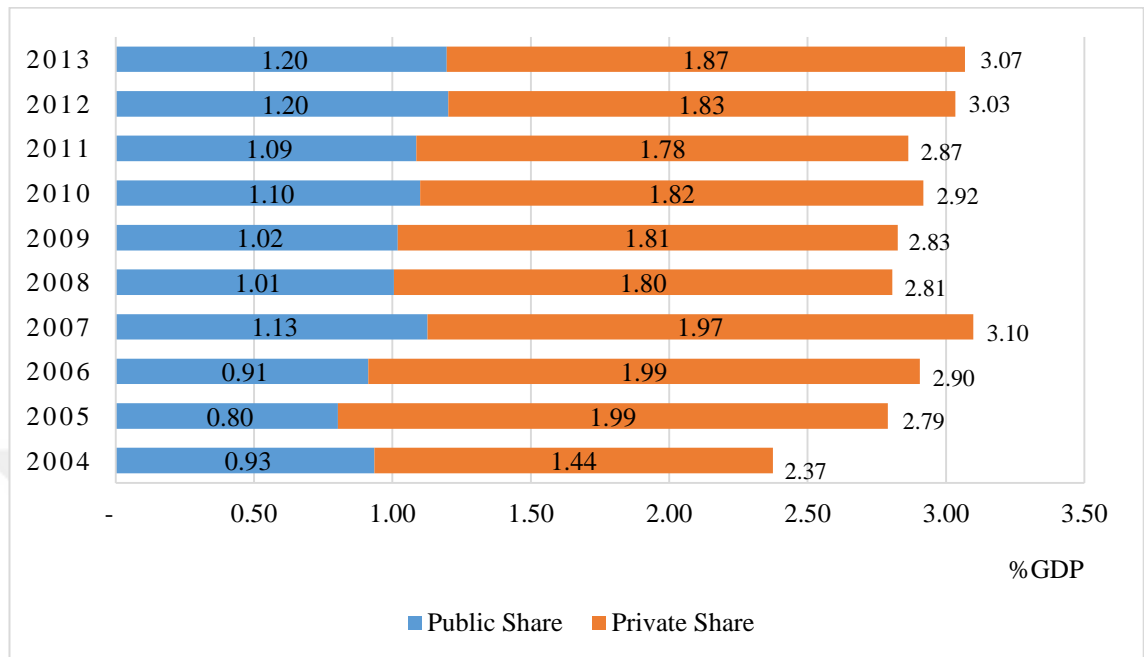
5.1.2. The Share of Health Expenditures in Gross Domestic Product

A set aside of GDP for Health expenditure in Indonesia is shown in Figure 5.5. This figure also describes the proportion shared between public and private expenditure. Private had always played bigger part and the trend tend to fluctuate.

Among APEC members, Indonesia shared the lowest health expenditure in GDP after Brunei Darussalam, far below the average of APEC members (Figure 5.6).

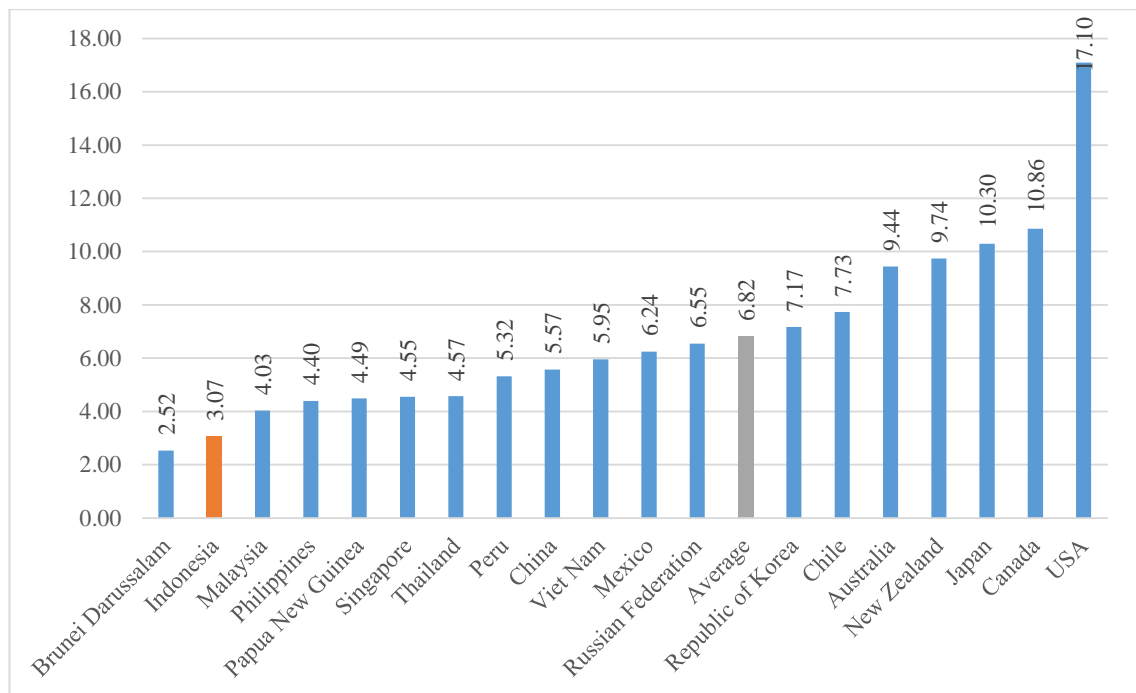
The same case occurred when it is compared to other Lower Middle Income Countries (Figure 5.7). Indonesia placed at the bottom fifth albeit its GDP is the highest among these countries after India. Either Indonesia or India sat on the lower half of the rank. The share was even way lower than that of LMIC average.

Figure 5.5 The Share of Public and Private Health Expenditures in Indonesia as a Percentage of GDP (%)



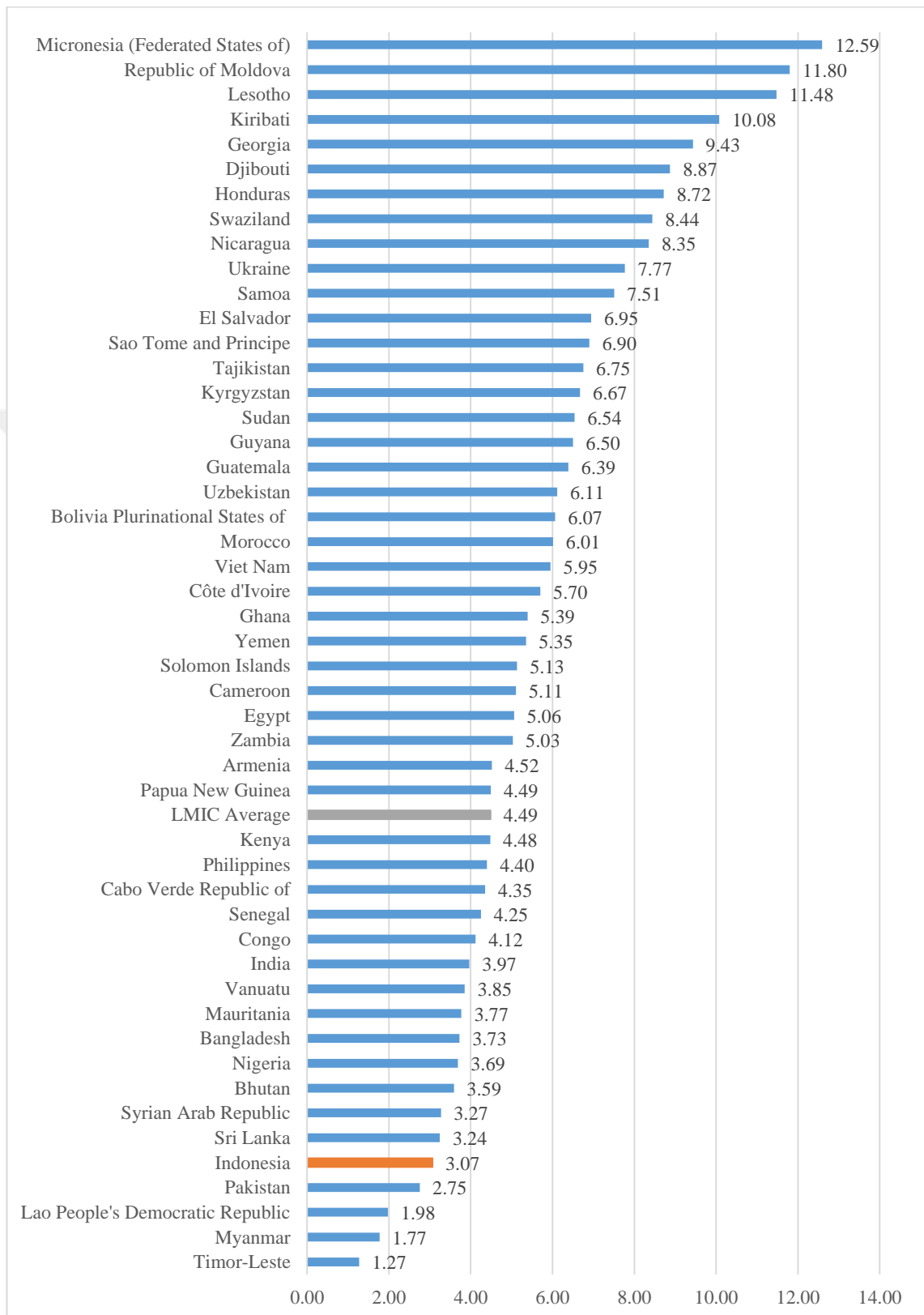
Source: WHO, 2014

Figure 5.6 The Share of Total Health Expenditures in GDP among APEC members, 2013 (%)



Source: WHO, 2014

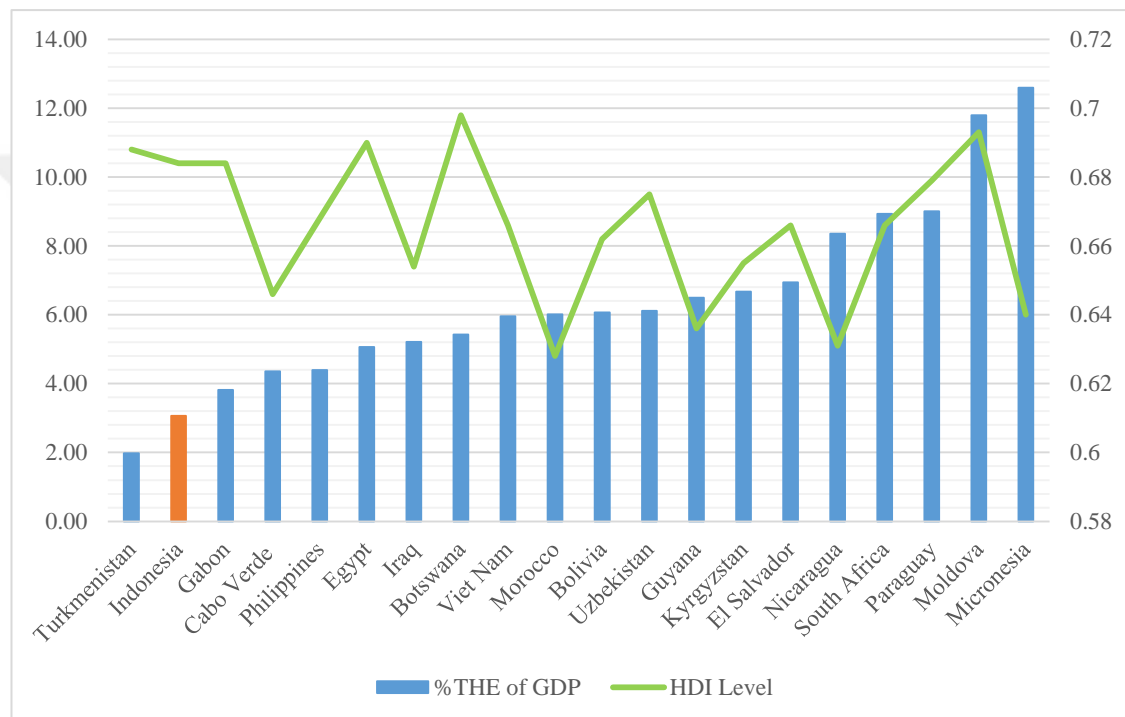
Figure 5.7 Total Health Expenditures Share in GDP among LMIC members, 2013 (%)



Source: WHO, 2014

All countries' Human Development Index level can be seen from the Green line (Figure 5.8). Indonesia ranked fifth among the medium HDI category. Even so, in term of health expenditure shared from their GDPs, Indonesia was still at the last bottom after Turkmenistan. This figure also therefore gives information that there are no correlation between the level of HDI and total health expenditure shared from GDP.

Figure 5.8 The Share of Total Health Expenditures in GDP in Indonesia and Other Countries with Similar HDI, 2013 (%).

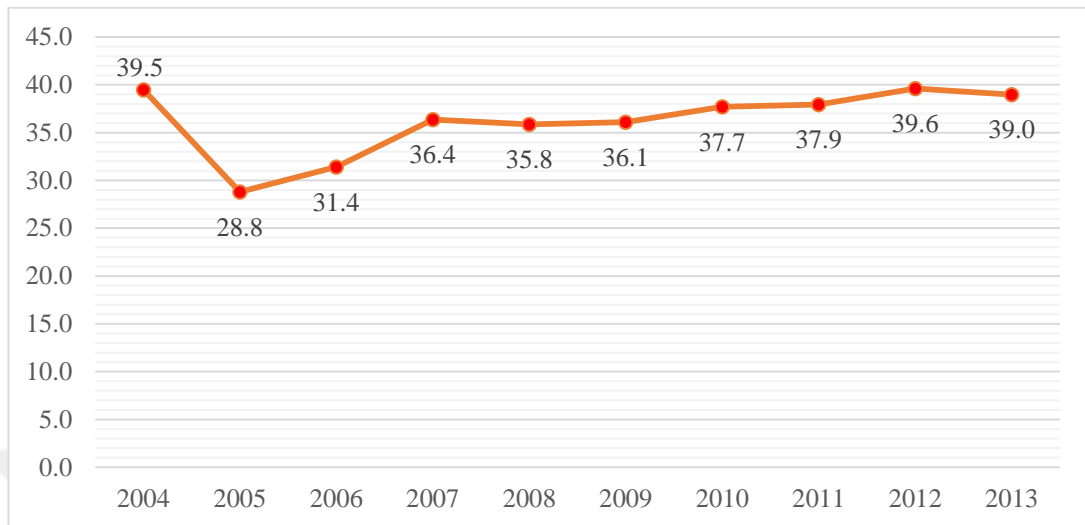


Source: WHO, 2014

5.1.3. The Share of Public Expenditures of Total Health Expenditure

As mentioned earlier, public share on total health expenditure had been always less than private. Nevertheless, the amount continued to increase gradually, albeit still lower than it spent in 2004 (Figure 5.9).

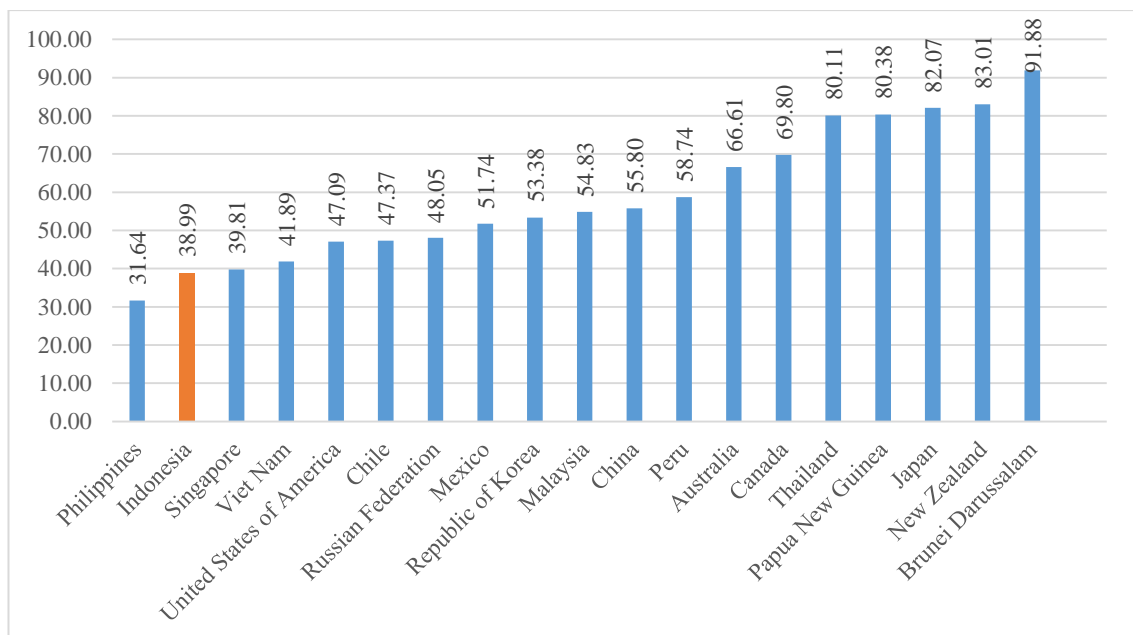
Figure 5.9 The Share of Public Expenditures of Total Health Expenditure in Indonesia (%)



Source: WHO, 2014

Among APEC countries, Philippines government spent lowest for their health expenditure, followed by Indonesia. Brunei Darussalam whose population is the smallest, had the highest amount of public expenditure shared for health sector (Figure 5.10).

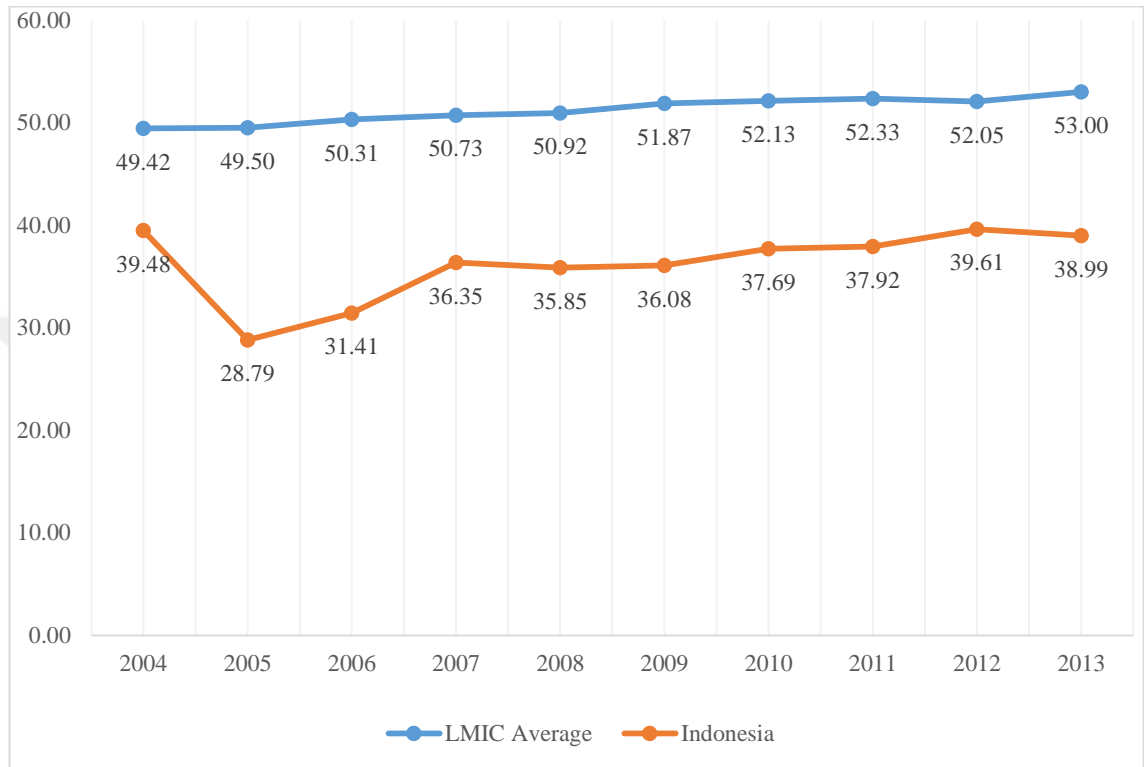
Figure 5.10 The Share of Public Expenditure of Total Health Expenditure among APEC Members, 2013 (%)



Source: WHO, 2014

Compared to lower middle income countries average, Indonesian public expenditure had always been lower in these past ten years (Figure 5.11).

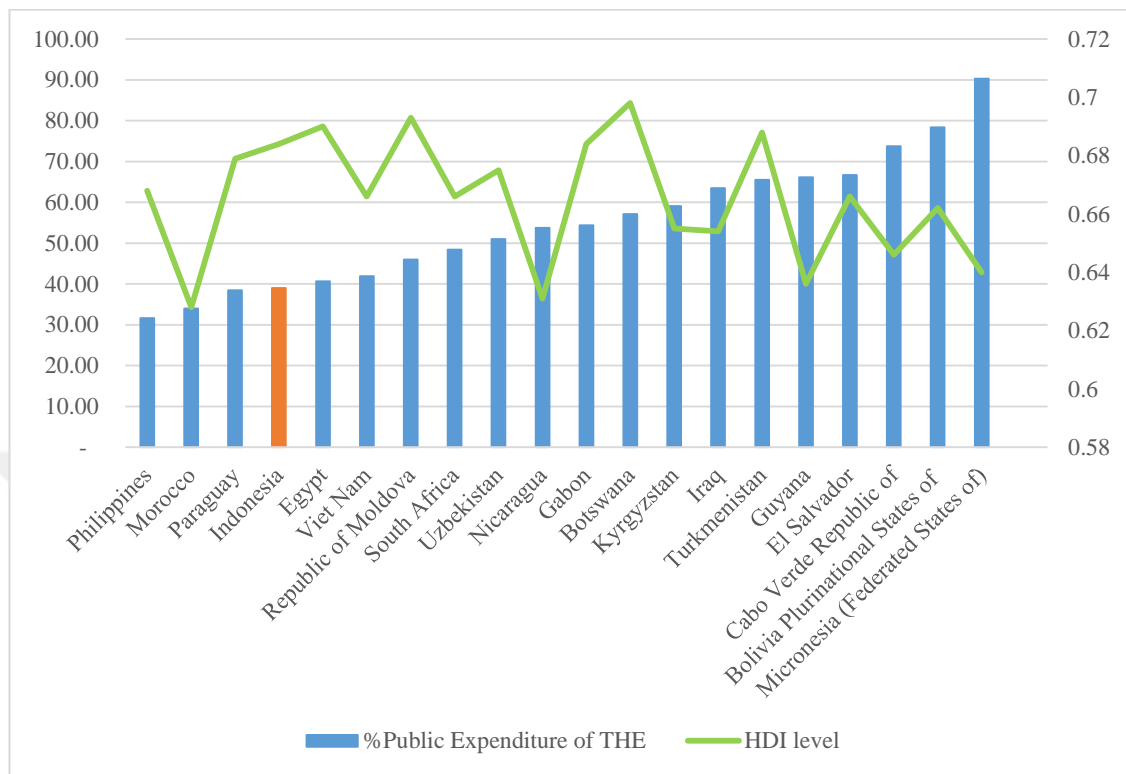
Figure 5.11 The Share of Public Expenditure of Total Health Expenditure in Indonesia and LMIC average (%)



Source: WHO, 2014

The share of public expenditure on health among medium HDI level countries is presented in Figure 5.12. Indonesia was one of four countries whose public share were below 40% of total health expenditure. Green line shows the level of HDI each countries have. There were no correlation between HDI level and the amount of public health-expenditure as the share of total health expenditure.

