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KAJIAN EKONOMI DAN KEUANGAN

■ **Revitalisasi Investasi Pengembangan Energi Panas Bumi di Indonesia**

■ **Analisis Kinerja Program Kredit Usaha Rakyat dalam Perspektif Pemangku Kepentingannya**

■ ***The Impact of Taxes on Production on Income Distribution in Indonesia***

■ **Analisis Kemampuan Pendanaan Pemerintah Daerah dalam Rangka Memberikan Jaminan Kesehatan bagi Masyarakat Miskin**

■ **Pengaruh Defisit Anggaran terhadap Defisit Transaksi Berjalan di Indonesia**

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KAJIAN

EKONOMI KEUANGAN



Pusat Kebijakan Ekonomi Makro
Badan Kebijakan Fiskal
Kementerian Keuangan RI

■ Ragimun (Badan Kebijakan Fiskal, Kementerian Keuangan)
**Revitalisasi Investasi Pengembangan Energi Panas Bumi
di Indonesia**

■ Mohamad Nasir (Badan Kebijakan Fiskal, Kementerian Keuangan)
**Analisis Kinerja Program Kredit Usaha Rakyat dalam Perspektif
Pemangku Kepentingannya**

■ Kunta Nugraha (Badan Kebijakan Fiskal, Kementerian Keuangan)
The Impact of Taxes on Production on Income Distribution in Indonesia

■ Sri Lestari Rahayu (Badan Kebijakan Fiskal, Kementerian Keuangan)
**Analisis Kemampuan Pendanaan Pemerintah Daerah dalam
Rangka Memberikan Jaminan Kesehatan bagi Masyarakat Miskin**

■ Muhammad Afdi Nizar (Badan Kebijakan Fiskal, Kementerian Keuangan)
**Pengaruh Defisit Anggaran terhadap Defisit Transaksi Berjalan
di Indonesia**

KATA SAMBUTAN

Kami panjatkan puji syukur kepada Tuhan Yang Maha Esa atas terbitnya Kajian Ekonomi dan Keuangan edisi ini ke hadapan pembaca sekalian. Pada edisi ini, kami menyajikan berbagai topik yang berkaitan dengan analisis dan dampak kebijakan publik di bidang ekonomi dan keuangan negara.

Kajian pada volume kali ini diisi oleh berbagai topik tulisan yaitu Pengembangan Energi Panas Bumi; Kinerja Program Kredit Usaha Rakyat; Dampak Pajak Tidak Langsung terhadap Distribusi Pendapatan; Kemampuan Pendanaan Pemerintah Daerah dalam Rangka Memberikan Jaminan Kesehatan, serta Pengaruh Defisit Anggaran terhadap Defisit Transaksi Berjalan.

Demikianlah kata pengantar yang dapat kami sampaikan. Ibarat peribahasa tiada gading yang tak retak, maka kami menyadari kajian ini tentunya masih terdapat kekurangan baik yang disengaja maupun yang tidak kami sengaja. Oleh karena itu, kami mengharapkan masukan dari para pembaca guna perbaikan di masa yang akan datang. Selanjutnya, kami berharap jurnal ini dapat memberikan manfaat kepada para pembaca sekalian. Selamat membaca!