Figure 5.12 The Share of Public Expenditure of Total Health Expenditure in Indonesia and Other Countries with Similar HDI, 2013 (%)

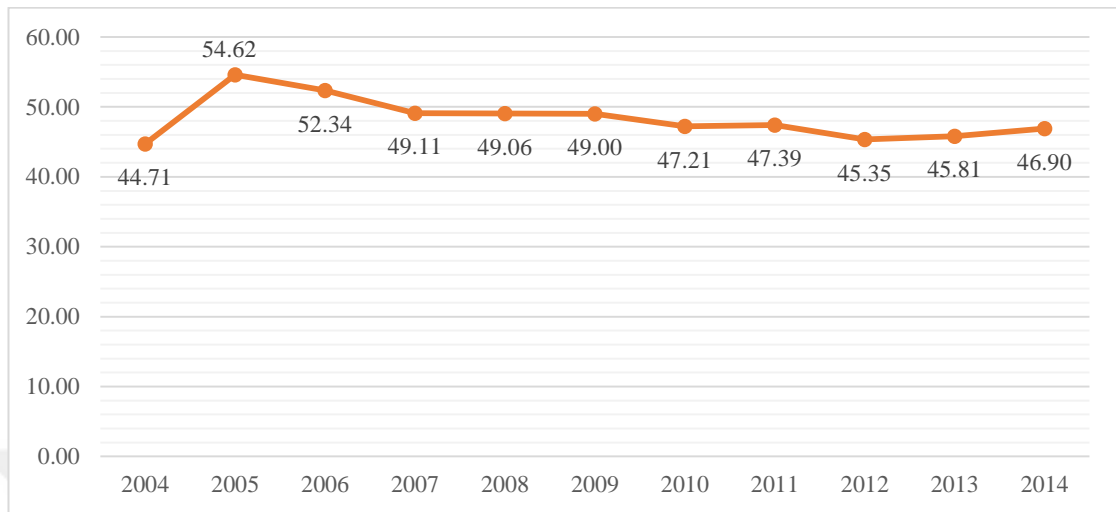


Source: WHO, 2014

5.1.4. Out-of-Pocket Health Expenditures

As would be expected from country whose public expenditure was low, vast out-of-pocket payment became undeniable. Despite the relatively decreasing trend, Indonesia's out-of-pocket health expenditures were categorized high. They never went below 44% and reached more than 50% two times: in 2005 and 2006 (Figure 5.13).

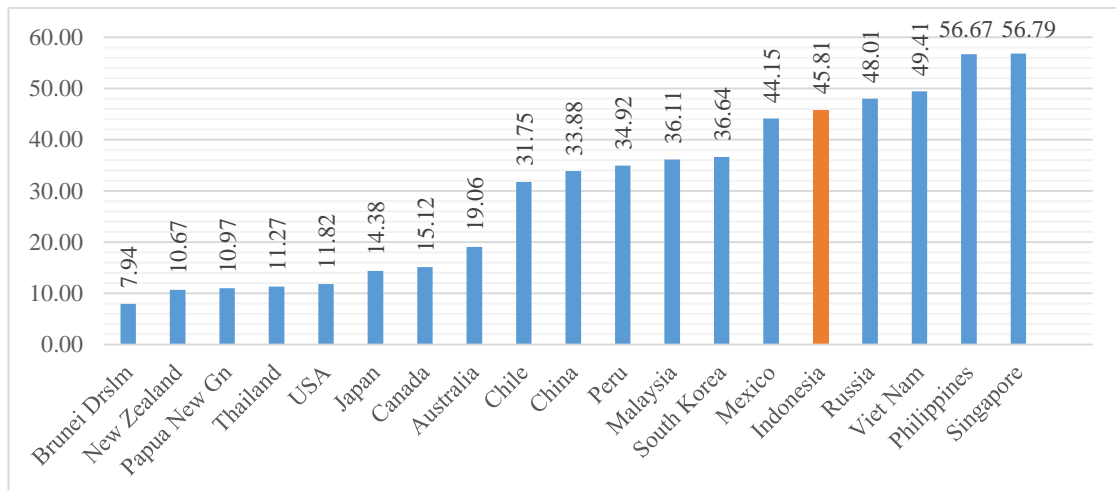
Figure 5.13 The Share of Out-of-Pocket Payments of Total Health Expenditures in Indonesia 2004-2013 (%)



Source: WHO, 2014

High share of Indonesia out-of-pocket expenditure was exhibited in Figure 5.14 as it placed the upper fifth among APEC members.

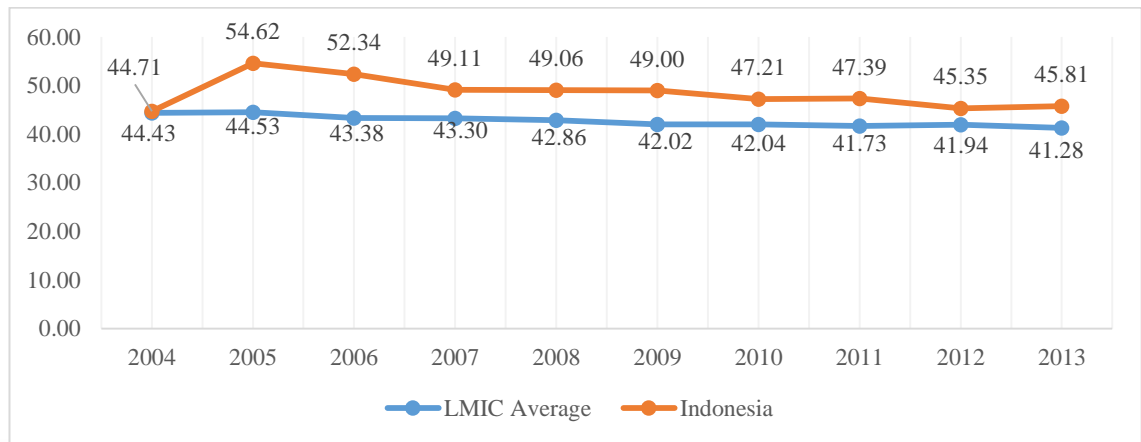
Figure 5.14 The Share of Out-of-Pocket Payments of Total Health Expenditures in Indonesia and APEC, 2013 (%)



Source: WHO, 2014

As presented in Figure 5.15, lower middle income countries tend to have high out-of-pocket health expenditure. Average had pass the 20% limit suggested by 2010 World Health Report (WHO, 2010: 42). Still and all, compared to LMIC average, direct outlays of households to health in Indonesia had always been higher during 2004-2013.

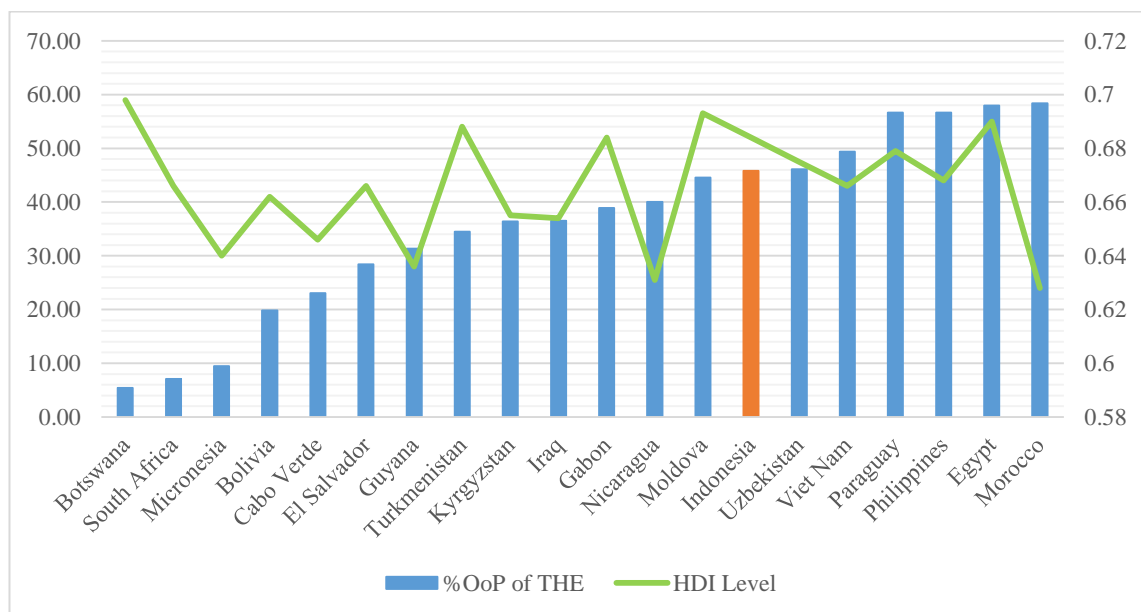
Figure 5.15 The Share of Out-of-Pocket Payments of Total Health Expenditures in Indonesia and LMIC average (%)



Source: WHO, 2014

Nine countries with medium level of HDI were exceed the World Health Report 40% limit out-of-pocket payment including Indonesia. Indonesia placed seventh among the highest spender of out-of-pocket expenditure though its HDI was one of the highest. It reflects no correlation between HDI level and out-of-pocket expenditure share of total health expenditure (Figure 5.16)

Figure 5.16 The Share of Out-of-Pocket Payments of Total Health Expenditures in Indonesia and similar HDI countries, 2013 (%)



Source: WHO, 2014

5.2. GENERAL DESCRIPTIVE RESULTS OF VALUE FOR MONEY OF INDONESIAN HEALTHCARE SYSTEM

Measuring value of the resources had been spent is not an easy task. There are number of aspects need to be considered such as what output is valued, input, possible external constraints, and what time horizon should be adopted (Smith, 2009: 8). After all these considerations, the result even could not been stated as the most right answer as it depends on the perspective adopted, for example, citizens' view might different from those of economist's or health personnel's (Tatar and Çelik, 2013: 42).

This study inquiries the extent to which Indonesia got back the money allocated to health sector by comparing its health expenditures relative to the improvements of health status indicators with benchmark countries'. The health status indicators used in this study were (1) Life expectancy at birth; (2) Probability of dying under age five years (under-five mortality rate) per 1000 live births; (3) Infant Mortality Rate per 1000 live births; (4) Maternal Mortality Ratio per 100 000 live births.

5.2.1. Health Expenditure and Health Status Improvements: Indonesia and Selected APEC Countries

Data on Indonesia and selected APEC countries' health expenditure growth and health indicators are obtained from WHO and World Bank.

5.2.1.1. Health Expenditure Growth

Gains of per capita health expenditure of Indonesia and selected APEC countries in terms of purchasing power parity, share of health expenditure in GDP and share of out-of-pocket payments for health in total health expenditure are compared in the Figures 5.18, 5.19, and 5.20.

Although all of these Asian countries placed far away below Australia and The United States' amount of per capita health expenditure, Indonesia had spent the lowest among these selected APEC countries (Table 5.2). China took a lead as the fastest growing per capita health expenditure with growth rate 214.42% in this past ten years (Figure 5.17). Far below, it's followed by Indonesia and Thailand at the similar rate. All selected

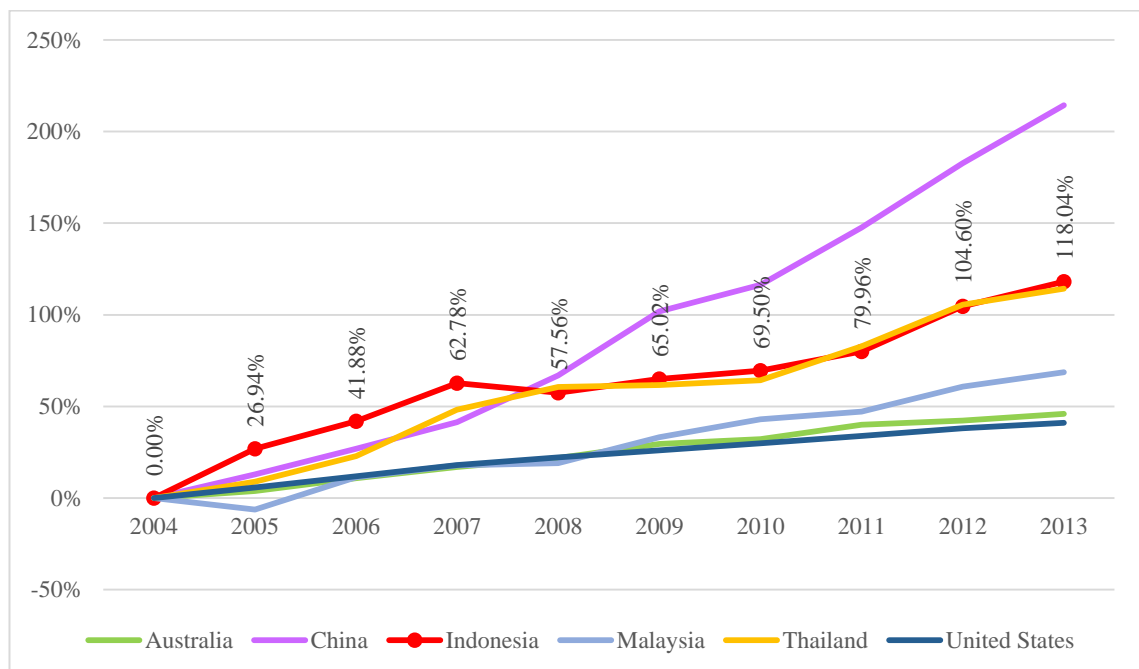
countries showed an increasing trend albeit Australia and The United States, as the greatest spenders in per capita health expenditure, had lower rates.

Table 5. 2 The Growth in Per Capita Health Expenditure of Indonesia and Selected APEC Countries, PPP

Years	Australia	China	Indonesia	Malaysia	Thailand	United States
2004	2,918	208	134	561	412	6,369
2005	3,031	235	170	526	449	6,741
2006	3,235	264	190	625	506	7,122
2007	3,413	294	218	661	611	7,512
2008	3,555	347	211	668	662	7,786
2009	3,782	420	221	747	666	8,023
2010	3,858	450	227	802	677	8,269
2011	4,086	515	241	826	753	8,524
2012	4,152	588	274	902	847	8,790
2013	4,259	654	292	946	883	8,988

Source: WHO, 2014

Figure 5.17 The Rate of Change in Per Capita Health Expenditure of Indonesia and Selected APEC Countries, PPP, (Base Year: 2004)



Source: WHO, 2014

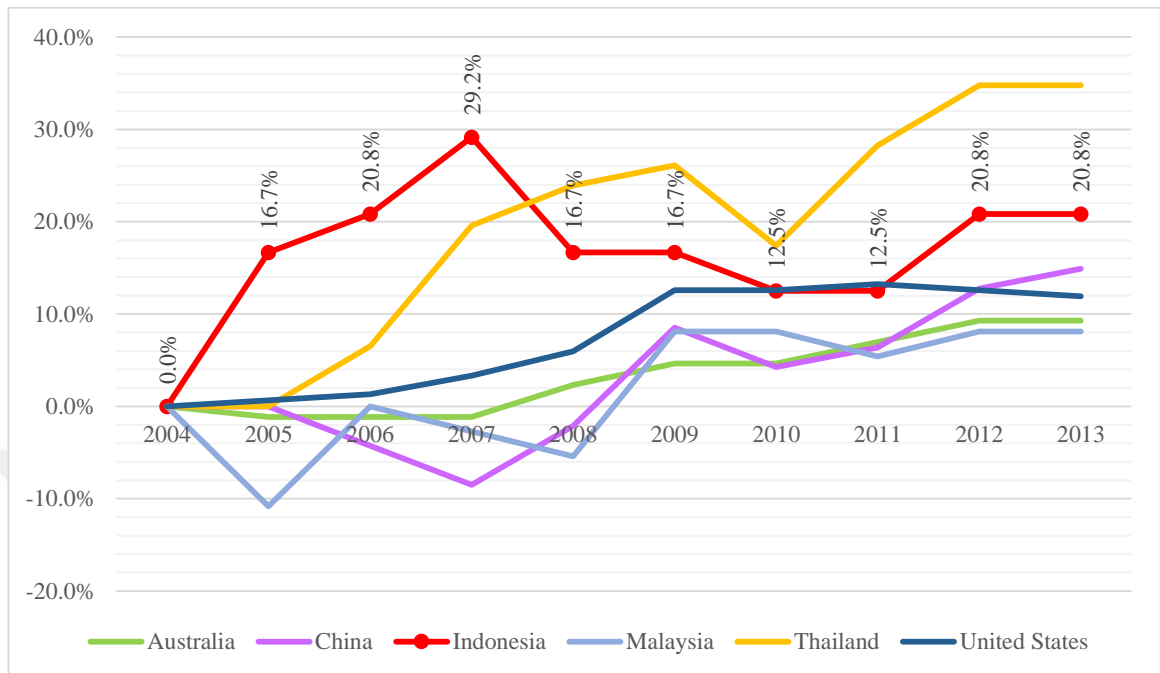
Indonesia had the lowest total health expenditure shared from GDP over the past ten years, ranged from 2.4 – 3.1 %. The highest share (3.1) was reached in 2007 and had never been higher in the following years (Table 5.3). The gain increased nearly 30% of its GDP share into health sector in 2007 but the decreasing trend followed after and had not been higher than 21% until the last year before JKN had been commenced (Figure 5.18). Thailand shared the highest portion of its GDP with an increasing trend. It reached 34.8% in 2013. At low rate of change, China and Malaysia showed fluctuate trend, whilst The United States and Australia had more stable increasing trend.

Table 5.3 The Growth in Total Health Expenditure of Indonesia and Selected APEC Countries, % of Gross Domestic Product

Years	Australia	China	Indonesia	Malaysia	Thailand	United States
2004	8.6	4.7	2.4	3.7	4.6	15.1
2005	8.5	4.7	2.8	3.3	4.6	15.2
2006	8.5	4.5	2.9	3.7	4.9	15.3
2007	8.5	4.3	3.1	3.6	5.5	15.6
2008	8.8	4.6	2.8	3.5	5.7	16.0
2009	9.0	5.1	2.8	4.0	5.8	17.0
2010	9.0	4.9	2.7	4.0	5.4	17.0
2011	9.2	5.0	2.7	3.9	5.9	17.1
2012	9.4	5.3	2.9	4.0	6.2	17.0
2013	9.4	5.4	2.9	4.0	6.2	16.9

Source: WHO, 20

Figure 5.18 The Rate of Change in Per Capita Health Expenditure of Indonesia and Selected APEC Countries, % of Gross Domestic Product, (Base Year: 2004)



Source: WHO, 2014

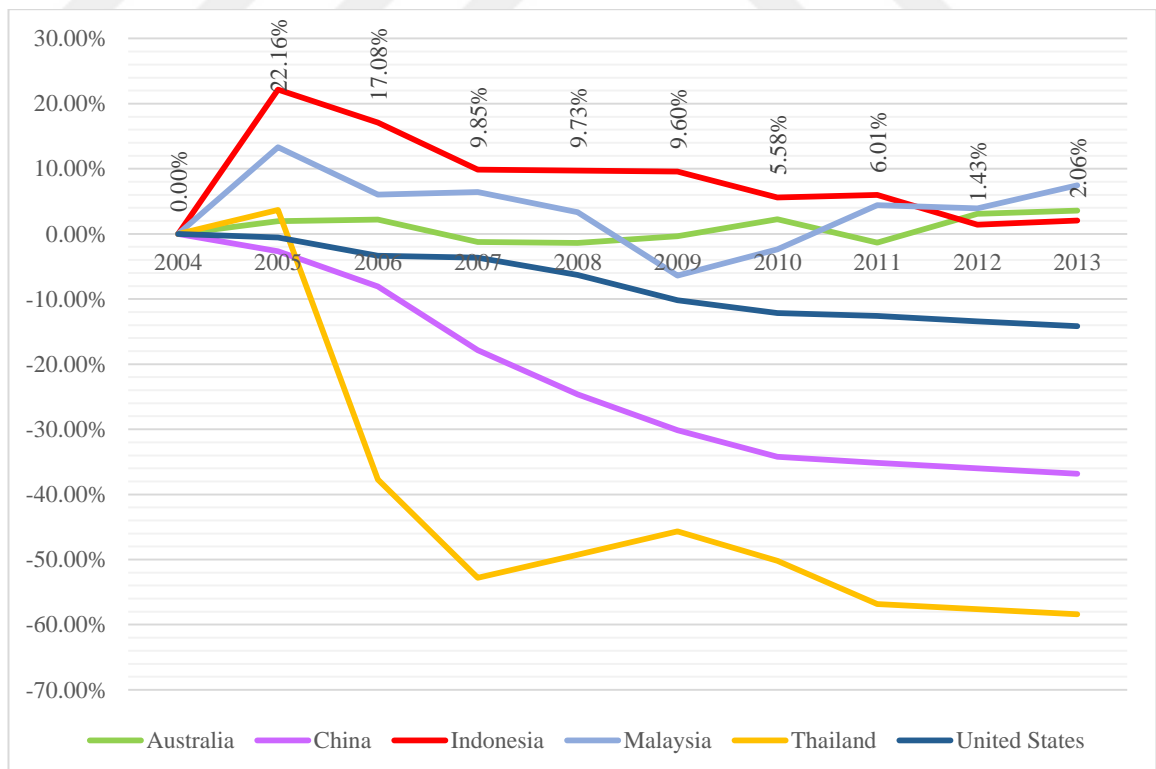
Catastrophic health spending can occur to all countries regardless their stage of development. Nevertheless, countries with lower out-of-pocket payments offer better protection for the poor against catastrophic expenditure (Xu, et al., 2005: 3). Table 5.4 shows that in spite of its decreasing trend, Indonesia was still the highest spender of out-of-pocket payments among these selected APEC countries. It dragged Indonesia as the only country with out-of-pocket payments greater than 40% which is concluded as catastrophic health expenditure according to WHO (Xu, et al., 2005: 2). After steeply climbing up with 22.16% in 2005, the number were getting lower in the following years. However, they were still higher than out of pocket amount in 2004. Whereas, among these countries, Thailand succeeded to minimize their out-of-pocket spending until 58.41% in 2013 (Figure 5.19). The amount even became the lowest with 8.3% of total health expenditure.

Table 5.4 the Growth in Out-Of-Pocket Payments for Health of Indonesia and Selected APEC Countries, % Total Health Expenditure

Years	Australia	China	Indonesia	Malaysia	Thailand	United States
2004	18.2	53.6	44.7	33.6	20.1	13.4
2005	18.5	52.2	54.6	38.1	20.8	13.3
2006	18.6	49.3	52.3	35.6	12.5	12.9
2007	18.0	44.1	49.1	35.8	9.5	12.9
2008	17.9	40.4	49.1	34.7	10.2	12.5
2009	18.1	37.5	49.0	31.5	10.9	12.0
2010	18.6	35.3	47.2	32.8	10.0	11.8
2011	17.9	34.8	47.4	35.1	8.7	11.7
2012	18.7	34.3	45.3	34.9	8.5	11.6
2013	18.8	33.9	45.6	36.1	8.3	11.5

Source: WHO, 2014

Figure 5.19 the Rate of Change in Out-Of-Pocket Payments for Health of Indonesia and Selected APEC Countries, % Total Expenditure on Health (Base Year: 2004)



Source: WHO, 2014

5.2.1.2 Improvements in Health Status Indicators

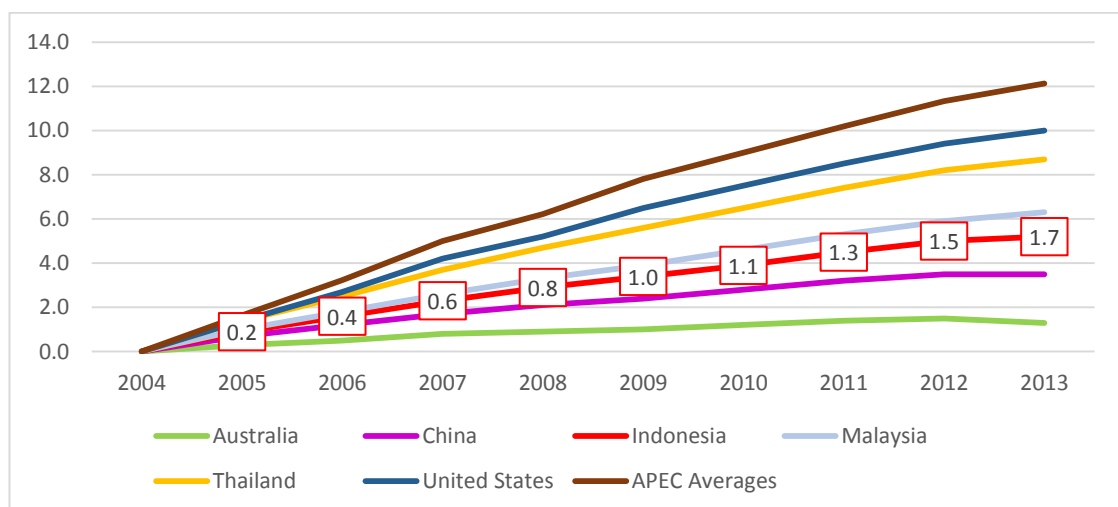
In 2013, each newborn in Indonesia had opportunity to life 1.7 year longer than it had in 2004 (Figure 5.20). Though Australia had the longest life expectancy, Thailand added more number of years to their life expectancy between 2004 and 2013 with 74.2 years from 71.8 (Table 5.5).

Table 5.5 The Growth in Life Expectancy at Birth in Indonesia and Selected APEC Countries between 2004 and 2013 (year)

Years	Australia	China	Indonesia	Malaysia	Thailand	United States	APEC Averages
2004	80.5	73.4	67.0	73.5	71.8	77.5	74.3
2005	80.8	73.8	67.2	73.6	72.2	77.5	74.5
2006	81.0	74.1	67.4	73.7	72.5	77.7	74.8
2007	81.3	74.3	67.6	73.8	72.9	78.0	75.1
2008	81.4	74.6	67.8	73.9	73.2	78.0	75.3
2009	81.5	74.8	68.0	74.0	73.5	78.4	75.6
2010	81.7	75.0	68.1	74.2	73.7	78.5	75.8
2011	81.9	75.2	68.3	74.3	73.9	78.6	76.0
2012	82.0	75.4	68.5	74.4	74.1	78.7	76.2
2013	82.1	75.6	68.7	74.6	74.2	78.8	76.4

Source: World Bank, 2016

Figure 5.20 Gains in Life Expectancy at Birth in Indonesia and Selected APEC Countries between 2004 and 2013, year (Base Year: 2004)



Source: World Bank, 2016

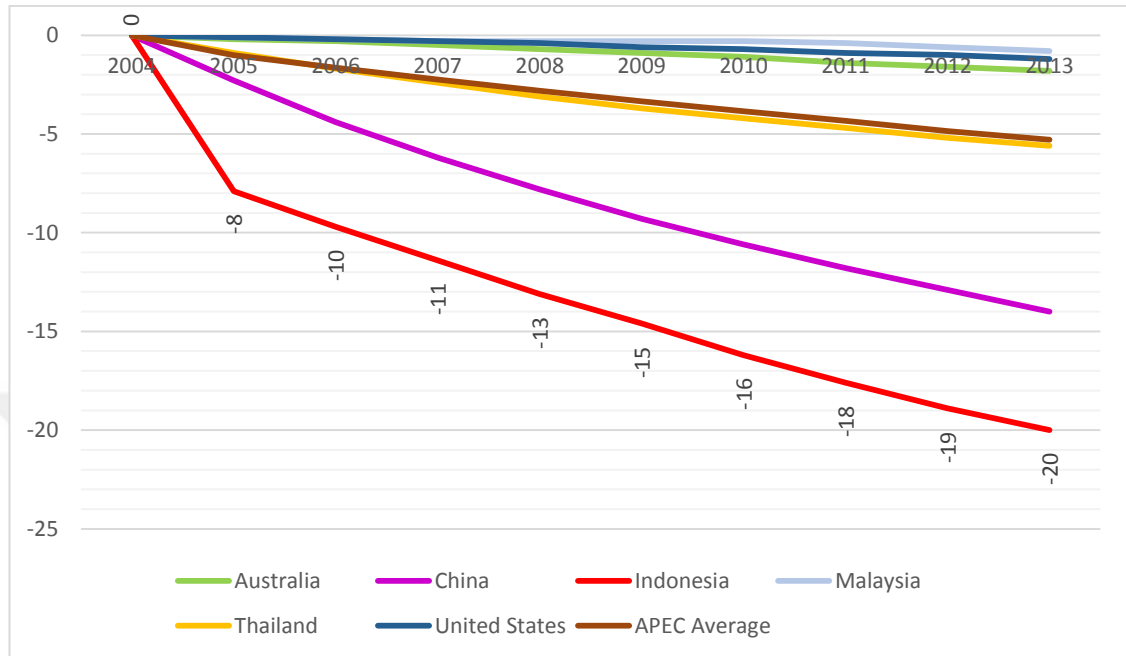
Indonesia had most enormous number of under-five mortality rate with average over 36 dying per 1000 live births per year, much higher than APEC average (16.5 deaths). However Indonesia decreased its number quite progressively up to 29.3 from 49.3 deaths in ten years followed by China with 14 death decrements (Figure 5.21). Australia, Malaysia and United States had steady number ranged between 4.1 to 8.1 deaths per year, and never went beyond 10 deaths since 2004 (Table 5.6)

Table 5.6 The Growth in Probability of Dying under Age Five Years (Under-Five Mortality Rate) per 1000 Live Births in Indonesia and Selected APEC Countries between 2004 and 2013, death

Years	Australia	China	Indonesia	Malaysia	Thailand	United States	APEC Average
2004	5.9	26.3	49.3	8.3	18.7	8.1	19.4
2005	5.7	24	41.4	8.2	17.8	8	18.4
2006	5.6	21.9	39.6	8.1	17	7.9	17.8
2007	5.4	20.1	37.9	8	16.3	7.8	17.2
2008	5.2	18.5	36.2	8	15.6	7.7	16.6
2009	5	17	34.7	8	15	7.5	16.1
2010	4.8	15.7	33.1	8	14.5	7.4	15.6
2011	4.5	14.5	31.7	7.9	14	7.2	15.1
2012	4.3	13.4	30.4	7.7	13.5	7.1	14.6
2013	4.1	12.3	29.3	7.5	13.1	6.9	14.1

Source: World Bank, 2016

Figure 5.21 Gains in Probability of Dying under Age Five Years (Under-Five Mortality Rate) per 1000 Live Births in Indonesia and Selected APEC Countries between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

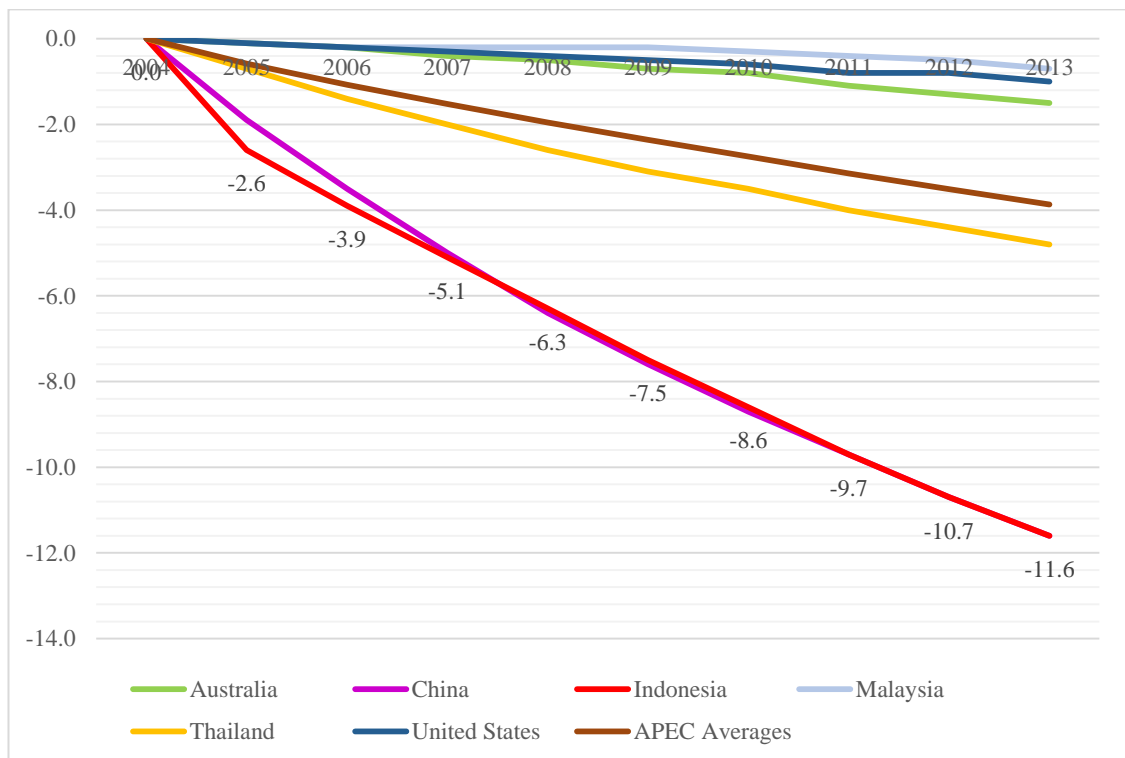
The pattern of infant mortality rates was similar with the pattern of under-five mortality rate, as the ranks were in the same sequence and Indonesia had the highest number with over 24 deaths per 1000 live births in all studied years (Table 5.7). Yet it had steepest decrement with the same amount as China (11.6 deaths), whereas Malaysia gained the smallest with -0.7 (Figure 5.22). Australia succeeded hold minimal rate with no more than 5 infant deaths since 2004.

Table 5.7 The Growth in Infant Mortality Rate per 1000 Live Birth in Indonesia and Selected APEC Countries between 2004 and 2013, death

Years	Australia	China	Indonesia	Malaysia	Thailand	United States	APEC Averages
2004	4.9	22.2	36	7.1	16	6.9	15.4
2005	4.8	20.3	33.4	7	15.3	6.8	14.8
2006	4.7	18.7	32.1	6.9	14.6	6.7	14.3
2007	4.5	17.2	30.9	6.9	14	6.6	13.9
2008	4.4	15.8	29.7	6.9	13.4	6.5	13.4
2009	4.2	14.6	28.5	6.9	12.9	6.4	13.0
2010	4.1	13.5	27.4	6.8	12.5	6.3	12.6
2011	3.8	12.5	26.3	6.7	12	6.1	12.2
2012	3.6	11.5	25.3	6.6	11.6	6.1	11.9
2013	3.4	10.6	24.4	6.4	11.2	5.9	11.5

Source: World Bank, 2016

Figure 5.22 Gains in Infant Mortality Rate per 1000 Live Birth in Indonesia and Selected APEC Countries between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

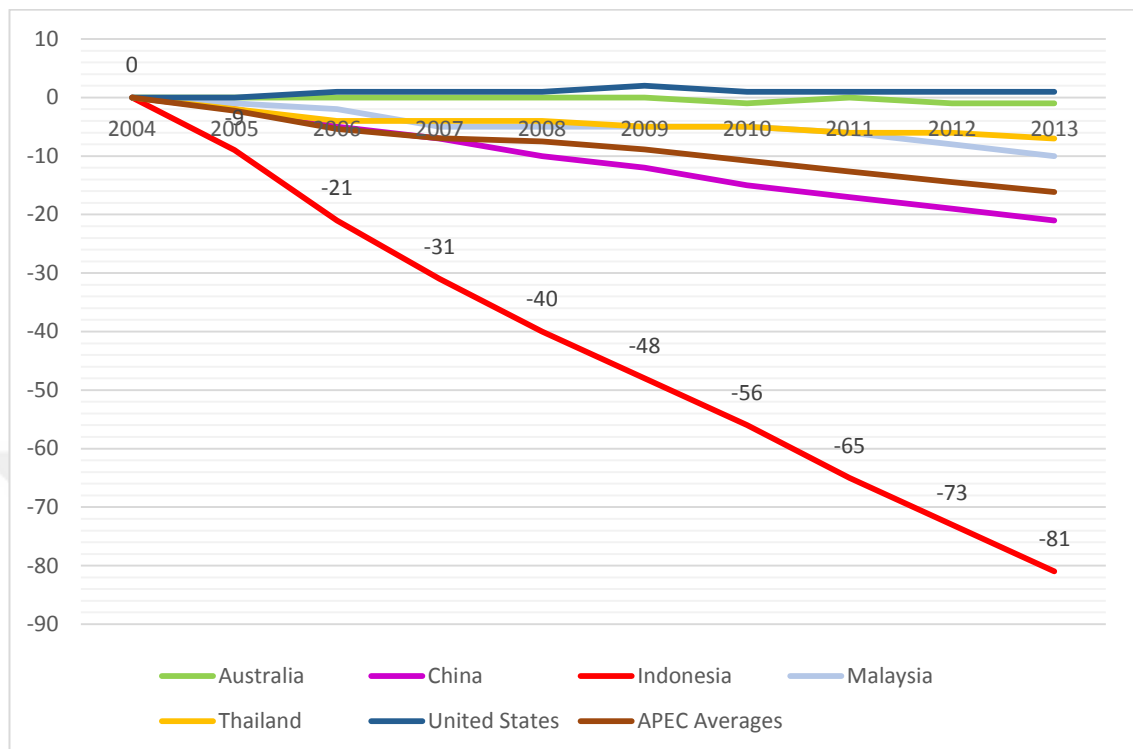
In 2004 there were 221 Indonesian women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births. The number then decrease to 140 deaths in ten years, still below 50% of its number in 2004 and much higher than APEC averages. Other selected APEC countries' had never gone beyond 50 deaths since 2007 (Table 5.8). As would be expected from a country with enormous number of death, it reached the steepest decrement with -81 death in ten years (Figure 5.23)

Table 5.8 The Growth in Maternal Mortality Ratio per 100,000 Live Births in Indonesia and Selected APEC Countries between 2005 and 2013, death

Years	Australia	China	Indonesia	Malaysia	Thailand	United States	APEC Averages
2004	7	50	221	53	28	13	62.8
2005	7	48	212	52	26	13	60.5
2006	7	45	200	51	24	14	57.4
2007	7	43	190	48	24	14	55.8
2008	7	40	181	48	24	14	55.3
2009	7	38	173	48	23	15	53.9
2010	6	35	165	48	23	14	52.0
2011	7	33	156	47	22	14	50.2
2012	6	31	148	45	22	14	48.3
2013	6	29	140	43	21	14	46.6

Source: World Bank, 2016

Figure 5.23 Gains in Maternal Mortality Ratio per 100,000 Live Births in Indonesia and Selected APEC Countries between 2005 and 2013, death (Base Year: 2005)



Source: World Bank, 2016

5.2.2. Health Expenditure and Health Status Improvements: Indonesia and Selected Lower Middle Income Countries.

Data on Indonesia and selected LMI countries' health expenditure growth and health indicators are obtained from WHO and World Bank.

5.2.2.1 Health Expenditure Growth

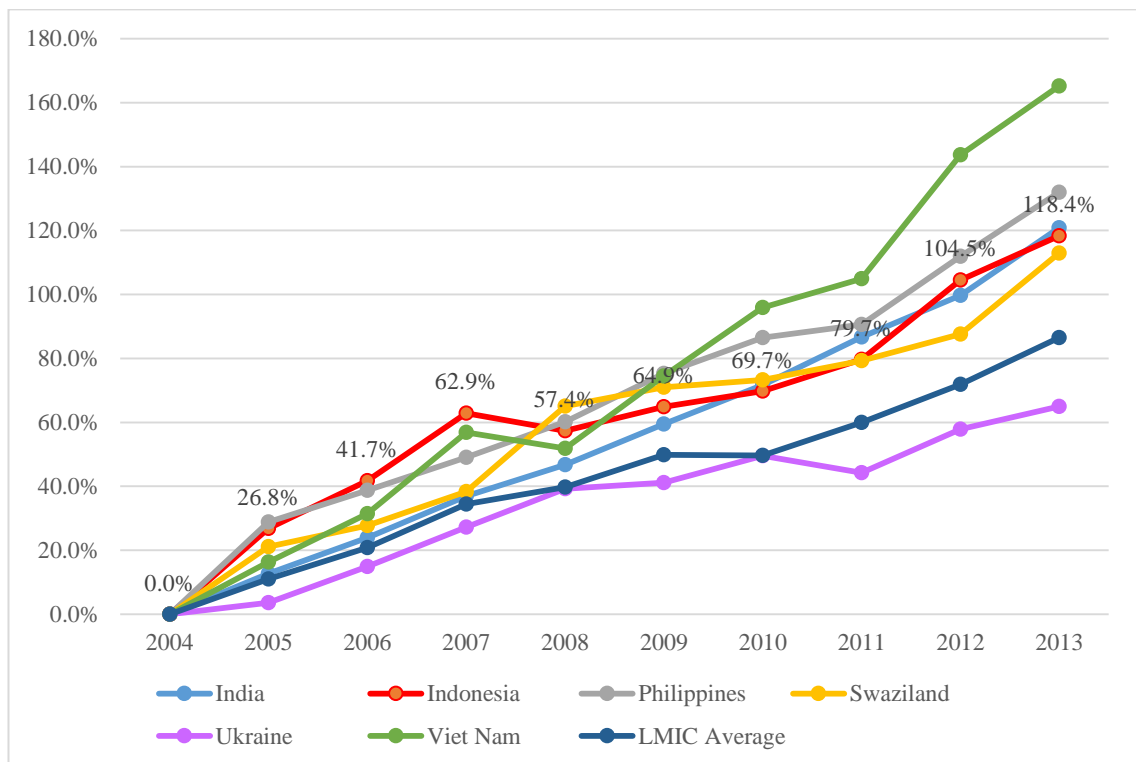
India and Indonesia's per capita health expenditure were the lowest among comparator countries, though Indonesia was still slightly above LMIC average since 2005 (table 5.9). The two countries also had the similar rate of change with 120.8% and 118.4%, respectively, between 2004 and 2013 (Figure 5.24). Viet Nam took a lead with 165.2% increment in ten years.

Table 5.9 The Growth in Per Capita Health Expenditure of Indonesia and Selected Lower Middle Income Countries, PPP

Years	India	Indonesia	Philippines	Swaziland	Ukraine	Viet Nam	LMIC Average
2004	108.7	133.9	129.5	280.8	403.1	140.4	135.84
2005	122.5	169.9	166.8	340.1	417.4	163.2	150.82
2006	134.7	189.8	179.7	358.5	463.2	184.5	164.1
2007	148.9	218.2	193.1	388.4	512.9	220.2	182.56
2008	159.6	210.8	207.5	463.5	561.2	213.3	189.78
2009	173.4	220.8	227.0	480.2	568.8	245.0	203.49
2010	186.7	227.3	241.6	486.4	603.0	275.1	203.32
2011	203.0	240.7	246.8	503.4	581.3	287.7	217.26
2012	217.2	273.8	274.5	526.6	636.4	342.2	233.47
2013	240.1	292.4	300.4	597.9	665.1	372.4	253.3

Source: WHO, 2014

Figure 5.24 The Rate of Change in Per Capita Health Expenditure of Indonesia and Selected LMI Countries, PPP, (Base Year: 2004)



Source: WHO, 2014

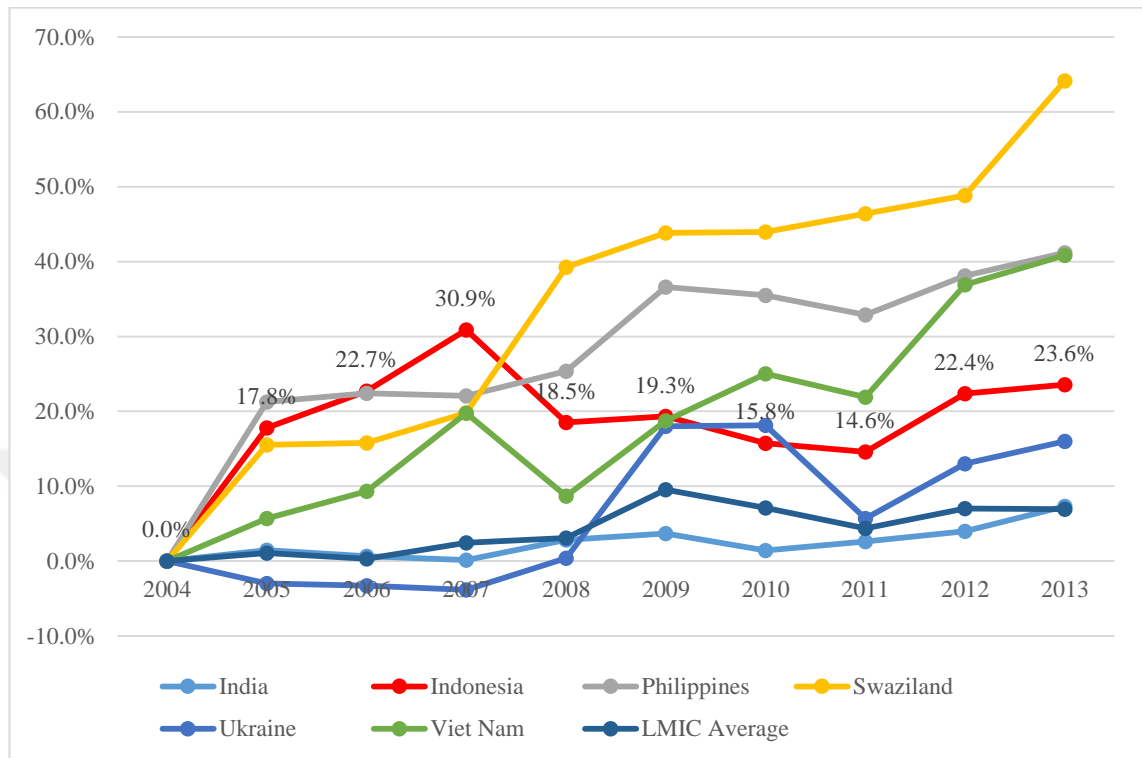
Indonesia never shared their GDP for health more than 3.1% since 2007. The number remained the lowest among these comparator countries and still below the average of lower middle income countries' (Table 5.10). Its increment was also a piecemeal with only 23.6% higher than ten years before (Figure 5.25). Swaziland stood out among these selected LMI countries as they increased their share up to 64.1% from 5.9% in 2004 to 9.7% in 2013.

Table 5.10 The Growth in Total Health Expenditure of Indonesia and Selected LMI Countries, % of Gross Domestic Product

Years	India	Indonesia	Philippines	Swaziland	Ukraine	Viet Nam	LMIC Average
2004	4.2	2.4	3.2	5.9	6.6	5.1	5.4
2005	4.3	2.8	3.9	6.8	6.4	5.4	5.5
2006	4.2	2.9	4.0	6.8	6.4	5.6	5.4
2007	4.2	3.1	3.9	7.0	6.4	6.1	5.5
2008	4.3	2.8	4.0	8.2	6.6	5.5	5.6
2009	4.4	2.8	4.4	8.5	7.8	6.0	5.9
2010	4.3	2.7	4.4	8.5	7.8	6.4	5.8
2011	4.3	2.7	4.3	8.6	7.0	6.2	5.6
2012	4.4	2.9	4.5	8.8	7.5	7.0	5.8
2013	4.5	2.9	4.6	9.7	7.7	7.2	5.8

Source: WHO, 2014

Figure 5.25 The Rate of Change in Total Health Expenditure of Indonesia and Selected LMI Countries, % of Gross Domestic Product, (Base Year: 2004)



Source: WHO, 2014

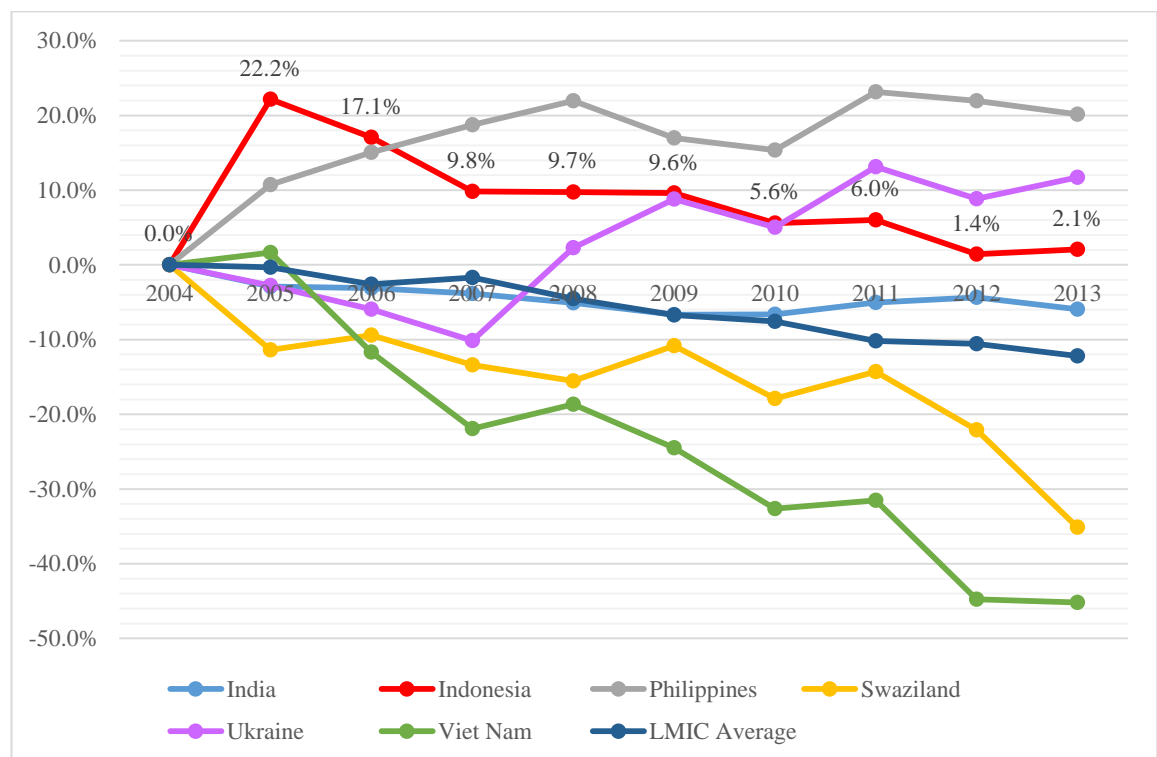
Until 2010, lower middle income countries average tended to have out-of-pocket payments more than 40% (table 5.11). Indonesia had even never gone below 44% until 2013. Instead of decreasing, Indonesian was likely to spend 2.1% more direct outlay of their households for health (Figure 5.26). Philippines and Ukraine seemed to have similar pattern while others as well as LMIC in average had a decreasing trend. Viet Nam succeeded to push their out of pocket payment down to 45.2% in past ten years.

Table 5.11 The Growth in Out-Of-Pocket Payments for Health of Indonesia and Selected LMI Countries, % Total Health Expenditure

Years	India	Indonesia	Philippines	Swaziland	Ukraine	Viet Nam	LMIC Average
2004	67.9	44.7	46.9	15.4	38.6	66.5	44.1
2005	65.9	54.6	51.9	13.7	37.5	67.6	43.9
2006	65.7	52.3	54.0	14.0	36.3	58.8	42.9
2007	65.3	49.1	55.7	13.4	34.7	52.0	43.3
2008	64.4	49.1	57.2	13.0	39.4	54.1	42.1
2009	63.3	49.0	54.9	13.8	42.0	50.2	41.1
2010	63.4	47.2	54.1	12.7	40.5	44.8	40.7
2011	64.4	47.4	57.7	13.2	43.6	45.6	39.6
2012	64.9	45.3	57.2	12.0	42.0	36.8	39.4
2013	63.8	45.6	56.3	10.0	43.1	36.5	38.7

Source: WHO, 2014

Figure 5.26 The Rate of Change in Out-Of-Pocket Payments for Health of Indonesia and Selected LMI Countries, % Total Health Expenditure (Base Year: 2004)



Source: WHO, 2014

5.2.2.2 Improvements in Health Status Indicators

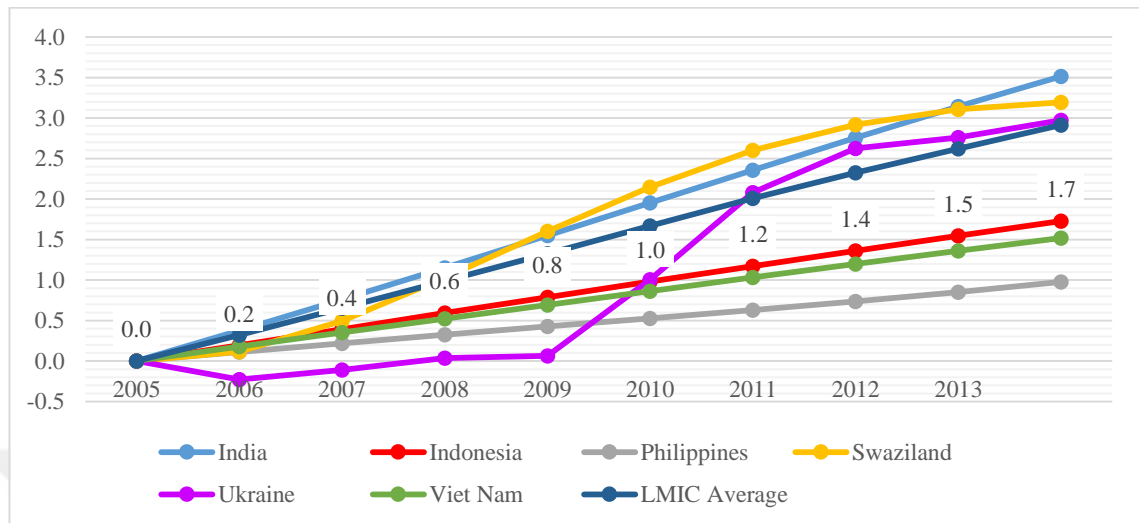
Table 5.12 informs that very new-born in Indonesia in 2013 was expected to live up to 68.7 years, 1.7 years longer than it had in 2004. With these numbers, Indonesians were still expected to live longer than average people in lower middle income countries. Swaziland had the shortest live expectancy with 48.9 years. Together with Ukraine and India, Swaziland gained additional 3 years in that past 10 years (Figure 5.27).

Table 5.12 The Growth in Life Expectancy at Birth in Indonesia and Selected LMI Countries between 2005 and 2013, year

Years	India	Indonesia	Philippines	Swaziland	Ukraine	Viet Nam	LMIC Average
2004	64.1	67.0	67.2	45.7	68.2	74.0	64.1
2005	64.5	67.2	67.3	45.9	68.0	74.1	64.4
2006	64.9	67.4	67.4	46.2	68.1	74.3	64.7
2007	65.3	67.6	67.5	46.8	68.2	74.5	65.1
2008	65.7	67.8	67.6	47.3	68.3	74.7	65.4
2009	66.1	68.0	67.7	47.9	69.2	74.8	65.7
2010	66.5	68.1	67.8	48.3	70.3	75.0	66.1
2011	66.9	68.3	67.9	48.7	70.8	75.2	66.4
2012	67.3	68.5	68.0	48.9	70.9	75.3	66.7
2013	67.7	68.7	68.1	48.9	71.2	75.5	67.0

Source: World Bank, 201

Figure 5.27 Gains in Life Expectancy at Birth in Indonesia and Selected LMI Countries between 2005 and 2013, year (Base Year: 2004)



Source: World Bank, 2016

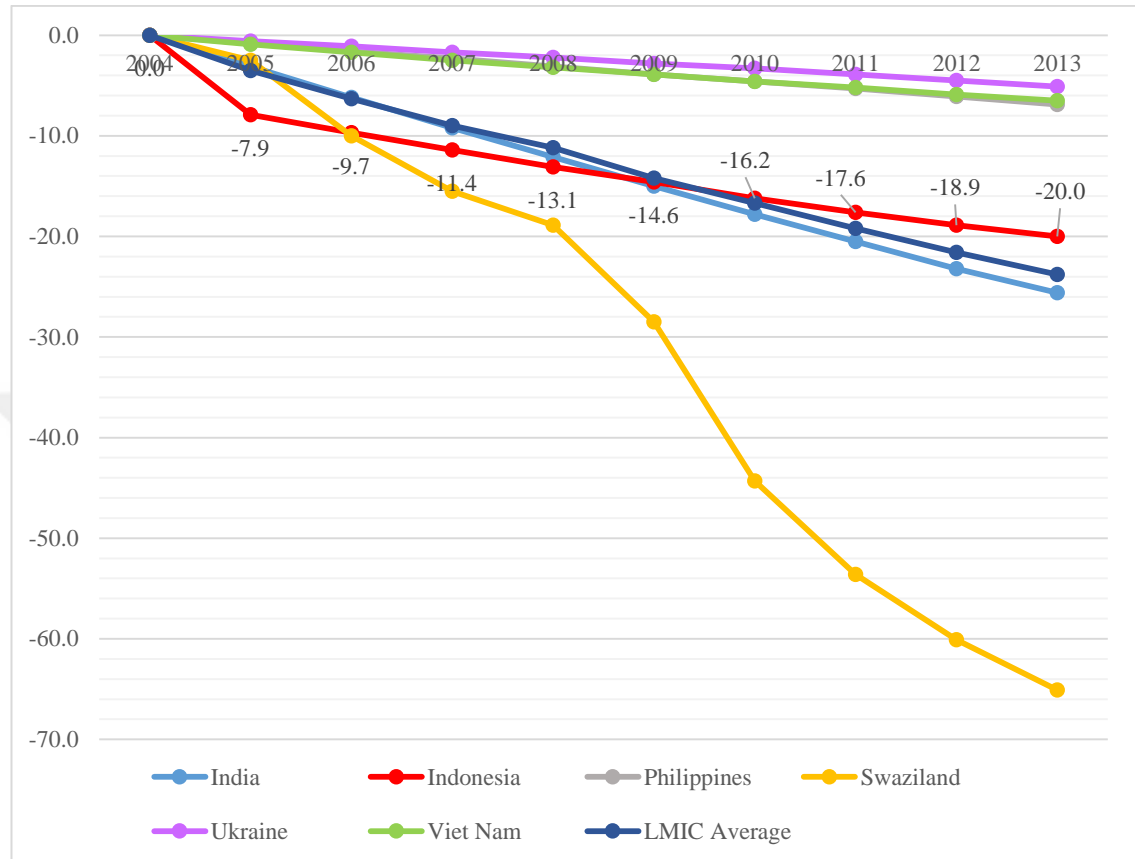
The number of dying under age five years in Indonesia had decreased from 49.3 to 29.3, almost half of LMIC average, between 2004 and 2013 (Table 5.13). Swaziland had the highest number of under-five mortality rate among the comparator countries yet the rate decline fastest, 65.1 decrement in past ten years (Figure 5.28).

Table 5.13 The Growth in Under-Five Mortality Rate per 1000 Live Births in Indonesia and Selected LMI Countries between 2004 and 2013, death

Years	India	Indonesia	Philippines	Swaziland	Ukraine	Viet Nam	LMIC Average
2004	77.7	49.3	36.5	132.7	15.1	29.4	80.6
2005	74.6	41.4	35.7	130.2	14.5	28.5	77.1
2006	71.5	39.6	34.9	122.7	14	27.7	74.3
2007	68.5	37.9	34.2	117.2	13.4	26.9	71.6
2008	65.6	36.2	33.4	113.8	12.9	26.2	69.4
2009	62.7	34.7	32.6	104.2	12.3	25.5	66.4
2010	59.9	33.1	31.9	88.4	11.8	24.8	63.9
2011	57.2	31.7	31.2	79.1	11.2	24.2	61.4
2012	54.5	30.4	30.4	72.6	10.6	23.5	59
2013	52.1	29.3	29.6	67.6	10	22.9	56.8

Source: World Bank, 2016

Figure 5.28 Gains in Probability of Dying under Age Five Years (Under-Five Mortality Rate) per 1000 Live Births in Indonesia and Selected LMI Countries between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

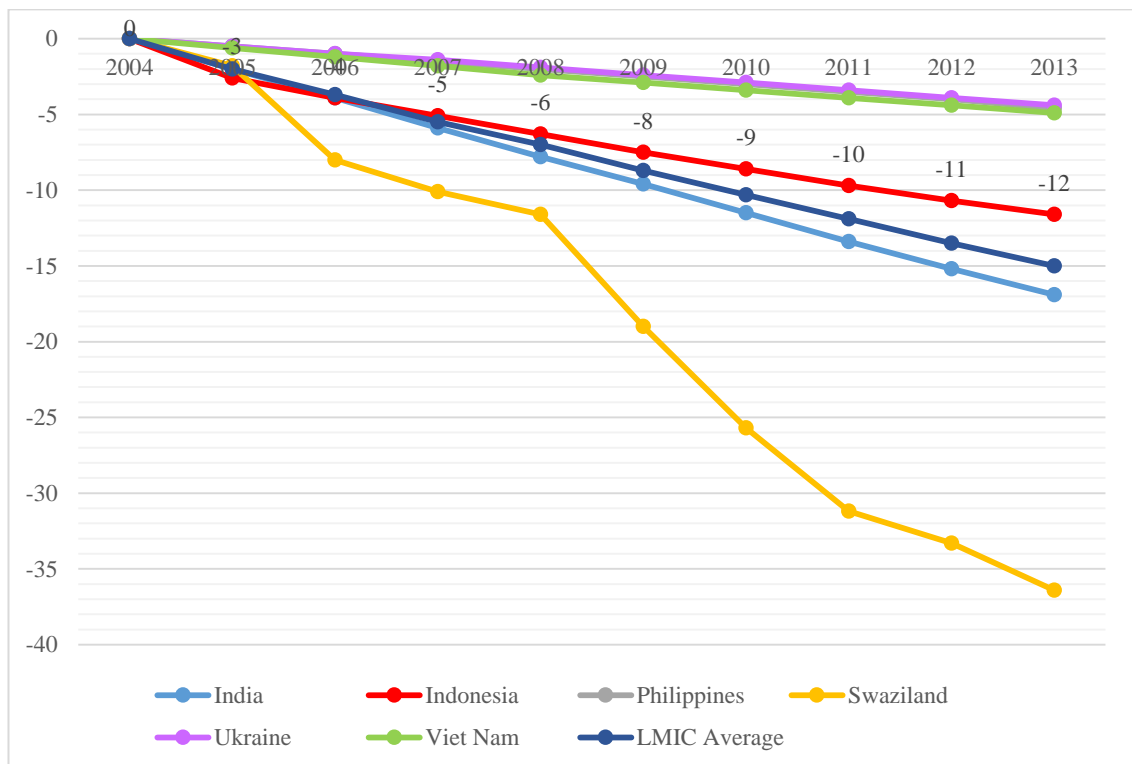
Similar with under-five mortality rates' pattern, Swaziland as the country with highest infant mortality rate had the most rapid decrements (Figure 5.29), while at slower rate, Indonesia and the rest other comparator countries' number on infant deaths were still below the average of LMIC (Table 5.14).

Table 5.14 The Growth in Infant Mortality Rate per 1000 Live Birth in Indonesia and Selected LMI Countries between 2004 and 2013, death

Years	India	Indonesia	Philippines	Swazi-land	Ukraine	Viet Nam	LMIC Average
2004	57.8	36	27.9	84.8	13	23.2	57.7
2005	55.8	33.4	27.4	83	12.5	22.6	55.7
2006	53.9	32.1	26.9	76.8	12	22	54
2007	51.9	30.9	26.4	74.7	11.6	21.4	52.2
2008	50	29.7	25.9	73.2	11.1	20.8	50.7
2009	48.2	28.5	25.4	65.8	10.6	20.3	49
2010	46.3	27.4	24.9	59.1	10.1	19.8	47.4
2011	44.4	26.3	24.4	53.6	9.6	19.3	45.8
2012	42.6	25.3	23.9	51.5	9.1	18.8	44.2
2013	40.9	24.4	23.3	48.4	8.6	18.3	42.7

Source: World Bank, 2016

Figure 5.29 Gains in Infant Mortality Rate per 1000 Live Birth in Indonesia and Selected LMI Countries between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

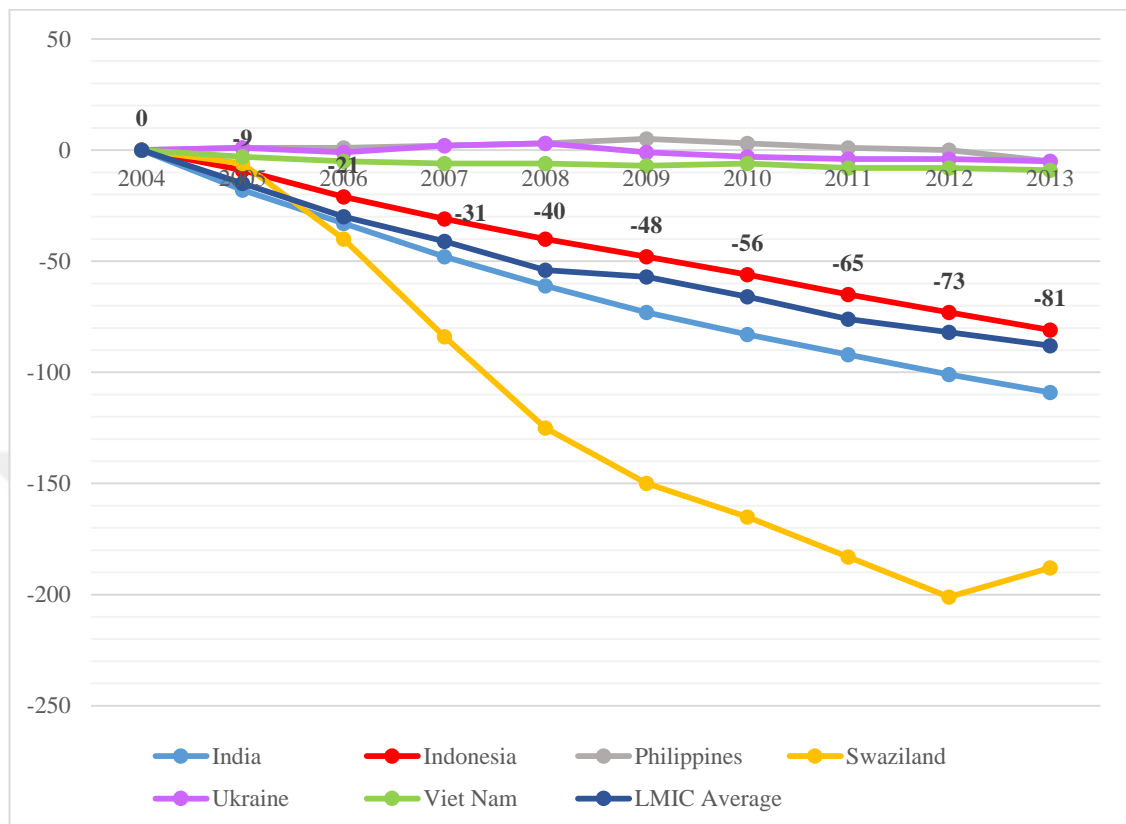
Table 5.15 tells that only Ukraine and Viet Nam had Maternal Mortality Ratio below a hundred over those ten years. Whereas Indonesia, India and Philippines's Maternal Mortality Ratio ranged from 121-298 death per 100,000 live births, still below the LMIC averages. Swaziland stood out with more than 400 deaths. All countries had decreased number on their Maternal Mortality Ratio at various rate (Figure 5.30). Swaziland reduced their Maternal Mortality Ratio up to 188 death throughout the years. Indonesia and India gained moderate decrement, 81 and 109 respectively, whilst the rests only moved slightly from their points in 2004.

Table 5.15 The Growth in Maternal Mortality Ratio per 100,000 Live Births in Indonesia and Selected LMI Countries between 2004 and 2013, death

Years	India	Indonesia	Philippines	Swazi-land	Ukraine	Viet Nam	LMIC Average
2004	298	221	126	601	29	64	350
2005	280	212	127	595	30	61	335
2006	265	200	127	561	28	59	320
2007	250	190	128	517	31	58	309
2008	237	181	129	476	32	58	296
2009	225	173	131	451	28	57	293
2010	215	165	129	436	26	58	284
2011	206	156	127	418	25	56	274
2012	197	148	126	400	25	56	268
2013	189	140	121	413	24	55	262

Source: World Bank, 2016

Figure 5.30 Gains in Maternal Mortality Ratio per 100,000 Live Births in Indonesia and Selected LMI Countries between 2004 and 2013, death (Base Year: 2004)



Source: World Bank 2016

5.2.3 Health Expenditure and Health Status Improvements: Indonesia and the Countries with Similar HDI Level

Data on Indonesia and Indonesia and the Countries with Similar HDI Levels' health expenditure growth and health indicators are obtained from WHO and World Bank.

5.2.3.1 Health Expenditure Growth

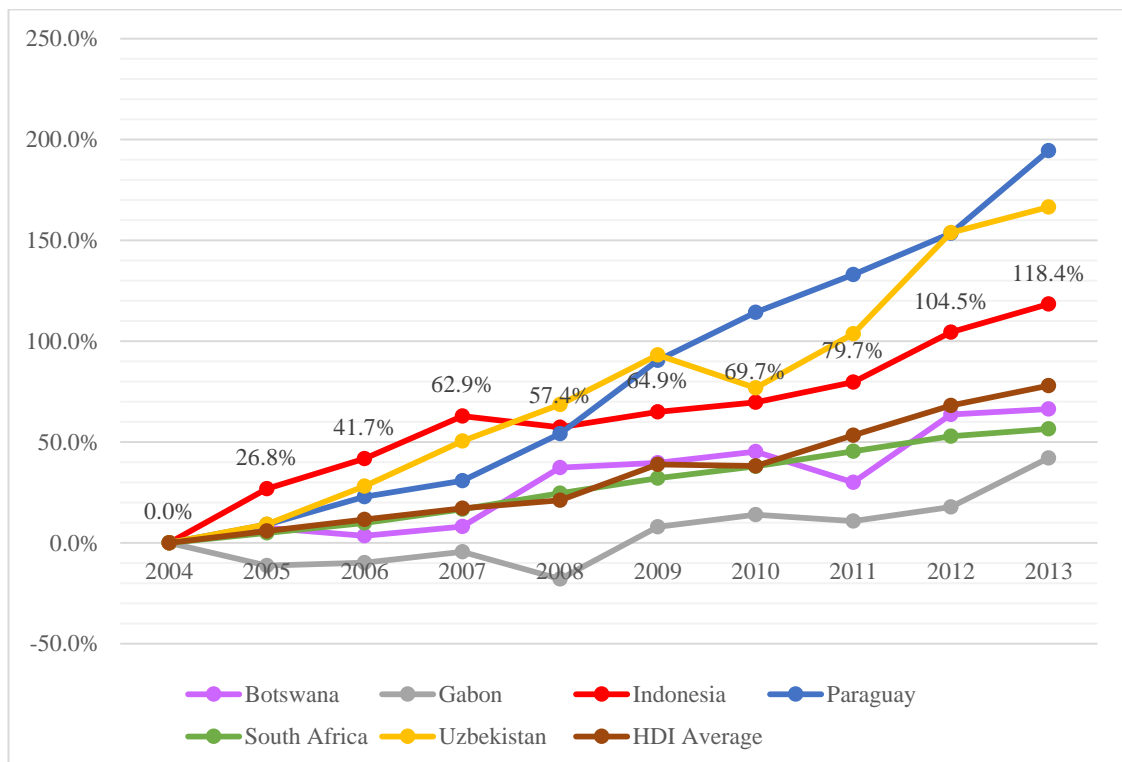
Albeit the rate of change placed the third among similar HDI level countries (Figure 5.31), per capita health expenditure of Indonesia had been being the lowest two since 2004 (Table 5.16). Uzbekistan as a country with the second fastest growing health expenditure exceeded Indonesia's amount since 2008. Fastest rate of change placed Paraguay as one of the greater spenders on health between these countries.

Table 5.16 The Growth in Per Capita Health Expenditure of Indonesia and the Countries with Similar HDI Level, PPP

Years	Bots-wana	Gabon	Indonesia	Para-guay	South Africa	Uzbekistan	Med HDI Average
2004	537	472	134	303	718	128	267
2005	577	419	170	331	754	139	283
2006	556	426	190	373	788	163	298
2007	580	452	218	397	838	192	313
2008	737	387	211	468	894	215	324
2009	750	510	221	578	948	246	371
2010	780	538	227	650	991	226	369
2011	698	524	241	707	1,045	260	410
2012	879	556	274	769	1,097	324	449
2013	893	671	292	893	1,124	340	476

Source: WHO, 2014

Figure 5.31 The Rate of Change in Per Capita Health Expenditure of Indonesia and the Countries with Similar HDI Level, PPP (Base Year: 2004)



Source: WHO, 2014

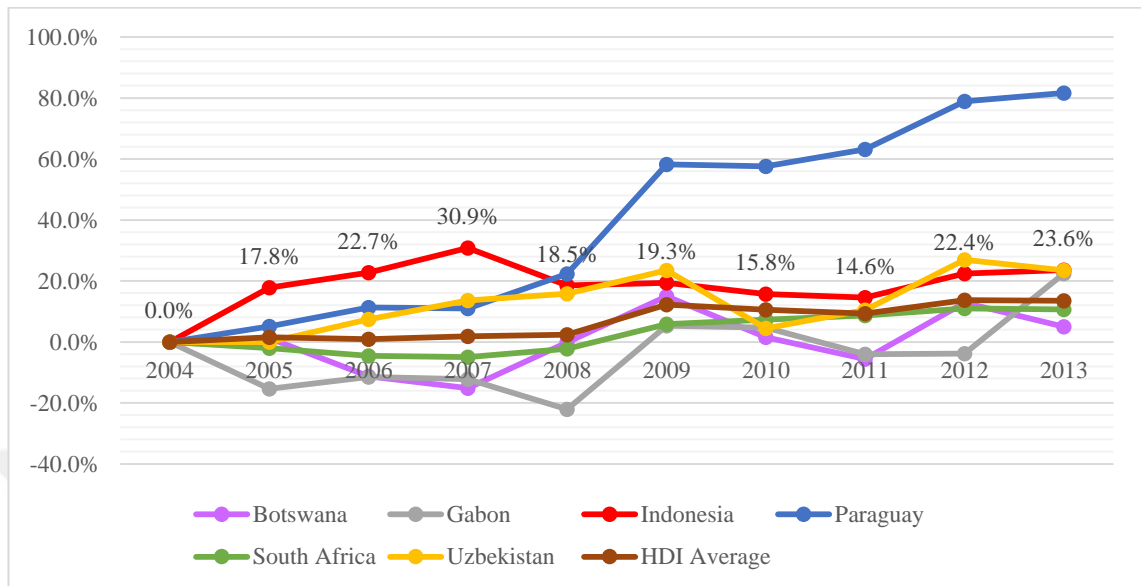
Indonesia had been allocating minuscule amount of their GDP for health. The number had never passed 3.1%, it thus become the lowest share compared to benchmark countries in term of similar level of HDI (Table 5.17). The change rate of the share in 2013 even lower than that of 2007. Although South Africa had the highest share in 2004 but the number then being surpassed by Paraguay since 2009. Steepest increased line in Figure 5.32 shows how fast the change rate of Paraguay.

Table 5.17 The Growth in Total Health Expenditure of Indonesia and the Countries with Similar HDI Level, % of Gross Domestic Product

Years	Bots- wana	Gabon	Indonesia	Para- guay	South Africa	Uzbekistan	Med HDI Average
2004	5.6	3.3	2.4	5.8	7.9	5.1	5.7
2005	5.6	2.8	2.8	6.1	7.8	5.1	5.7
2006	4.9	2.9	2.9	6.4	7.6	5.5	5.7
2007	4.7	2.9	3.1	6.4	7.5	5.8	5.8
2008	5.6	2.5	2.8	7.1	7.7	5.9	5.8
2009	6.4	3.4	2.8	9.1	8.4	6.3	6.3
2010	5.6	3.4	2.7	9.1	8.5	5.3	6.2
2011	5.2	3.1	2.7	9.4	8.6	5.6	6.2
2012	6.3	3.1	2.9	10.3	8.8	6.5	6.4
2013	5.8	4.0	2.9	10.5	8.8	6.3	6.4

Source: WHO, 2014

Figure 5.32 The Rate of Change in Total Health Expenditure of Indonesia and the Countries with Similar HDI Level, % of Gross Domestic Product (Base Year: 2004)



Source: WHO, 2014

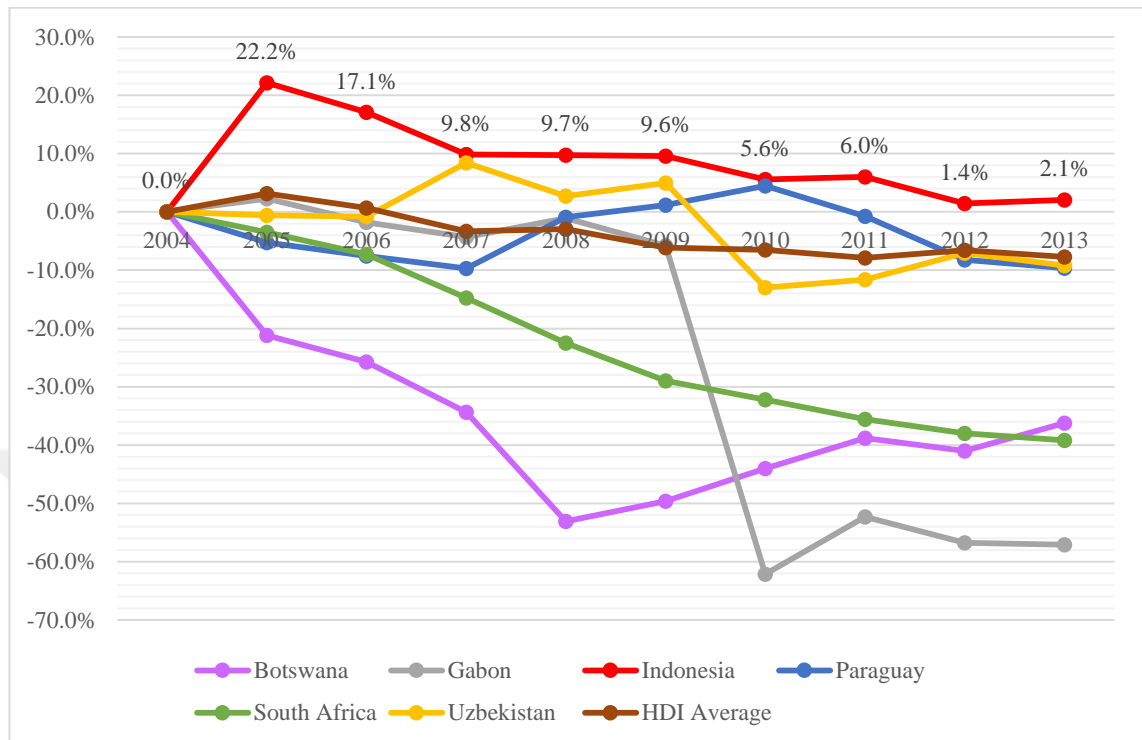
Indonesia was the only country whose out-of-pocket payments, instead of decreasing, increased more than it was in 2004 (table 5.18). Gabon, Botswana, and South Africa showed remarkable change with more than 30% reduction in ten years (Figure 5.33).

Table 5.18 The Growth in Out-Of-Pocket Payments for Health of Indonesia and the Countries with Similar HDI Level, % Total Health Expenditure

Years	Bots- wana	Gabon	Indonesia	Para- guay	South Africa	Uzbekistan	Med HDI Average
2004	7.9	48.6	44.7	55.3	10.8	52.4	39.4
2005	6.3	49.7	54.6	52.4	10.5	52.1	40.6
2006	5.9	47.7	52.3	51.1	10.1	52.0	39.6
2007	5.2	46.5	49.1	49.9	9.2	56.9	38.0
2008	3.7	48.1	49.1	54.8	8.4	53.9	38.2
2009	4.0	45.8	49.0	55.9	7.7	55.0	36.9
2010	4.4	18.4	47.2	57.7	7.3	45.6	36.8
2011	4.9	23.2	47.4	54.9	7.0	46.4	36.2
2012	4.7	21.0	45.3	50.7	6.7	48.7	36.8
2013	5.1	20.8	45.6	49.9	6.6	47.6	36.3

Source: WHO, 2014

Figure 5.33 The Rate of Change in Out-Of-Pocket Payments for Health of Indonesia and the Countries with Similar HDI Level, % Total Health Expenditure (Base Year: 2004)



Source: WHO, 2014

5.2.3.2 Improvements in Health Status Indicators

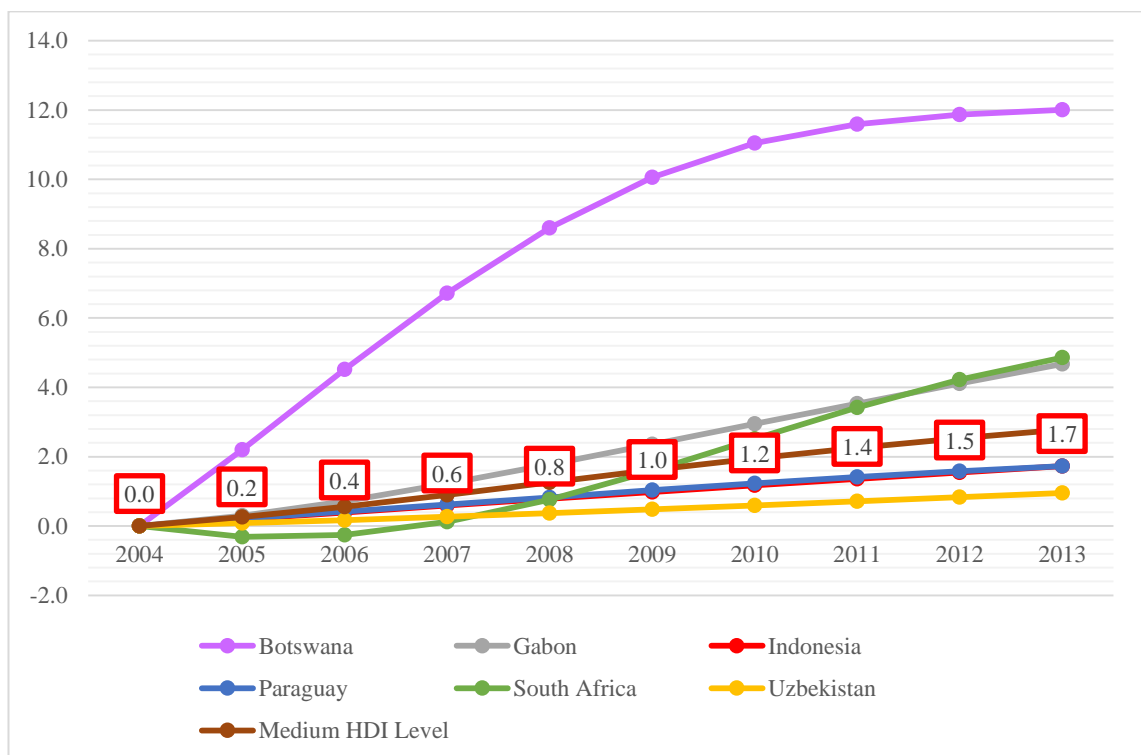
The numbers of Indonesian life expectancy were similar to those of Medium HDI countries average and all of these countries, except South Africa, were expected to live more than 60 years (Table 5.19). Life expectancy of Indonesian new-born slightly increased from that of 2004 (Figure 5.34), yet in 2013 it became the second highest among the comparator countries. Botswana successfully prolonged their new-borns' chance to live up to 12 years in the given time.

Table 5.19 The Growth in Life Expectancy at Birth in Indonesia and Countries with Similar HDI Level between 2004 and 2013, year

Years	Bots-wana	Gabon	Indonesia	Para-guay	South Africa	Uzbekistan	Medium HDI Average
2004	52.4	59.2	67.0	71.1	51.9	67.3	66.3
2005	54.6	59.5	67.2	71.3	51.6	67.3	66.6
2006	56.9	59.9	67.4	71.5	51.6	67.4	66.9
2007	59.1	60.4	67.6	71.7	52.0	67.5	67.2
2008	61.0	60.9	67.8	71.9	52.6	67.6	67.6
2009	62.4	61.5	68.0	72.1	53.5	67.7	67.9
2010	63.4	62.1	68.1	72.3	54.4	67.9	68.3
2011	64.0	62.7	68.3	72.5	55.3	68.0	68.6
2012	64.2	63.3	68.5	72.7	56.1	68.1	68.9
2013	64.4	63.8	68.7	72.8	56.7	68.2	69.1

Source: World Bank, 2016

Figure 5.34 Gains in Life Expectancy at Birth in Indonesia and Countries with Similar HDI Level between 2004 and 2013, year (Base Year: 2004)



Source: World Bank, 2016

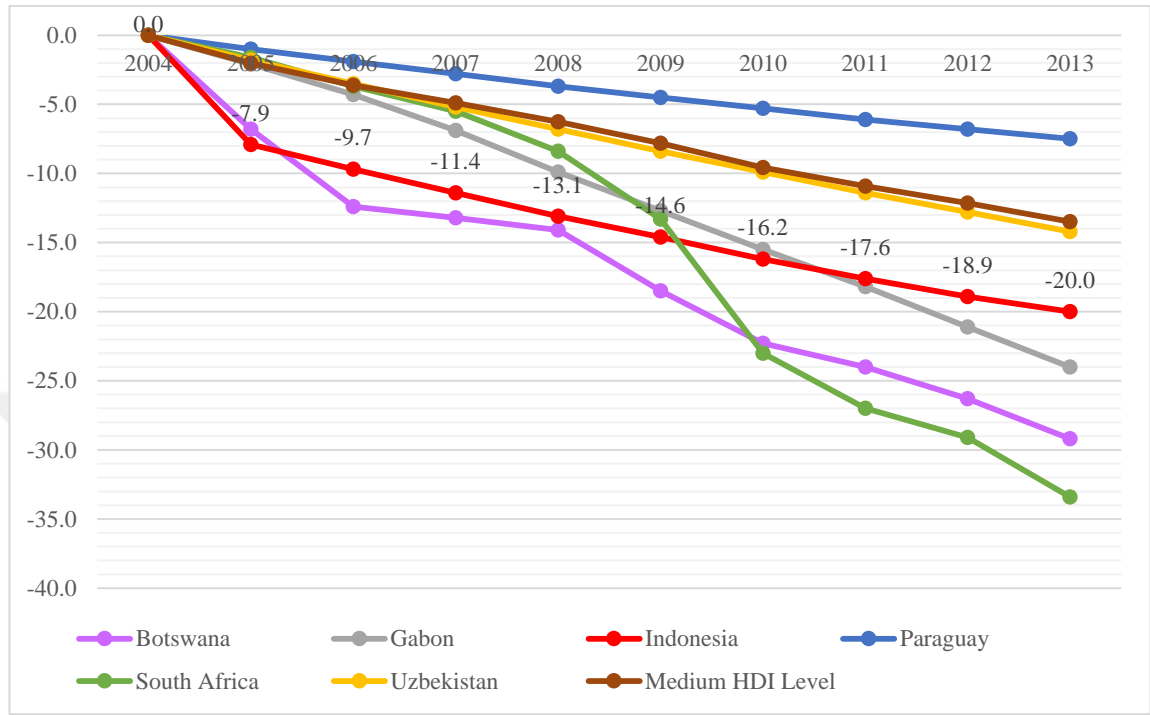
Indonesian toddlers had a 49.3:1000 probability of dying in 2004 and tended to decrease until 29.3 deaths ten years later (Table 5.20). Countries in African region decrease the number of their under-five-years children faster than others (Figure 5.35). Following them, Indonesia, as the country with second smallest number of deaths, gain 20 more lives, higher than those of Medium HDI level average, Uzbekistan, and Paraguay.

Table 5.20 The Growth in Probability of Dying under Age Five Years (Under-Five Mortality Rate) per 1000 Live Births in Indonesia and Countries with Similar HDI Level between 2004 and 2013, death

Years	Botswana	Gabon	Indonesia	Para- guay	South Africa	Uzbekistan	Medium HDI Aver.
2004	75.8	78.8	49.3	29.4	76.8	56	46.6
2005	69	76.7	41.4	28.4	75.2	54.2	44.5
2006	63.4	74.5	39.6	27.5	73.1	52.5	42.9
2007	62.6	71.9	37.9	26.6	71.3	50.8	41.7
2008	61.7	68.9	36.2	25.7	68.4	49.2	40.3
2009	57.3	66.1	34.7	24.9	63.5	47.6	38.8
2010	53.5	63.3	33.1	24.1	53.8	46.1	37.0
2011	51.8	60.6	31.7	23.3	49.8	44.6	35.7
2012	49.5	57.7	30.4	22.6	47.7	43.2	34.4
2013	46.6	54.8	29.3	21.9	43.4	41.8	33.1

Source: World Bank, 2016

Figure 5.35 Gains in Probability of Dying under Age Five Years (Under-Five Mortality Rate) per 1000 Live Births in Indonesia and Countries with Similar HDI Level between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

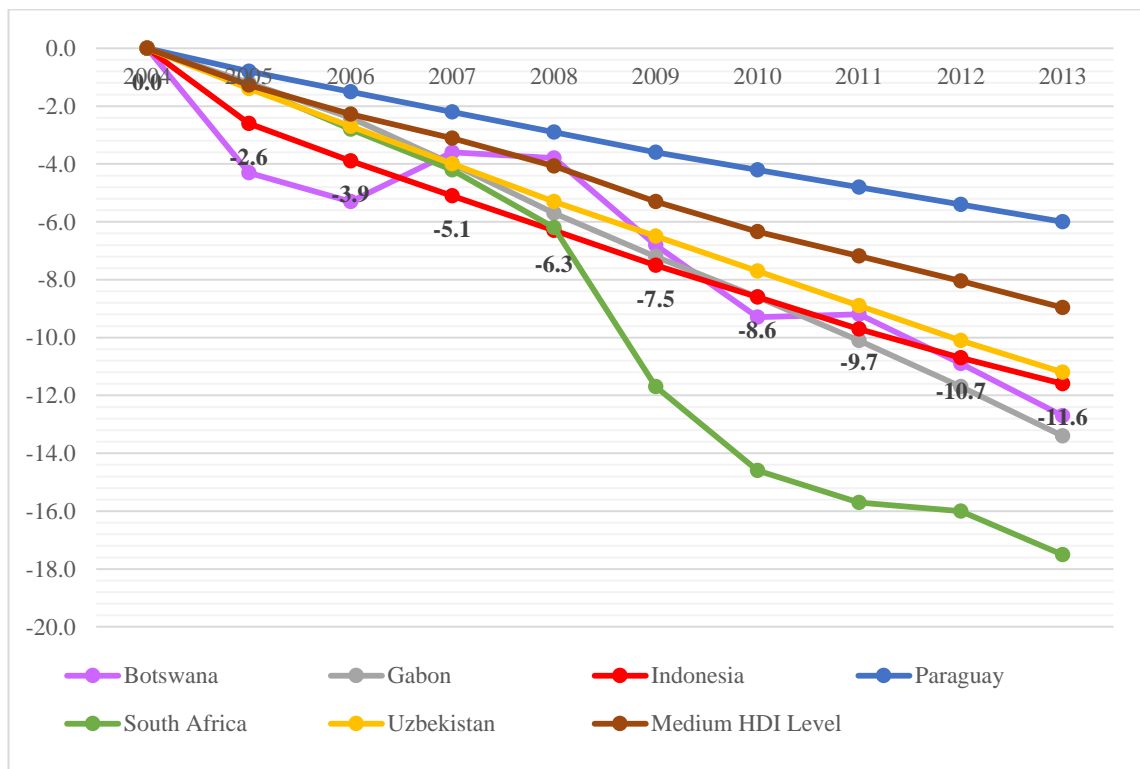
The following table informs that in 2013, almost 25 of 1000 infants in Indonesia had a probability to death. The number was slightly lower than Medium HDI level countries on average (Table 5.21). Very similar to under-five mortality rate's pattern, African countries took lead of the gain in decreasing infant mortality rate (Figure 5.36). South Africa succeeded to push the death number up to 17.5 and this escorted them to the third place after Paraguay and Indonesia, exceeded that of Uzbekistan.

Table 5.21 The Growth in Infant Mortality Rate per 1000 Live Birth in Indonesia and Countries with Similar HDI Level between 2004 and 2013, death

Years	Botswana	Gabon	Indonesia	Paraguay	South Africa	Uzbekistan	Medium HDI Aver.
2004	49.1	51.4	36	24.6	52.8	47.3	36.0
2005	44.8	50.2	33.4	23.8	51.5	45.9	34.7
2006	43.8	49	32.1	23.1	50	44.6	33.7
2007	45.5	47.4	30.9	22.4	48.6	43.3	32.9
2008	45.3	45.7	29.7	21.7	46.6	42	31.9
2009	42.3	44.2	28.5	21	41.1	40.8	30.7
2010	39.8	42.8	27.4	20.4	38.2	39.6	29.6
2011	39.9	41.3	26.3	19.8	37.1	38.4	28.8
2012	38.2	39.7	25.3	19.2	36.8	37.2	28.0
2013	36.4	38	24.4	18.6	35.3	36.1	27.0

Source: World Bank, 2016

Figure 5.36 Gains in Infant Mortality Rate per 1000 Live Birth in Indonesia and Countries with Similar HDI Level between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

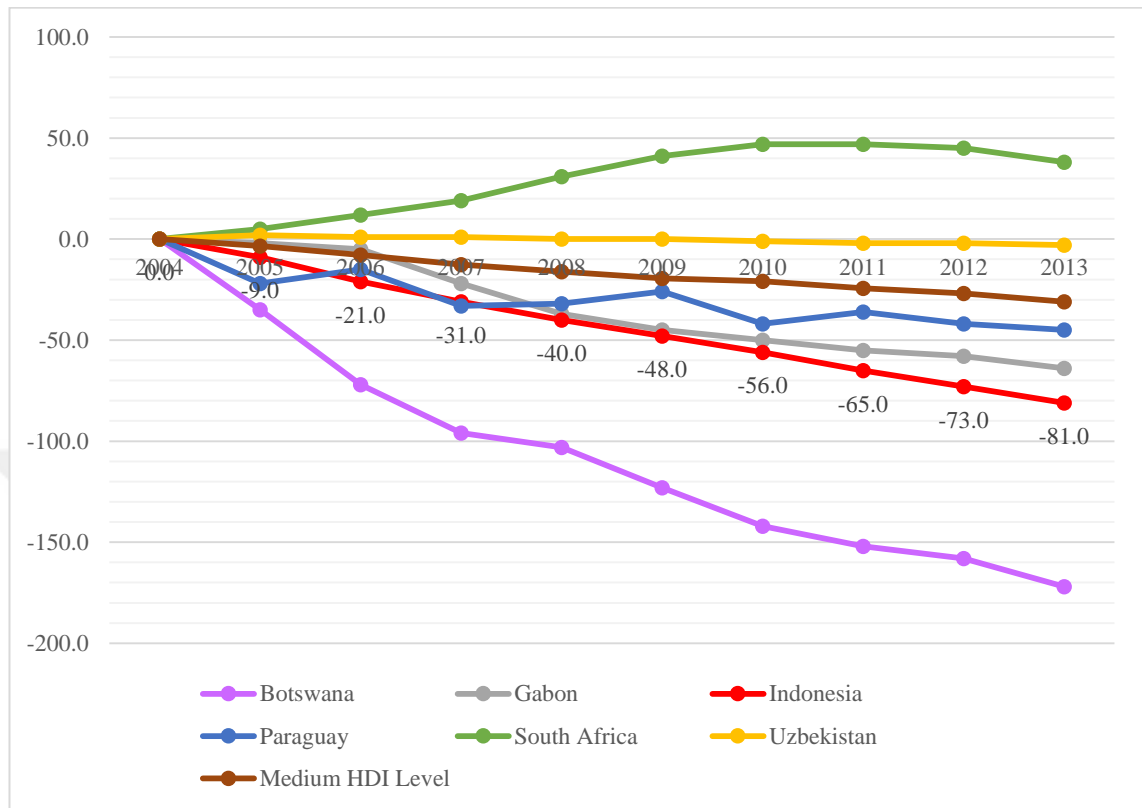
Maternal mortality ratio in most of these countries, including Indonesia, ranged from 136 to 145; higher than that of medium HDI level average (Table 5.22). Yet Botswana remarkably pushed their number down to 172, followed by Indonesia in second place with 81 lives of gain (Figure 5.37). Uzbekistan only added 3 lives in past ten years albeit their MMR was the smallest among the comparator countries.

Table 5.22 The Growth in Maternal Mortality Ratio per 100,000 Live Births in Indonesia and Countries with Similar HDI Level between 2004 and 2013, death

Years	Botswana	Gabon	Indonesia	Para- guay	South Africa	Uzbekistan	Medium HDI Aver.
2004	311	372	221	181	107	40	144.3
2005	276	370	212	159	112	42	140.8
2006	239	367	200	166	119	41	136.4
2007	215	350	190	148	126	41	131.7
2008	208	335	181	149	138	40	128.1
2009	188	327	173	155	148	40	124.8
2010	169	322	165	139	154	39	123.4
2011	159	317	156	145	154	38	119.9
2012	153	314	148	139	152	38	117.4
2013	139	308	140	136	145	37	113.3

Source: World Bank, 2016

Figure 5.37 Gains in Maternal Mortality Ratio per 100,000 Live Births in Indonesia and Countries with Similar HDI Level between 2004 and 2013, death (Base Year: 2004)



Source: World Bank, 2016

5.3. VALUE FOR MONEY OF INDONESIAN HEALTHCARE SYSTEM COMPARED TO BENCHMARK COUNTRIES USING DATA ENVELOPMENT ANALYSIS

5.3.1. Indonesia and APEC Countries

Table 5.23 shows the estimated VRS technical efficiency scores of APEC countries over ten years (2004 – 2013). In 2004, out of 19 countries, 14 countries were found to be efficient, that is, having 1.0 VRSTE score. Four countries among these 14 even had 1.0 CRSTE and automatically, 1.0 SE score too. They were Papua New Guinea, Philippines, Russian Federation and Viet Nam. Buzzworthy point here is, these countries were not on the developed and high-income countries list. Indonesia, Mexico and Brunei Darussalam were highly inefficient as they scored below VRSTE mean value.

Table 5.23 Estimated Variable Return to Scale Technical Efficiency Scores of APEC Countries Over Ten Years (2004 to 2013)

#	Country	VRSTE 2004	Peers	VRSTE 2013	Peers	Efficiency Gain (2004 – 2013)
1	Australia	0.999	8 7 3	0.986	7	-0.013
2	Brunei Darussalam	0.976	12 11 7	1.000	2	0.024
3	Canada	1.000	3	0.990	11 7	-0.01
4	Chile	1.000	4	1.000	4	0
5	China	1.000	5	0.989	17 19 4	-0.011
6	Indonesia	0.990	12 19 14	0.965	12 19	-0.025
7	Japan	1.000	7	1.000	7	0
8	South Korea Rep.	1.000	8	1.000	8	0
9	Malaysia	0.998	5 12 17 4	0.958	17 19 4	-0.04
10	Mexico	0.994	12 19 4 11	0.990	4 19 13 14	-0.004
11	New Zealand	1.000	11	1.000	11	0
12	Papua New Guinea	1.000	12	1.000	12	0
13	Peru	1.000	13	1.000	13	0
14	Philippines	1.000	14	1.000	14	0
15	Russian Fed.	1.000	15	1.000	15	0
16	Singapore	1.000	16	0.988	4 7	-0.012
17	Thailand	1.000	17	1.000	17	0
18	United States	1.000	18	0.990	11 2	-0.01
19	Viet Nam	1.000	19	1.000	19	0
Mean		0.998		0.992		-0.006

Ten years later, surprisingly, the number of efficient countries decreased to 11 countries. Canada, China, Singapore, United States turned out to be inefficient while in contrast, Brunei Darussalam became efficient in term of VRSTE. Chile, Japan, South Korea, New Zealand, Papua New Guinea, Peru, Philippines, Russian Federation, Thailand and Viet Nam were found to be efficient in either 2004 or 2013.

All of inefficient countries scored less than mean value of VRSTE score. Actually, mean value of 2013 VRSTE scores were lower than that of 2004. Brunei Darussalam was the only one country which had positive efficiency gain for the last decade. Ten countries remained the same, and the rest eight countries showed negative gains, which means the

efficiency of their health systems worsened over ten years. Indonesia got the worst decline with 2.5%.

DEA models, either input or output orientated, emphasizing on proportional reduction of excessive inputs (input slack) or proportional augmentation of shortage outputs (output slack) to achieve efficient targets. Slack would not exist unless the related DMU was found to be inefficient. None of inefficient APEC countries was mentioned to have life expectancy slack (table 5.24) except United States in 2013. However three members, Singapore, Indonesia and Australia, showed worsening out of pocket payment slacks over ten years. It implied that they could not reach efficiency target despite the proportional augmentation of fairness, that is, reduction of out of pocket payment. Meanwhile, Mexico succeed to improve their fairness as their out of pocket slack narrowed from 15.46 to 7.42.

In 1995, only Brunei Darussalam showed health expenditure slack, yet they managed to be efficient in all inputs and outputs over the years. A decade after, Australia, Canada and United States indicated excessive health expenditure in producing health outcomes.

There were no advantages of having higher urbanization and education on health outcomes for Australia, Canada, China, Indonesia, Malaysia and Singapore in 2013 as these countries demonstrated slacks on those two inputs. Education also had no effect on United States health outcome. Actually, only urban population growth hit zero slack for United States. China, Indonesia, Malaysia and Singapore were other countries who could not use three out of four inputs efficiently. Australia and Canada even could not use any of four efficiently to provide such health outcomes.

Russian Fed.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Singapore	0.000	0.000	0.000	0.000	0.000	0.000	0.000	42.743	0.000	43056.989	1.068	0.022
Thailand	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
United States	0.000	0.000	0.000	0.000	0.000	0.000	1.548	0.000	5295.818	13816.636	0.000	0.005
Viet Nam	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	0.000	0.967	5.198	3119.783	0.123	0.001	0.081	3.662	352.229	4824.429	0.913	0.012

LE: Life Expectancy at Birth; FAIR: Fairness in Health Financing; HEXP: Health Expenditure Per Capita; GDPP: Gross Domestic Product Per Capita; URPG: Urban Population Growth; EDIN: Education Index.

5.3.2. Indonesia and Lower Middle Income Countries

In 2004, 18 countries were found to be efficient in VRSTE term (Table 5.25). In 2007, the number increased to 20 efficient countries, then decreased to 17 countries three years after and eventually back to 18 countries in 2013. Bangladesh, Djibouti, Nicaragua, Papua New Guinea, Solomon Islands, Sri Lanka, Swaziland, Tajikistan, Timor Leste, Tonga, Vanuatu and Viet Nam were 12 countries exhibited 1.0 VRSTE scores throughout all years. Eight of them also demonstrated 1.0 CRSTE score. These countries even were not on the top of lower middle income countries rank but could sustain their efficiency for decade. They were Bangladesh, Djibouti, Papua New Guinea, Solomon Islands, Swaziland, Tajikistan, Timor Leste, Tonga, Vanuatu and Viet Nam.

Cote d'Ivoire (Ivory Coast), Lesotho, Republic of Congo were top three countries having positive efficiency gains. On the other hand, 10 countries including Uzbekistan, Pakistan, Philippines, Egypt, Morocco, Tunisia, Indonesia, Guatemala, Cabo Verde and Kyrgyz Republic were experiencing worsen efficiency over those ten years.

Table 5.25. Estimated Variable Return to Scale Technical Efficiency Scores of Lower Middle Income Countries Over Ten Years (2004 to 2013)

No	Country	VRSTE Scores				Efficiency Gain (2004 – 2013)
		2004	2007	2010	2013	
1	Bangladesh	1.000	1.000	1.000	1.000	0.000
2	Bhutan	0.918	1.000	0.967	0.953	0.035
3	Bolivia	0.882	0.899	0.914	0.928	0.046
4	Cabo Verde	0.996	1.000	0.994	0.994	-0.002
5	Cambodia	1.000	1.000	0.998	1.000	0.000
6	Cameroon	0.732	0.748	0.816	0.826	0.094
7	Congo, Rep.	0.753	0.789	0.849	0.877	0.124
8	Cote d'Ivoire	0.697	1.000	1.000	1.000	0.303
9	Djibouti	1.000	1.000	1.000	1.000	0.000
10	Egypt, Arab Rep.	0.968	0.954	0.943	0.943	-0.025
11	El Salvador	0.957	0.970	1.000	1.000	0.043
12	Ghana	0.845	0.903	0.873	0.861	0.016
13	Guatemala	0.963	0.955	0.969	0.960	-0.003
14	Honduras	0.984	0.967	0.990	1.000	0.016

15	India	0.925	0.928	0.922	0.941	0.016
16	Indonesia	0.929	0.913	0.924	0.926	-0.003
17	Kenya	0.770	0.804	0.849	0.879	0.109
18	Kyrgyz Republic	1.000	1.000	1.000	0.999	-0.001
19	Lao PDR	0.857	0.880	0.926	0.942	0.085
20	Lesotho	0.771	0.858	1.000	1.000	0.229
21	Mauritania	0.877	0.899	0.966	0.972	0.095
22	Mongolia	0.882	0.897	0.911	0.915	0.033
23	Morocco	1.000	1.000	0.993	0.989	-0.011
24	Nicaragua	1.000	1.000	1.000	1.000	0.000
25	Nigeria	0.676	0.694	0.765	0.774	0.098
26	Pakistan	1.000	1.000	0.965	0.960	-0.040
27	Papua New Guinea	1.000	1.000	1.000	1.000	0.000
28	Philippines	0.972	0.949	0.971	0.941	-0.031
29	Sao Tome and Principe	0.940	0.935	0.949	0.972	0.032
30	Solomon Islands	1.000	1.000	1.000	1.000	0.000
31	Sri Lanka	1.000	1.000	1.000	1.000	0.000
32	Sudan	0.897	0.912	0.979	1.000	0.103
33	Swaziland	1.000	1.000	1.000	1.000	0.000
34	Tajikistan	1.000	1.000	1.000	1.000	0.000
35	Timor-Leste	1.000	1.000	1.000	1.000	0.000
36	Tonga	1.000	1.000	1.000	1.000	0.000
37	Tunisia	1.000	1.000	1.000	0.993	-0.007
38	Uzbekistan	1.000	0.969	0.924	0.920	-0.080
39	Vanuatu	1.000	1.000	1.000	1.000	0.000
40	Vietnam	1.000	1.000	1.000	1.000	0.000
41	Yemen, Rep.	0.875	0.879	0.929	0.961	0.086
Mean		0.928	0.944	0.958	0.962	0.034

Nevertheless, the changes in efficiencies over the times were composed from some reason. Those changes and the possible reasons can be tracked by Malmquist Total Factor Productivity (TFP) Index. It help to define whether the changes are the result of improvements in technical efficiency, that is, the distance change of DMU to efficient frontier; or due to technological change, which means the change/shift of efficient frontier itself. Malmquist TFP Index can also be calculated by DEA. In table 5.26, LMI countries were ranked according to their technical efficiency change (TEC) scores. Value greater

than 1.000 indicated that TEC increases throughout ten years (2004 to 2013), which means the related country improved its efficiency in producing health outcomes at the same frontier (without intervention of technological change).

Out of 22 countries showing efficiency improvement, we can see that Nigeria (5.4%), Lao PDR (4.9%), Cameroon (3.2%), Yemen (3.2%), Lesotho (2.6), Cote d'Ivoire (2.5%) and Mongolia (2.5%) increased their technical efficiency the highest. 11 out of 12 countries with 1.0 VRSTE of all years (except Viet Nam) which means countries that were always be efficient during the decade, interestingly were reported to have 1.000 or even less TEC.

Technology affected the health outcomes of 12 countries in relatively small portion ranging from 0.2% - 1.2%. El Savador (1.2%), Nicaragua (1%), Tunisia (0.9%) and Bolivia (0.7%) were on the top list. The rest 29 countries showed no effect of technological change on their health outcomes. Nigeria (3.3%), Lao PDR (3.2%), Cameroon (2.9%), El Savador (2.8%) and Congo Rep. (2.7%) had the highest total factor productivity change which means their TFP increased from 2004 until 2013 more than others did.

Table 5.26. Malmquist Index Summary of LMIC (2004-2013)

No	Country	Technical Efficiency Change (TEC)	Technological Change (TC)	Total Factor Productivity Change (TFPC)
1	Nigeria	1.054	0.981	1.033
2	Lao PDR	1.049	0.984	1.032
3	Cameroon	1.032	0.997	1.029
4	Yemen, Rep.	1.032	0.973	1.004
5	Lesotho	1.026	0.994	1.020
6	Cote d'Ivoire	1.025	0.983	1.008
7	Mongolia	1.025	1.000	1.026
8	Bolivia	1.024	1.007	1.031
9	Kenya	1.024	1.001	1.025
10	Honduras	1.023	1.004	1.026
11	Congo, Rep.	1.022	1.005	1.027
12	Sao Tome and Principe	1.021	1.000	1.021
13	Guatemala	1.020	0.990	1.009
14	Cabo Verde	1.017	1.002	1.018
15	Sudan	1.017	0.998	1.015
16	El Salvador	1.016	1.012	1.028
17	Ghana	1.015	0.996	1.010
18	Mauritania	1.011	0.973	0.984
19	Bhutan	1.009	0.979	0.987
20	Vietnam	1.008	1.003	1.012
21	Indonesia	1.002	1.000	1.003
22	Tunisia	1.001	1.009	1.010
23	Bangladesh	1.000	0.959	0.959
24	Djibouti	1.000	1.004	1.004
25	Nicaragua	1.000	1.010	1.010
26	Papua New Guinea	1.000	0.992	0.992
27	Solomon Islands	1.000	0.981	0.981
28	Swaziland	1.000	0.000	0.000
29	Tajikistan	1.000	0.965	0.965
30	Timor-Leste	1.000	0.939	0.939
31	Tonga	1.000	1.006	1.006
32	Vanuatu	1.000	0.995	0.995
33	Philippines	0.998	0.994	0.992

34	India	0.997	1.002	0.999
35	Cambodia	0.996	1.000	0.996
36	Kyrgyz Republic	0.994	0.973	0.968
37	Pakistan	0.994	0.979	0.973
38	Sri Lanka	0.994	1.003	0.997
39	Egypt, Arab Rep.	0.992	1.000	0.992
40	Morocco	0.986	0.992	0.978
41	Uzbekistan	0.976	0.980	0.957
Mean		1.010	0.967	0.977

5.3.3. Indonesia and Countries with Medium Human Development Index

Table 5.27 exhibits that in 2004, 15 out of 33 countries with medium human development index included in this study showed 1.0 VRSTE score. Efficient countries number in term of VRSTE then fluctuated to 16, 15 and 18 in 2007, 2010 and 2013, respectively. Nine countries were reported to have 1.0 VRSTE score in all years. They were Bangladesh, Botswana, Cambodia, Guyana, Kyrgyz Republic, Moldova, Nicaragua, Tajikistan and Timor Leste. Table 5.27 also reflects that there were no correlation between HDI rank and efficiency performance of these countries. Bangladesh and Cambodia were even ranked at the bottom three of medium HDI countries list.

Lao PDR, Equatorial Guinea, Congo, Rep., Gabon and Sao Tome were 5 countries succeeded most in improving their efficiency over 10 years. Eight countries including Uzbekistan, Morocco, Indonesia, Egypt, Paraguay, Turkmenistan, Namibia and Guatemala, were found to have negative efficiency gain which means decreasing efficiency score in the last decade. However, further detail on efficiency improvement should be explained using Malmquist Index in order to define whether the change were interfered by technological reason or there was progress of the technical efficiency itself. Table 5.28 provide Malmquist Index result of Medium HDI panel data.

Twenty two out of 33 Medium HDI countries listed here showed improvement on technical efficiency ranged from 0.2% to 5.4%. As have been ranked in descending order in table 5.28, Equatorial Guinea, Lao PDR, Gabon and Republic of Congo, increased their

technical efficiency the most during the decade. Equatorial Guinea and Lao also placed the top rank of countries with the highest TFP change.

Table 5.28 also indicates that technological development gave minor positive effect to health outcomes of 8 countries; El Salvador (1.5%), Sao Tome (1.1%), Nicaragua (0.7%), Cabo Verde (0.3%), Botswana (0.2%), Bolivia (0.1%), South Africa (0.1%) and Viet Nam (0.1%). Uzbekistan and Morocco were countries that had TEC scores less than 1.000, which means these two countries had deterioration instead of improvement on their technical efficiency over ten years

Table 5.27. Estimated Variable Return to Scale Technical Efficiency Scores of Medium HDI Countries Over Ten Years (2004 to 2013)

HDI Rank	Country	VRSTE scores				Efficiency Gain (2004 – 2013)
		2004	2007	2010	2013	
106	Botswana	1.000	1.000	1.000	1.000	0.000
107	Moldova	1.000	1.000	1.000	1.000	0.000
108	Egypt	0.974	0.975	0.953	0.946	-0.028
109	Turkmenistan	0.920	0.951	0.914	0.904	-0.016
110	Gabon	0.825	0.825	0.911	0.907	0.082
110	Indonesia	0.936	0.916	0.926	0.930	-0.006
112	Paraguay	0.987	0.988	0.982	0.977	-0.010
114	Uzbekistan	1.000	0.979	0.925	0.937	-0.063
115	Philippines	0.982	0.987	0.980	1.000	0.018
116	El Salvador	0.998	1.000	1.000	1.000	0.002
116	South Africa	0.963	0.963	1.000	1.000	0.037
116	Viet Nam	1.000	1.000	1.000	1.000	0.000
119	Bolivia	0.907	0.904	0.923	0.939	0.032
120	Kyrgyz, Rep.	1.000	1.000	1.000	1.000	0.000
122	Cabo Verde	1.000	1.000	0.997	1.000	0.000
124	Guyana	1.000	1.000	1.000	1.000	0.000
125	Nicaragua	1.000	1.000	1.000	1.000	0.000
126	Morocco	1.000	1.000	0.993	0.989	-0.011
126	Namibia	1.000	0.979	0.984	0.992	-0.008
128	Guatemala	0.966	0.956	0.969	0.960	-0.006
129	Tajikistan	1.000	1.000	1.000	1.000	0.000

130	India	0.930	0.942	0.923	0.946	0.016
131	Honduras	0.987	0.969	0.990	1.000	0.013
132	Bhutan	0.919	1.000	1.000	0.953	0.034
133	Timor Leste	1.000	1.000	1.000	1.000	0.000
134	Vanuatu	1.000	1.000	1.000	1.000	0.000
136	Congo, Rep.	0.754	0.789	0.961	0.892	0.138
138	Equatorial Guinea	0.755	0.833	0.912	0.898	0.143
140	Ghana	0.846	1.000	1.000	0.873	0.027
141	Lao PDR	0.857	0.880	1.000	1.000	0.143
142	Bangladesh	1.000	1.000	1.000	1.000	0.000
143	Cambodia	1.000	1.000	1.000	1.000	0.000
143	Sao Tome and Principes	0.941	0.935	1.000	1.000	0.059
Mean		0.953	0.963	0.977	0.971	0.018

Table 5.28. Malmquist Index Summary of Countries with Medium HDI (2004-2013)

No	Country	Technical Efficiency Change (TEC)	Technological Change (TC)	Total Factor Productivity Change (TFPC)
1	Equatorial Guinea	1.054	0.997	1.051
2	Lao PDR	1.051	0.989	1.039
3	Gabon	1.040	0.995	1.035
4	Congo, Rep.	1.032	0.993	1.025
5	Guatemala	1.028	0.981	1.009
6	Paraguay	1.028	0.999	1.027
7	Bolivia	1.026	1.001	1.027
8	Honduras	1.026	0.996	1.022
9	Cabo Verde	1.021	1.003	1.024
10	Bhutan	1.019	0.975	0.993
11	Namibia	1.019	0.989	1.008
12	South Africa	1.019	1.001	1.021
13	El Salvador	1.017	1.015	1.032
14	Sao Tome and Princes	1.016	1.011	1.028
15	Viet Nam	1.016	1.001	1.017
16	Philippines	1.011	0.978	0.988
17	Indonesia	1.009	0.998	1.007
18	Turkmenistan	1.009	0.989	0.999
19	Ghana	1.007	0.994	1.001
20	Egypt	1.003	0.994	0.998
21	Nicaragua	1.003	1.007	1.010
22	India	1.002	0.997	0.999
23	Bangladesh	1.000	0.960	0.960
24	Botswana	1.000	1.002	1.001
25	Cambodia	1.000	0.995	0.995
26	Kyrgyz, Rep.	1.000	0.977	0.977
27	Tajikistan	1.000	0.969	0.969
28	Timor Leste	1.000	0.960	0.960
29	Vanuatu	1.000	0.977	0.977
30	Morocco	0.996	0.983	0.979
31	Uzbekistan	0.986	0.982	0.969

5.4. VALUE FOR MONEY OF INDONESIAN HEALTHCARE SYSTEM FROM KEY INFORMANTS' PERSPECTIVES

5.4.1. Value for Money of Indonesian Health System Prior to the Implementation of *JKN (Jaminan Kesehatan Nasional / National Health Insurance)*

Total five key informants were interviewed. All of key informants be of the same mind that Indonesia's value for money prior to the implementation of *JKN* was low. As is clear in the following excerpt from Thabrany, elucidates Indonesia healthcare system wasted its resource (inefficient) and couldn't achieve the intended outcomes (ineffective):

“We just can say that the achievement of previous healthcare system was not good, which can be measured by high IMR, high MMR... Generally, I can only say that our health system wasn't good when we began to implement *JKN*. It wasn't... okay; effective”. Later he said, “What we have been facing in Indonesia is waste. We spent money but our money couldn't make our people healthy”.

All of key informant even agreed that value for money of Indonesian health system were lower than other comparable countries such as Vietnam, Philippines, Sri Lanka, Malaysia, and Thailand. It was lucidly explained by Thabrany:

“If you compare our health expenditure with IMR, I've told you about MMR before, now our IMR, our IMR is higher if we compared it to Sri Lanka, Malaysia, even to many other countries, uh... with a bit more health expenditure, for example, I said before; Sri Lanka, although their income per capita is lower than ours but the results are better than us. It because their health system is indeed better than us”.

There were several points explicated by key informants to be the rationale of low value for money of Indonesian health system. First, four out of five key informants; Thabrany, Ibrahim, Ferdian, and Rahmat stated that insufficient funding was the reason behind this:

“After New Order has been descended in 1998, until 2013, you can check that our health expenditure had been being very low. You can download it from WHO. There was no improvement. I mean before *JKN* it was indeed very bad, because it

was underfunded“ [Thabrany]. “...In Indonesia, otherwise, we have low health expenditure so the results we received is also low” [Ferdian].

This technical efficiency matter was also aggravated by allocative efficiency issue. Ibrahim, Ferdian, Rahmat, and Lukman were certain that high accentuation on curative sector than preventive and promotive ones led to poor value for money.

“So, our value for money hasn’t been good. Yeah... because funding allocation of our health system has been too concentrating to curative efforts. Promotive and preventive (sector) are still grudgingly provided. Thus, health outputs of society are bad.” [Rahmat]

Three of them highlighted this issue as the main problem of Indonesian health system: “The main problem was high emphasize on curative sector” [Ibrahim]. “Since a long time ago, we have been ‘playing’ in curative area, until now. This curative issue has been the main problem since long time ago...” [Rahmat]. The main problem was we haven’t succeed to create society who competent and have willing to perform healthy life style so that they can prevent disease and increase their health status” [Lukman]. Later, Lukman said, “I mean it should have achieved efficient outcome if they pay attention more to public health programs; preventive and promotive (sector), like what I explained before. Otherwise, the budget shared for health will be depleted, government eventually cannot afford the cost”.

Identical with the key informants’, Langenbrunner, et al. asserted that Indonesia needed to increase its funding on public health. They also inserted the important role of disease prevention and health promotion in his analysis:

“Along with a new tobacco tax, Indonesia needs significant new funding levels for public health programs and/or activities. Future health financing should be targeted to increase a significant funding for prevention, and various public health programs. Public health focuses on prevention and promotion (rather than treatment of illness), and on whole populations (rather than individuals). Public health is an essential component of the Indonesian health system, and its infrastructure and prevention-based programs will loop clinical health systems to improve population health, and will reduce health care costs in the future. Unfortunately, the current

Indonesian health system fails to focus on prevention and public health program. Evidence from NTT province, for instance, indicates that only 13 percent of health care spending is focused on prevention and public health, and less elsewhere” (Langhenbrunner et al., 2014: 127).

The third rationale is, poor access that is related to geographical reason and disproportionate distribution of health personnel: “...Besides, geographical reason... quite far for people who lives in remote area... so they will also spend money for travel expense to reach healthcare service” [Lukman].

Ferdian kept suggesting about distributing physician and specialist to remote areas. It signifies that distribution of health personnel was one of problems need to be addressed in achieving good health outcomes:

“Actually there are too much things to be rectified. Rectify the system, make access closer to society... reachable healthcare facilities, and distributing health personnel more evenly. Government need to share budget for any efforts related to the fulfilment of specialist number and encourage them so that they will be reachable by people lives in remote areas or in specialist -“empty pocket” areas (areas that do not have specialist). And also oblige *PTT program* (distribution of physicians into remote areas. This program currently are voluntary) because *PTT Program* actually is rural society’s right to get healthcare services. Or we can establish new program in universities’ faculty of medicine to support it, such as, lowering the tuition fees for medicine students but they are bounded to a contract stating that they will be placed to certain remote area after they become a doctor”.

Ferdian also assumed that these access issues indicated the unreadiness of Indonesian health system toward the implementation of UHC. He also emphasized that access issue couldn’t be taken lightly. It has been a serious problem in previous healthcare system until now:

“So we weren’t ready in healthcare personnel supply and access side. Access is a big issue you know. There is anecdote regarding this issue; in *JKN*, the well-offs actually doesn’t help the poor, instead the rustics –people lives in rural area- help the townspeople, which are usually wealthier than rustics. People lives in Sulawesi

Island helps those in Java Island where transportation facilities are abundant and more convenient, for example. Okay, don't talk about Sulawesi, let's take a closer example. Here, in West Java, I found an old woman with ailment in a remote village. When I asked her why she didn't go to healthcare facilities to get some treatments while she had already known that the treatments would be uncharged, she said that indeed the medical treatment was free but she couldn't afford the cost to reach the place. The transportation cost would be much more than the treatment cost. It was the condition after *JKN*, let alone before *JKN*; they will pay for both, transportation expense and medical treatment expense".

Poor resources management was regarded as the fourth reason hampered the implementation of UHC like Ibrahim mentioned: "Genuinely, Indonesia seemed have not been fully ready to implement *JKN* in 2014, particularly in resource management, and... and cost". This resources management issue, summarized from all interview transcripts, can be decomposed into: poor infrastructure, physician regulation issue, and insufficient supply of health personnel.

Unfavorable infrastructure was mentioned by Ibrahim, "Genuinely, Indonesia seemed have not been fully ready to implement *JKN* in 2014, particularly in resource management, and... and cost. Indonesia government needs to improve the system and infrastructure to support the implementation of *JKN*."

WHO clarified the importance of infrastructure as they took it as one aspect needed to get investment in the interest of achieving good performance:

"Available resources should be allocated both to investments in new skills, facilities and equipment, and to maintenance of the existing infrastructure. Moreover, these delicate balances must be maintained both over time and across different geographical areas. In practice, imbalances between investment and recurrent expenditures and among the different categories of inputs are frequent, and create barriers to satisfactory performance" (WHO, 2000: 73).

Next aspect of poor resource management is physician regulation. Ferdian believed that this matter brought significant impact on Indonesian value for money:

“Even if we had high health expenditure, it wouldn’t bring outcomes as high as Singapore had. It is by reason of many aspects. Such as, issue of physician regulation, which in Singapore, physician is not allowed to work in more than one place. In Indonesia, as we all have known, physician work in many places, for example, a physician works in public hospital, he/she also works in some private hospitals and even many of them have their own private practice in the same time. Yeah... it’s normal for human, wanting more “welfare”... okay, so they become exhausted and this will affect the outcomes of their patients”.

In line with what Ferdian worried of, health personnel burnout brings unexpected, even harmful, consequents for patients as is explained by Chice, et al. in this following excerpt:

“It is well-known that excessive workload, extended working hours, fatigue, and sleep deprivation affect the performance of physicians and nurses. Another example of the impact of inappropriate workload on patient safety relates to the risk of iatrogenic infection” (Chice, et al., 2009: 34).

Another resource management problem were derived from insufficient supply of health personnel like previously mentioned by Ferdian along with access issue as some aspects hampered the readiness of Indonesia toward UHC: “...So we weren’t ready in healthcare personnel supply and access side”. Later he also said, “Okay maybe the number of hospital and other health services has increased, but it isn’t commensurate with the supply of physicians”.

Kanchanachitra, et al., in *Health in Southeast Asia Series 5* (2011), concurred with Ferdian as it might affect health outcomes:

“As elsewhere in the world, most countries in the region (Southeast Asia, including Indonesia) face problems of health workforce shortages and maldistribution that hamper progress towards the health Millennium Development Goals and contribute to inequalities in health outcomes” (Kanchanachitra, et al., 2011: 769).

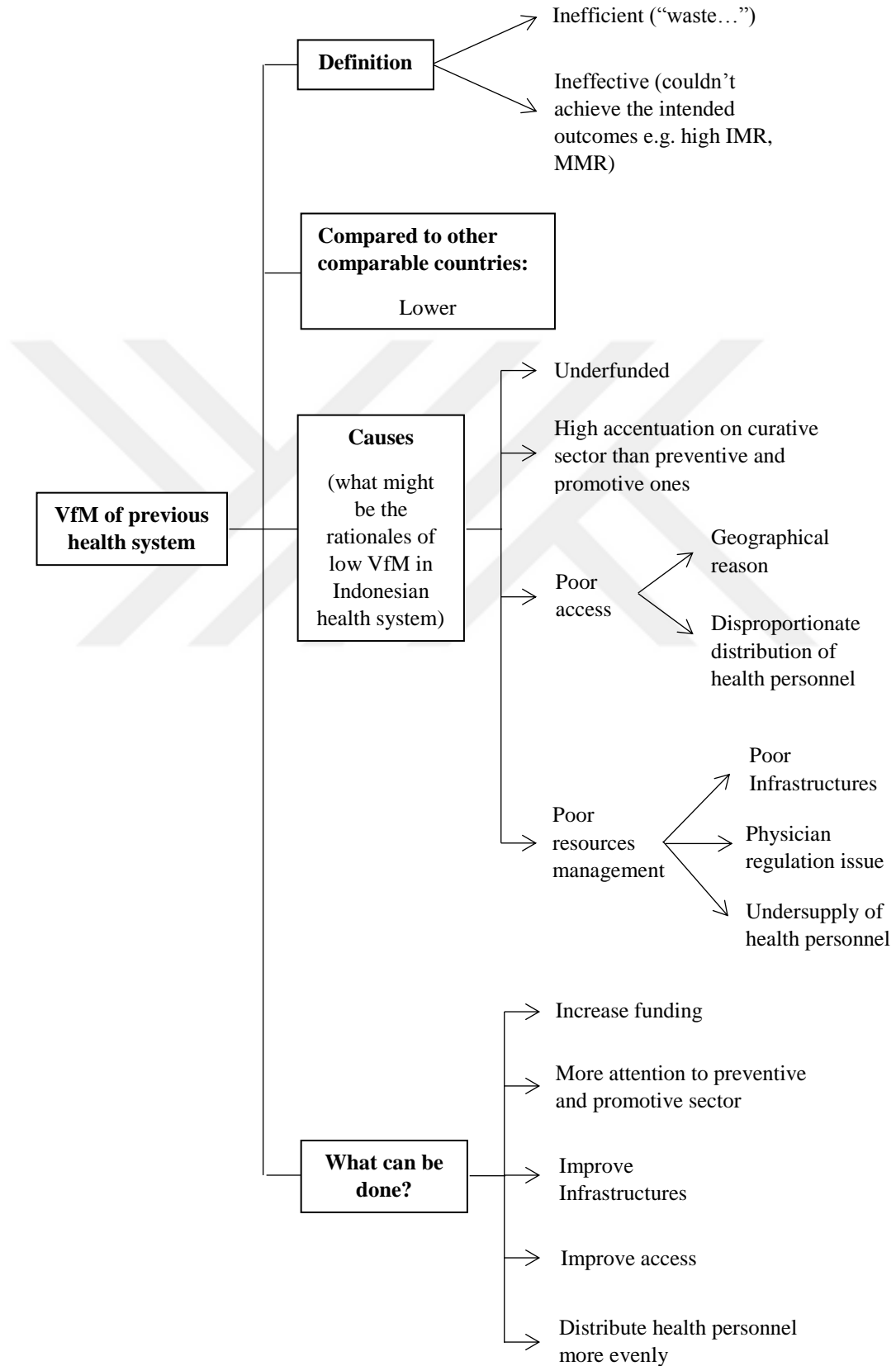
In another part of world, Africa, World Bank, as cited by Zurn et al., reported: “One of the chief problems in Africa that must be overcome if health is to be improved to a

satisfactory level is the undersupply of sufficiently trained personnel” (Zurn, et al., 2002: 5). It affirms the importance of adequate health personnel supply in achieving good outcomes.

In summaries, the value for money of Indonesian health system prior to the implementation of *JKN* can be drawn as the following mind map:



Figure 5.38 Value for money of Indonesian health system prior to the implementation of *JKN* from key informants' perspectives



5.4.2. Value for Money of Current Indonesian Health System: a Preliminary Evaluation

Value for money of current Indonesian health system can be concluded to be low as most of key informants' comments on this appraisal were indicating that Indonesia still has been facing the same condition since long time ago, before the implementation of *JKN*, until present. Similarly, problems that might be the rationales behind the low performance of previous health system are also the problem of *JKN* era as they haven't been solved yet. Today it is even aggravated by other problems that are related to *JKN* itself such as indiscipline attitude of payers and "political will" of government.

Political will issue was brought up by Thabrany when he was asked about the obstacle to implement universal health coverage. He mentioned it several times in interview:

"The biggest obstacle is policy, eh, political will. Political will is whether a country is willing to create good insurance or just take it lightly; creating it just in order to 'okay, now we finally have universal coverage'"

"We can see that the premium amount set by government is too small. So compensation for doctor, such as for primary doctor, 8000 Rupiah per person per month is too small. With compensation amount below the cost, will it bring good services? So, political will is the problem. It is not because we don't have money or cannot afford the cost, but it's rather WE HAVE NO WILL (he said it with pressure)"

"If you are in a condition that makes you don't want to eat anything, even when there is free meal you won't eat it, will you? But if you really want to eat something, even if it is very expensive you will buy it, right? That's it. So this political will is the main obstacle"

"Yes. In my words, to establish something we need "minimum dosage". If you are going to give a medicine to your patient, let's say Paracetamol which the dosage should be 500 mg, then you give him 100 mg, do you think his pain would be relieved? No it would not. Likewise to *JKN*. *JKN*'s first problem is lack of fund, insufficient premium, and those are related to political will"

What has been complained by Thabrany was also expressed by Chazali H. Situmorang, director of Social Security Development Institute (SSDI), as reported by *Jurnal Social Security (JSS)*:

“At that moment, I convinced minister of health that ideal amount of PBI (*Penerima Bantuan Iuran* / contribution beneficiaries)’s contribution was 30000 Rupiah. But when this issue “arrived” to MoH it became a problem since it would deplete MoH’s budgets; how many should be shared for hospital, how about health promotion, at the end she (minister of health) disagreed with 30000 Rupiah, and could only give 23000 Rupiah. This, then became a problem related to sufficient funding for healthcare. Actually, many problems attributed to social security implementation have been identified, the list had also been provided when I was (one of member) in *DJSN (Dewan Jaminan Sosial Nasional / National Social Security Council)*. It depends on government political will, whether they have an intention to do changes related to any regulation that might hamper the implementation of *JKN*”.

Meanwhile, issue of Indiscipline attitudes of payers have been explicated by Ferdian in this following excerpt:

“Middle class society indeed are helped by *JKN* because with small premium they can get treatment even free surgery. We can say the VfM is OK. They can get even more benefits by joining or paying the premium of *JKN* only when they need the health service and after they got the treatment, they will escape. We can find this kind of people in our society” [Ferdian].

When delivering his ideas on what can be done to increase value for money of Indonesian health system he noted it again, “...It is aggravated by indiscipline behaviour in using *JKN*, like what I told you before (some people only pay *JKN* premium when they need it, then escape after they are done with it). So we need to encourage people to fully participate on *JKN*”.

BPJS as the organizer of *JKN* even now has commenced new rules regarding this problem, that is, immediately revoke healthcare service right for people who is late to pay the premium regardless the reason. This step was taken to discipline them and do their

responsibility, as stated by Bayu Wahyudi, the director of law, communication and relation of *BPJS*, to CNN Indonesia:

“We want to educate people to be more discipline and to pay the premium not only when they are sick and need health treatments. (the fact is) when they are healthy, they don’t pay it”

He also explained that *BPJS* is suffering from deficit as there were only 8% of *PBPU* (*Peserta Bukan Penerima Upah* / non-contribution beneficiaries) which means 4 Trillion Rupiah, who paid the premium while 30% of them already used the services:

“They drew off almost 16 Trillion Rupiah of benefits from *BPJS* but premium paid was only 4 Trillion Rupiah. If they keep doing what they want, *BPJS* will continue to get deficit”

Another reason considered by most key informants to be the background of *BPJS* deficit was less interest to preventive and promotive sectors. This issue was regarded as one of previous health system’s main problems and are still one of those of *JKN*. Government needs to pay more attention to preventive and promotive sectors instead of “playing” too much on curative one if they want to secure the budget. The following comments from Ibrahim and Rahmat expressed it clearly:

“Fund, is an incessant thing... have no end, if, like what I explained before, the focus is on curative efforts. If we talk about “sickness”, then the cost would keep increase. Thus, *BPJS*, umm... definitely would continuously lack of fund.” [Rahmat].

“...the implementation of UHC need strong system in preventive and promotive actions. Otherwise, the *BPJS* has to pay more on medical treatment of sick people rather than pay for health maintenance and health promotion.” [Ibrahim].

Mieska Despitari, a researcher from *Litbangkes* (Health Research and Development Agency) of Ministry of Health, published an article in *Kompasiana* titled “Without Optimization of Promotive-Preventive Actions, *JKN* would be ‘broken-down’”. She explicated the condition of promotive and preventive efforts in Indonesia which have been neglected by government and health personnel. She simlized doctors with *angkot*

drivers (*Angkot* is a public transportation run by private firm or person) who always chase for “daily-targeted-money” as they often only do curative actions:

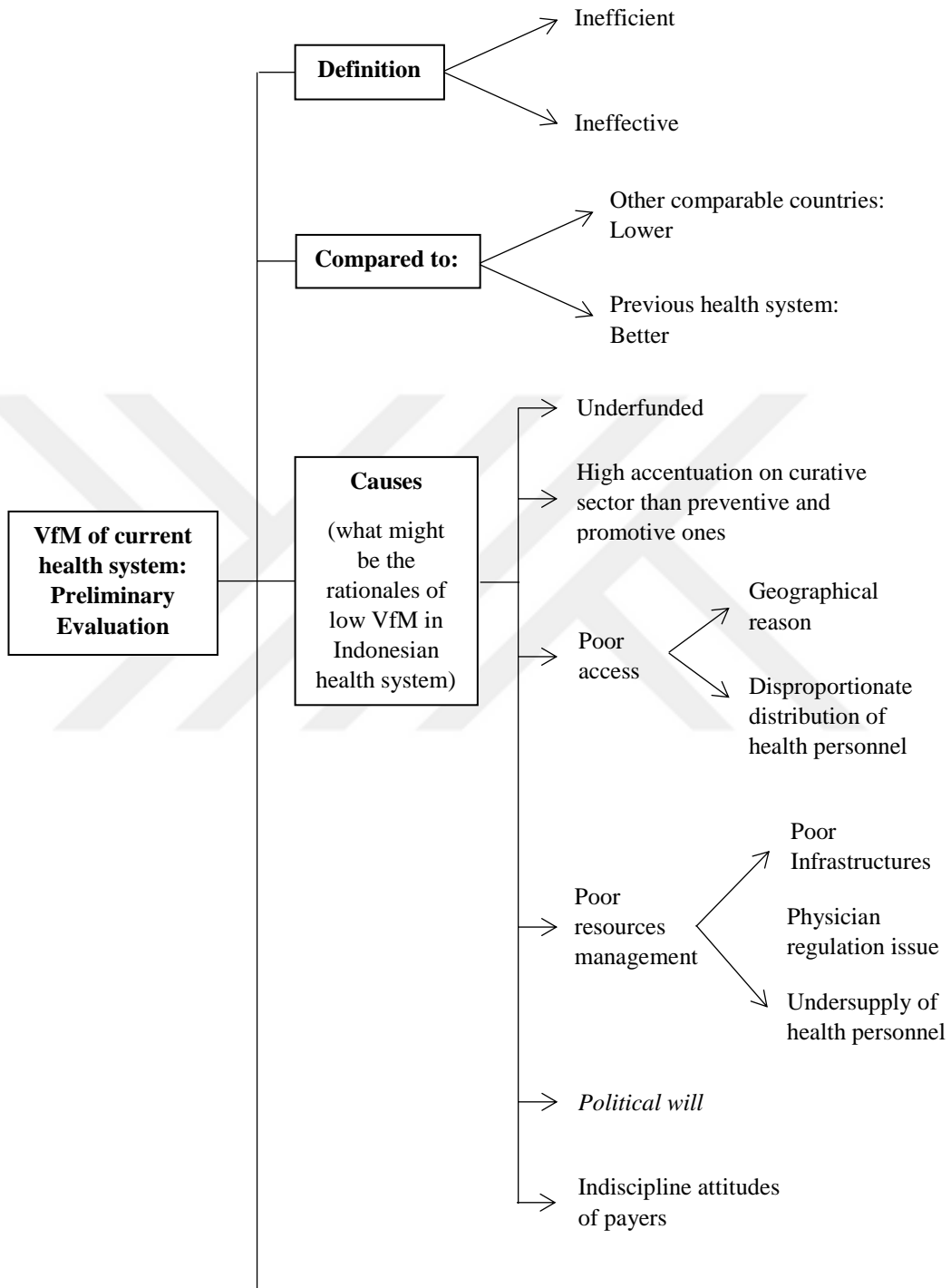
“A doctor or other health personnel should not only do curative actions in delivering their service. Patient education is absolutely necessary, so there should be none of health personnel who is feverishly take care of their patient like *angkot* driver who is chasing ‘daily-targeted-cash’. There should be none who doesn’t give enough time for patient to get consultation and assuming ‘patient is not their level’ (not clever enough to get education). Whereas, in principle, in health personnel’s education program, they are encouraged about their function as an educator who supports promotive and preventive actions.”

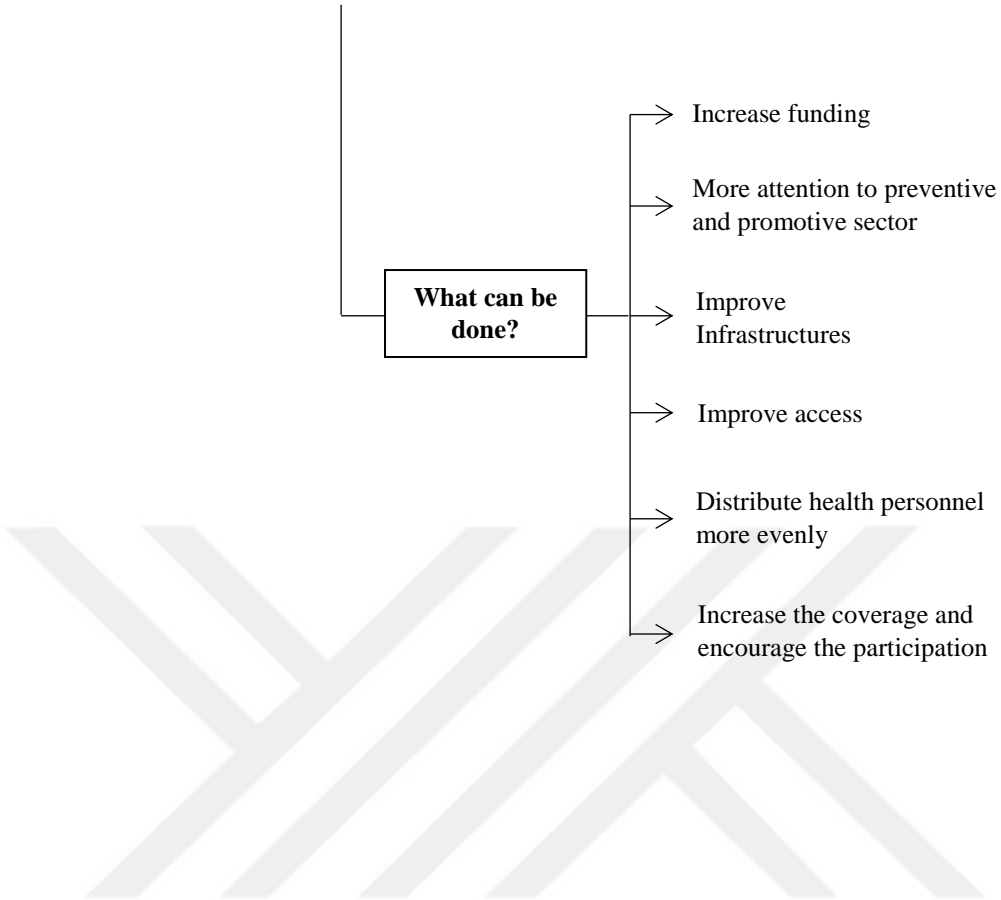
She then disclosed insufficient number of health personnel responsible for health promotion as an example of how promotive and preventive efforts have been left out of the picture:

“However, promotive and preventive efforts through individual counselling won’t be enough. Community counselling are necessarily needed. Here is the role of public health personnel become very important. Ironically, based on data from RIFASKES 2011 (Research for Health facilities), the provision of personnel for health promotion in Indonesia was only 0.46 person per *puskesmas*, even less than 1 person! In reality it might worse as their job might be not functional, because oftentimes this person (who is responsible for carry out health promotion activities) has concurrent task or just simply for administrative stuff in *puskesmas*. There were 5895 out of 8980 *puskesmas* in Indonesia which had no health promotion staff.”

The rest problems are still the same as those of before the implementation of *JKN*. However, most of key informants are positive that *JKN* is better than previous health system since it alleviates people’s burden of out of pocket payment like Ibrahim said, “Yes, it seems better since there was a shift in health budgeting from individual to health insurance. Alleviating people’s burden of out of pocket payments”. Nevertheless, government need to response to all of listed problems in order to either sustain this universal health coverage system or improve people’s health outcomes.

Figure 5.39 Value for money of current Indonesian health system from key informants' perspectives: Preliminary Evaluation





DISCUSSION

This study assesses the health financing system in Indonesia toward the implementation of universal health coverage, focusing on the extent to which Indonesia improved its health outcomes relative to the money spent for it. This healthcare spending therefore needs to be described first, like what has been posed in research objectives: “to define Indonesia’s level of health care spending toward the implementation of universal health coverage”.

Generally, Indonesia’s health expenditure per capita in 2004 – 2013 slightly increased than those of before the reform stage (before 2004). But this level was still viewed as low when it was compared to benchmark countries, either from APEC countries, lower middle income countries (LMIC) or countries with similar human development Index (HDI) level. The share of GDP on healthcare was also low as it spared only 3.1% of its GDP for health in 2013 and even less before 2013. This dragged Indonesia to one of 10% countries in the world with lowest share of GDP on healthcare (Bappenas & NDPA, 2014: 10).

Low level of Indonesian health expenditure was then aggravated by low public share. Total health expenditure was always dominated by private share. Indonesian general government expenditure took part only 29% - 44% of total health expenditure. With this level, it placed bottom rank compared to either APEC, LMIC or Medium HDI countries on public share of total health expenditure, and it happened in all observed years (2004-2013). Indonesia is supposed to increase its health expenditure, primarily from the public share. Although the relation of health expenditure with health outcomes were vary between many researches, unavoidably, health expenditure was one of the most important drivers of health policy decided in a country (Becchetti, et al., 2015: 7-8).

As would be expected from countries with low public share, great amount of out-of-pocket (OoP) expenditure was indeed inevitable. In contrast with Indonesia’s low attainment on health expenditure per capita and health expenditure share of GDP, Indonesian OoP expenditure stood out in all country categories. It ranked the 5th highest among APEC country members and 7th among countries with medium HDI. Lower middle income countries’s out of pocket level were tremendously vary, ranged from

3.42% - 75.82%. Nevertheless, Indonesia OoP expenditures were above the average of LMIC throughout all years.

Although decreasing trend was seen during 2005 – 2012, out-of-pocket expenditure in 2013 was still higher than that in 2004 and the numbers were always above 44, exceeded the 15-20% limit suggested by WHR 2010 to be considered as negligible (WHO, 2010: 42). Thus Indonesia supposed to decrease its out of pocket share, at least less than 40% to avoid catastrophic expenditure (Xu, et al., 2005: 2). This problem should have been reduced with the implementation of UHC, however the data showed that after the implementation of *JKN*, Indonesia's out-of-pocket level tended to be higher. Further research are needed to reveal the possible reasons.

With this low health expenditure per capita and high out-of-pocket level, how the health outcomes generated during those ten years was the next question. Health indicators included in this study were (1) Life expectancy at birth; (2) Probability of dying under age five years (under-five mortality rate) per 1000 live births; (3) Infant Mortality Rate per 1000 live births; (4) Maternal Mortality Ratio per 100 000 live births.

This study found that all benchmark countries savoured positive gain in life expectancy over the past decade. Indonesia added 1.7 years to its life expectancy in total. However, this number was still below the averages of APEC (2.1 years), LMIC (2.9 years) and other countries with similar HDI (2.8 years).

Indonesia had the highest under-five mortality rate among APEC countries with 36.4 deaths (APEC average was 16.5 deaths), both in each year and the average of ten years. The number tended to be better when compared to the averages of LMIC (68.05 deaths) and medium HDI countries (39.5 deaths). Indonesia's achievement (20) in decreasing the rate was much higher than APEC (5.3) and medium HDI averages (13.5), yet slightly less than LMIC average (23.8). No prominent trends were seen either in the rate or gain over those ten years when it was compared to LMIC or medium HDI countries. However, from APEC countries results, the number seemed to be smaller for more developed countries. Infant mortality rate results followed the same patterns as those of under-five mortality rate since they are highly related.

Indonesia was the only one of selected APEC countries which number of MMR (Maternal Mortality Ratio) reached three digits (140 deaths in 2013 and more in previous years), much more than APEC averages (46.6 deaths). Other members never went over 50 deaths since 2007. Nevertheless, Indonesia was better than LMIC in average (262 deaths) and seemed to be fair among countries with similar HDI. Gains generally were modest and no particular trend showed up during the past decade.

These attainments were supposed to indicate the value for money of Indonesian health financing system. Had Indonesia achieved the optimal value for money? This question is the highlight here. This study attempts to answer this question by using Data Envelopment Analysis (DEA) and key informants interview.

From DEA results, Indonesia was found to be inefficient in all years and had the worst decline among APEC members. Furthermore, Indonesia showed quite high slack for its out-of-pocket expenditure which was 0.581 in 2004 and worse in 2013 with 15.690. It indicates that Indonesia might not be able to reach efficiency target despite the proportional augmentation of fairness, that is, reduction of out of pocket payment. Another noteworthy point is that the three highest spenders on health among APEC members, United States; Canada; and Australia, were labelled as inefficient. DEA result reflects that only these three countries had input slacks on health expenditure variable, denotes that they used excessive health expenditure for producing the outcomes.

Similar results were emerged when it was compared to either lower middle income or medium HDI countries. Indonesia never reached efficient score throughout the years and yielded negative gain in efficiency score between 2013 and 2004. However when this attainment compared to other countries' progress during those ten years which can be seen through the Malmquist index summary, it showed piecemeal improvement on technical efficiency with only 0.3% in LMIC category and slightly better (0.9%) in the Malmquist index result of medium HDI category. Indonesia's technological changes score in both benchmark country categories were less than 1.000, indicates that technological development relatively affects nothing to health outcomes over the past decade.

In line with DEA results, key informants with one voice agree that Indonesian has low value for money as they evaluate it as ineffective and inefficient. Key informants also

disclosed some problems that might be the rationales of the low attainment: 1) Underfunding. 2) High accentuation on curative sector than preventive and promotive ones. 3) Poor access that comprises geographical reason and disproportionate distribution of health personnel and; 4) Poor resources management involving infrastructure, physician regulation issue and undersupply of health personnel.

The results of this study are congruent with other related studies. Fuady (2013) explicated that during the reform stage Indonesia had achieve small improvements on availability, accessibility, acceptability and no improvement on quality. Some shortages such as undersupply and unequal distribution of health care professionals, physical and financial constraints to access health care, and poor quality of health care services, were evident. Further he said that with this attainments Indonesia still needs many years to achieve universal health coverage. Another study by Heywood and Choi (2010) agreed that health system performance in Indonesia was low and they found that it was related to low public funding for health and the lack of discretion for health system managers at the district level.

In addition, key informants interview provides some sights on current health system. These comments may be considered as preliminary evaluation of *JKN* as it's just running for 3 years. All of key informants rated Indonesian value for money on health after the implementation of *JKN* as low. However some of them expected it to be better than previous health system. The rationales behind this poor performance were generally the same as problems happened in previous health system, only, one more possible cause was added: *political will* that is related to government intention to increase health status of the people. Pisani, et al. in their study even named Indonesia's path toward UHC as "political journey" since major health policies in Indonesia, especially UHC, were taken as electoral asset and thus became experimentation object of the ruling government (Pisani, et al., 2016).

CONCLUSION

This study tells that Indonesia had low value for money with very small change of technical efficiency over the past decade. Indonesia has relatively low health expenditure, particularly public health expenditure, and high out of pocket share. It scored poorly on all of health indicators used in this study. DEA analysis results exhibited that efficiency of Indonesian health financing system was low compared to all benchmark country categories. Using “Four Types of Efficiency Performances” introduced by Norman & Stoker (1991), Indonesia can be classified as *Marginal Inefficient Unit*, means a DMU that may turn to be effective by adjusting the inputs and outputs (Schrenk, et al., 2012: 51). Key informant interview also shared the same idea: Indonesia has low value for money.

WHO defined three interrelated issues that are critical to move toward universal health coverage: raising fund, reducing out-of-pocket, and using funds efficiently. Based on these criterias, Indonesia had not been addressing these issues well before commencing *JKN*, Indonesian universal health coverage. Data shows that health expenditure per capita in 2014 only 2.4% higher than 2013. Moreover, public health-expenditure in 2014 was 2% lower than that of 2013, means there were only piecemeal raising in funding. Key informants also agree that underfunding is one of many problems hampered the implementation of *JKN*. Out-of-pocket payment still become a significant problem as it never goes below 44%. The newest data even showed that the OoP in 2014 which was after *JKN* has been started, was higher than previous year. And for the third criteria, DEA results clearly indicates that Indonesia had not used the funds efficiently. Key informants believe that current health system is also inefficient.

Some rationales behind these low attainments explicated by key informants including: 1) Underfunding. 2) High accentuation on curative sector than preventive and promotive ones. 3) Poor access that comprises geographical reason and disproportionate distribution of health personnel; 4) Poor resources management involving infrastructure, physician regulation issue and undersupply of health personnel, and; 5) *Political will*. However, deeper research on exploring these reasons is recommended.

Key informants, therefore, advised these following actions to increase the value for money of Indonesian health system in the future: 1) Increase funding; 2) Pay more attention to preventive and promotive sectors; 3) Improve infrastructures and access; 4) Distribute healthcare personnel more evenly; and 5) Increase the coverage and encourage people to fully participate on *JKN* program. In summary, government should pay more serious attention to health improvement of the people since national development would not be possible without good health. Economists have argued that poor health leads to poverty. Moreover, Indonesia should shift their main source of health funding from private to public. In substance, the health system is established to serve people after all.

This study allows for greater understanding of the efficiency of Indonesian spending on healthcare prior to the implementation of universal health coverage. Besides, the results may provide secondary data when the value for money analysis of Indonesian universal health coverage system (*JKN*) undertaken. By comparing the efficiency of a country before and during the implementation of UHC, the effects of UHC on a country's value for money can be observed. Similar studies related to value for money analysis of Indonesian health system after *JKN* fully cover the population are therefore encouraged.

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ANNEXES

ANNEX 1: RESEARCH ACCOMPANYING LETTER



REPUBLIC OF TURKEY
HACETTEPE UNIVERSITY
Graduate School of Social Sciences

13.05.2015

Number: 1316

Subject: Thesis research

TO WHOM IT MAY CONCERN

Dear Mr/Mrs,

Our Master Program student, Ms. Elita Rachmie Dwi Hanggiri, is taking her master thesis research titled “**Health Financing in Indonesia Prior to Universal Health Coverage Implementation: Value for Money Analysis**”. We hereby, kindly ask your permission as she will be doing an interview with associated person in your institution.

Thank you very much in advance for your collaboration, and please do not hesitate to contact me at the below listed numbers.

Sincerely yours,

Yusuf Celik, PhD

Professor in Department of Healthcare Management &

Director of Graduate School of Social Sciences

Hacettepe University, Beytepe Campuss

Ankara – Turkey

E-mail: yucelik@hacettepe.edu.tr

Tel: +90 (535) 726 9287

ANNEX 2: INTERVIEW GUIDE

INTERVIEW GUIDE

“Health Financing in Indonesia Prior to Universal Health Coverage Implementation:
Value for Money Analysis”

© Elita Rachmie Dwi Hanggiri, 2015

Date: ____/____/____

Time: ____

Location: _____

Interviewee / Informant:

Instructions:

- As you ask the following questions, remain mindful of the study’s goal: to explore key informants’ view on health care sector in Indonesia regarding value for money of Indonesia’s late and current health system.
- Probe them throughout the interview to explore additional details about their view by asking, “Please tell me more about that.” or “What do you mean by that?”
- Determine their exact idea especially when they seem not certain or their statements are overlapping with their previous statements by *Paroting* or *Paraphrizing* such, “So, you mean that –repeat what he/she was saying- ?”

Opening:

“Thank you for participating in my research study. As you know, the goal of the study is to define whether Indonesia got back the value of its money spending for health care sector before the implementation of universal health coverage, thus this interview would like to explore your view regarding it and also the current health system as a preliminary assessment. Your participation is completely voluntary and you may terminate this interview at any time. I’ll be recording this interview on a digital voice recorder. Do you have any questions?”

Questions*:

1. What is the meaning of value for money? (*In order to get the same view of value for money definition, after the informant answers this questions, explain the meaning of value for money from your literature's view*).
2. Before the implementation of *JKN/UHC*, how was the achievement of Indonesia's previous health system? (Had it achieved the intended outcome?)
3. Do you think Indonesia's previous value for money was better than other comparable countries?
4. How was Indonesia's readiness for *JKN/UHC*? (Cost, supply, access, etc.)
5. What do you think the main problems of previous health system could be?
6. What do you think the main problem of current health system can be?
7. Do you think the current health system will be more effective than the previous one? Why?
8. What can be done to increase Indonesia's value for money in the future?

* Since it is a semi-structured interview, the interviewer doesn't have to follow these questions one-by-one or exactly as they were written. They may be changed, added with other explanatory questions and so on, as there are possibilities that researcher might come up with other questions during the interview.

Indonesian Version

Pertanyaan:




1. Apakah definisi value for money menurut anda? (*untuk mendapatkan pandangan yang sama mengenai definisi value for money, setelah informan menjawab pertanyaan ini, jelaskan arti value for money dari literature yang dipakai dalam penelitian ini*).
2. Bagaimanakah pencapaian dari sistem kesehatan Indonesia **sebelum** implementasi *JKN*? (apakah sudah mencapai outcome yang diinginkan).
3. Menurut anda, apakah value for money sistem kesehatan Indonesia **sebelum diterapkannya** *JKN* lebih baik dari negara lain yang komparabel (misal Philippines, Viet Nam, Sri Lanka, India, dsb)?

4. Bagaimanakah kesiapan Indonesia dalam menjelang JKN (biaya, akses, supply pekerja kesehatan, obat, alkes, dsb.)?
5. Menurut anda, apa masalah utama dari sistem kesehatan **sebelum** JKN?
6. Menurut anda, apa masalah utama dari sistem kesehatan **era** JKN (sekarang)?
7. Apakah menurut anda JKN akan lebih efektif dari sistem kesehatan yang sebelumnya? Mengapa?
8. Apa saja yang perlu dilakukan Indonesia untuk dapat mencapai value for money yang lebih baik kedepannya?





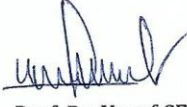
Closing:

“Thank you for your time to participate in this interview. Your contribution will help us to better understand health financing in Indonesia before the implementation of *JKN* so that we can take many lessons when we want to improve the current health system. I will contact you again and send the interview transcripts in case there are some issues you want to confirm later.”


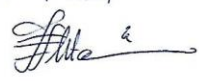

ANNEX 3: ETİK KURUL İZİN MUAFİYETİ FORMU (TÜRKÇE)

	HACETTEPE ÜNİVERSİTESİ SOSYAL BİLİMLER ENSTİTÜSÜ TEZ ÇALIŞMASI ETİK KURUL İZİN MUAFİYETİ FORMU
HACETTEPE ÜNİVERSİTESİ SOSYAL BİLİMLER ENSTİTÜSÜ SAĞLIK YÖNETİMİ ANABİLİM DALI BAŞKANLIĞI'NA	
Tarih: 14/04/2017	
Tez Başlığı / Konusu: Health Financing in Indonesia Prior to Universal Health Coverage Implementation: Value for Money Analysis	
Yukarıda başlığı/konusu gösterilen tez çalışmam:	
<ol style="list-style-type: none"> 1. İnsan ve hayvan üzerinde deney niteliği taşımamaktadır, 2. Biyolojik materyal (kan, idrar vb. biyolojik sıvılar ve numuneler) kullanılmasını gerektirmemektedir. 3. Beden bütünlüğüne müdahale içermemektedir. 4. Gözlemsel ve betimsel araştırma (anket, ölçek/skala çalışmaları, dosya taramaları, veri kaynakları taraması, sistem-model geliştirme çalışmaları) niteliğinde değildir. 	
Hacettepe Üniversitesi Etik Kurullar ve Komisyonlarının Yönergelerini inceledim ve bunlara göre tez çalışmamın yürütülebilmesi için herhangi bir Etik Kuruldan izin alınmasına gerek olmadığını; aksi durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.	
Gereğini saygılarımla arz ederim.	
Tarih ve İmza	
Adı Soyadı: Elita Rachmie Dwi HANGGIRI Öğrenci No: N12123525 Anabilim Dalı: Sağlık Yönetimi Programı: Sağlık Yönetimi Statüsü: <input checked="" type="checkbox"/> Y.Lisans <input type="checkbox"/> Doktora <input type="checkbox"/> Bütünleşik Dr.	14.04.2017 
DANIŞMAN GÖRÜŞÜ VE ONAYI	
<u>Bu çalışmanın yapılabilmesi için Etik Kurul İznine gerek yoktur.</u>	
	
Prof. Dr. Yusuf ÇELİK (Unvan, Ad Soyad, İmza)	
Detaylı Bilgi: http://www.sosyalbilimler.hacettepe.edu.tr Telefon: 0-312-2976860 Faks: 0-3122992147 E-posta: sosyalbilimler@hacettepe.edu.tr	




ANNEX 4: ETİK KURUL İZİNİ MUAFİYETİ FORMU (İNGİLİZCE)

 <p>HACETTEPE UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES ETHICS BOARD WAIVER FORM FOR THESIS WORK</p>												
<p>HACETTEPE UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES HEALTHCARE MANAGEMENT TO THE DEPARTMENT PRESIDENCY</p> <p style="text-align: right;">Date: 14/04/2017</p> <p>Thesis Title / Topic: Health Financing in Indonesia Prior to Universal Health Coverage Implementation: Value for Money Analysis</p> <p>My thesis work related to the title/topic above:</p> <ol style="list-style-type: none"> 1. Does not perform experimentation on animals or people. 2. Does not necessitate the use of biological material (blood, urine, biological fluids and samples, etc.). 3. Does not involve any interference of the body's integrity. 4. Is not based on observational and descriptive research (survey, measures/scales, data scanning, system-model development). <p>I declare, I have carefully read Hacettepe University's Ethics Regulations and the Commission's Guidelines, and in order to proceed with my thesis according to these regulations I do not have to get permission from the Ethics Board for anything; in any infringement of the regulations I accept all legal responsibility and I declare that all the information I have provided is true.</p> <p>I respectfully submit this for approval.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;"></td> <td style="text-align: right;">Date and Signature</td> </tr> <tr> <td>Name Surname: Elita Rachmie Dwi HANGGIRI</td> <td style="text-align: right;">14.04.2017</td> </tr> <tr> <td>Student No: N12123525</td> <td style="text-align: right;"></td> </tr> <tr> <td>Department: Healthcare Management</td> <td></td> </tr> <tr> <td>Program: Healthcare Management</td> <td></td> </tr> <tr> <td>Status: <input checked="" type="checkbox"/> Masters <input type="checkbox"/> Ph.D. <input type="checkbox"/> Integrated Ph.D.</td> <td></td> </tr> </table>		Date and Signature	Name Surname: Elita Rachmie Dwi HANGGIRI	14.04.2017	Student No: N12123525		Department: Healthcare Management		Program: Healthcare Management		Status: <input checked="" type="checkbox"/> Masters <input type="checkbox"/> Ph.D. <input type="checkbox"/> Integrated Ph.D.	
	Date and Signature											
Name Surname: Elita Rachmie Dwi HANGGIRI	14.04.2017											
Student No: N12123525												
Department: Healthcare Management												
Program: Healthcare Management												
Status: <input checked="" type="checkbox"/> Masters <input type="checkbox"/> Ph.D. <input type="checkbox"/> Integrated Ph.D.												
<p><u>ADVISER COMMENTS AND APPROVAL</u></p> <p><u>There is no need for The Approval for Ethic Committee</u></p> <p style="text-align: center;"></p> <p style="text-align: center;">Prof. Dr. Yusuf ÇELİK</p> <p style="text-align: center;">(Title, Name Surname, Signature)</p>												

ANNEX 5: ORJİNALLİK RAPORU (TÜRKÇE)

 <p>HACETTEPE ÜNİVERSİTESİ SOSYAL BİLİMLER ENSTİTÜSÜ YÜKSEK LİSANS/DOKTORA TEZ ÇALIŞMASI ORJİNALLİK RAPORU</p>	
<p>HACETTEPE ÜNİVERSİTESİ SOSYAL BİLİMLER ENSTİTÜSÜ SAĞLIK YÖNETİMİ ANABİLİM DALI BAŞKANLIĞI'NA</p>	
Tarih:14/04/2017	
<p>Tez Başlığı / Konusu: EVRENSEL SAĞLIK KAPSAMI UYGULAMASINDAN ÖNCE ENDONEZYA'DA SAĞLIK FİNANSMANI: VALUE FOR MONEY ANALİZİ</p> <p>Yukarıda başlığı/konusu gösterilen tez çalışmamın a) Kapak sayfası, b) Giriş, c) Ana bölümler ve d) Sonuç kısımlarından oluşan toplam 112 sayfalık kısmına ilişkin, 14/04/2017 tarihinde şahsım/tez danışmanım tarafından Turnitin adlı intihal tespit programından aşağıda belirtilen filtrelemeler uygulanarak alınmış olan orijinallik raporuna göre, tezin benzerlik oranı % 7 'dir.</p> <p>Uygulanan filtrelemeler:</p> <ol style="list-style-type: none"> 1- Kabul/Onay ve Bildirim sayfaları hariç, 2- Kaynakça hariç 3- Alıntılar hariç/dâhil 4- 5 kelimedenden daha az örtüşme içeren metin kısımları hariç <p>Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Tez Çalışması Orijinallik Raporu Alınması ve Kullanılması Uygulama Esasları'nı inceledim ve bu Uygulama Esasları'nda belirtilen azami benzerlik oranlarına göre tez çalışmamın herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.</p> <p>Gereğini saygılarımla arz ederim.</p>	
Tarih ve İmza	
<p>Adı Soyadı: ELİTA RACHMIE DWI HANGGIRI</p> <p>Öğrenci No: N12123525</p> <p>Anabilim Dalı: SAĞLIK YÖNETİMİ</p> <p>Programı: SAĞLIK YÖNETİMİ</p> <p>Statüsü: <input checked="" type="checkbox"/> Y.Lisans <input type="checkbox"/> Doktora <input type="checkbox"/> Bütünleşik Dr.</p>	<p>14.04.2017</p> 
<p>DANIŞMAN ONAYI</p> <p style="text-align: center;">UYGUNDUR.</p>  <p style="text-align: center;">PROF. DR. YUSUF ÇELİK</p>	

ANNEX 6: ORIJİNALLIK RAPORU (İNGİLİZCE)

 <p>HACETTEPE UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES THESIS/DISSERTATION ORIGINALITY REPORT</p>
<p>HACETTEPE UNIVERSITY GRADUATE SCHOOL OF SOCIAL SCIENCES TO THE DEPARTMENT OF HEALTHCARE MANAGEMENT</p>
Date: 14/04/2017
<p>Thesis Title / Topic: HEALTH FINANCING IN INDONESIA PRIOR TO UNIVERSAL HEALTH COVERAGE IMPLEMENTATION: VALUE FOR MONEY ANALYSIS</p> <p>According to the originality report obtained by myself/my thesis advisor by using the Turnitin plagiarism detection software and by applying the filtering options stated below on 14/04/2017 for the total of 112 pages including the a) Title Page, b) Introduction, c) Main Chapters, and d) Conclusion sections of my thesis entitled as above, the similarity index of my thesis is 7 %.</p> <p>Filtering options applied:</p> <ol style="list-style-type: none"> 1. Approval and Declaration sections excluded 2. Bibliography/Works Cited excluded 3. Quotes excluded 4. Match size up to 5 words excluded <p>I declare that I have carefully read Hacettepe University Graduate School of Social Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.</p> <p>I respectfully submit this for approval.</p>
<p style="text-align: right;">Date and Signature</p> <p>Name Surname: ELITA RACHMIE DWI HANGGIRI _____</p> <p>Student No: N12123525 _____</p> <p>Department: HEALTHCARE MANAGEMENT _____</p> <p>Program: HEALTHCARE MANAGEMENT _____</p> <p>Status: <input checked="" type="checkbox"/> Masters <input type="checkbox"/> Ph.D. <input type="checkbox"/> Integrated Ph.D. _____</p> <p style="text-align: right;">14.04.2017 </p>
<p><u>ADVISOR APPROVAL</u></p> <p style="text-align: center;">APPROVED.</p> <p style="text-align: center;"></p> <p style="text-align: center;">_____ PROF. DR. YUSUF ÇELİK</p>