Jakarta, Maret 2013
Dewan Redaksi

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<i>Kata kunci bersumber dari artikel. Lembar abstrak ini boleh difotokopi tanpa izin dan biaya</i>
ABSTRAK
Ragimun. (Badan Kebijakan Fiskal, Kementerian Keuangan) Revitalisasi Investasi Pengembangan Energi Panas Bumi di Indonesia Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 1 – 24 <i>Abstrak</i> <i>Indonesia sebagai negara yang sedang membangun, memerlukan energi listrik yang sangat banyak. Oleh karena itu diperlukan pemanfaatan dari berbagai sumber untuk mencukupinya. Selama ini energi dari sumber fosil mendominasi pemenuhan energi nasional. Namun sumber energi fosil ini lambat laun akan habis, sehingga diperlukan energi terbarukan, yaitu antara lain dari energi geothermal. Energi ini disamping ramah lingkungan juga mempunyai cadangan yang sangat banyak. Tercatat 26 persen energi geothermal dunia ini berada di Indonesia. Akan tetapi sampai saat ini pengembangan energi geothermal baru berkisar 4 persen. Kendala utamanya adalah masalah investasi yang masih terbatas, serta reformasi kebijakan dan institusi untuk meningkatkan investasi. Oleh karena itu perlu dilakukan revitalisasi investasi energi geothermal melalui beberapa insentif fiskal maupun non fiskal yang berupa daya tarik investasi seperti harga jual energi listrik panas bumi yang menarik. Saat ini harga jual energi listrik panas bumi sebesar US\$0,97. Hal ini perlu dievaluasi kembali, agar menarik investor pada pengembangan geothermal di Indonesia.</i> <i>Kata Kunci : energi geothermal, kebutuhan energi nasional, kecukupan energi listrik nasional, revitalisasi investasi</i>
Nasir, Mohamad. (Badan Kebijakan Fiskal, Kementerian Keuangan) Analisis Kinerja Program Kredit Usaha Rakyat dalam Perspektif Pemangku Kepentingannya Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 25 – 44 <i>Abstrak</i> <i>UMKM memiliki peran yang penting bagi perekonomian Indonesia, seperti menyerap tenaga kerja yang banyak dan berkontribusi yang signifikan terhadap PDB. Untuk mendukung UMKM lebih produktif dan berkembang, Pemerintah melaksanakan program KUR pada tahun 2007, sebuah program kredit bagi UMKM yang feasible dan not bankable, serta memiliki fasilitas penjaminan kredit. Pemerintah bekerjasama dengan beberapa bank dalam penyaluran dan PT Askindo (Persero) dan Perum Jamkrindo dalam penjaminan kreditnya. KUR telah berjalan lebih dari 5 tahun. Pertanyaannya, bagaimana kinerja KUR dalam perspektif para stakeholder-</i>

MAJALAH KAJIAN EKONOMI DAN KEUANGAN**ISSN 1410-3249****KEK Terakreditasi****(No. Akreditasi : 467/AU3/P2MI-LIPI/08/2012)****Volume 17 Nomor 1, Maret 2013*****Kata kunci bersumber dari artikel. Lembar abstrak ini boleh difotokopi tanpa izin dan biaya*****ABSTRAK**

nya selama ini ? Dengan menggunakan analisis deskriptif diperoleh hasil bahwa bagi Pemerintah, KUR selama periode 2007-2012 telah tersalurkan sebesar Rp.97,6 triliun, diakses oleh 7,6 juta debitur. Bagi bank, KUR memberikan keuntungan karena suku bunga 13% untuk retail dan 22% untuk mikro masih di atas SBDK. Di samping itu, adanya penjaminan kredit dapat mengurangi kerugian bank dan memberikan kesempatan untuk melakukan penetrasi pasar atau debitur baru. Bagi perusahaan penjamin, KUR dapat meningkatkan pendapatan penjaminan. KUR juga memberikan laba bersih bagi Perum Jamkrindo sekitar Rp.738,6 miliar, namun KUR memberikan kerugian sebesar Rp.112,5 miliar bagi PT Askrindo.

Kata Kunci : bankable, feasible, kredit, laba, penjaminan, suku bunga

Nugraha, Kunta. (Badan Kebijakan Fiskal, Kementerian Keuangan)

The Impact of Taxes on Production on Income Distribution in Indonesia

Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 45 - 56

Abstrak

Perekonomian Indonesia tumbuh secara cepat sejak tahun 2000, namun ketimpangan pendapatan memburuk sejak tahun 2001. Salah satu kebijakan pemerintah untuk memperbaiki ketimpangan pendapatan adalah melalui pemungutan pajak. Tulisan ini mengevaluasi pajak atas produksi dan dampaknya terhadap distribusi pendapatan menggunakan model Scutella. Dampak terhadap distribusi pendapatan dihitung dengan menentukan beban pajak untuk setiap kelompok pendapatan rumah tangga. Data utama yang digunakan adalah survei sosial ekonomi nasional (Susenas) dan tabel Input-Output. Hasil penting yang diperoleh adalah pajak atas produksi memperburuk ketimpangan pendapatan dan pajak tersebut regresif, terutama untuk rumah tangga menengah ke bawah. Hasil lainnya konsumen rokok mempunyai beban pajak atas produksi yang paling berat. Dengan demikian, saran dari tulisan ini adalah pajak atas produksi di Indonesia memperburuk ketimpangan pendapatan dan semakin tinggi tarif pajak efektif (effective tax rate) tidak berarti bahwa beban pajak atas produksi terhadap konsumen juga semakin tinggi.

Kata Kunci: beban pajak, distribusi pendapatan, pajak atas produksi, tarif pajak efektif

MAJALAH KAJIAN EKONOMI DAN KEUANGAN ISSN 1410-3249 KEK Terakreditasi (No. Akreditasi : 467/AU3/P2MI-LIPI/08/2012) Volume 17 Nomor 1, Maret 2013
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ABSTRAK
Rahayu, Sri Lestari. (Badan Kebijakan Fiskal, Kementerian Keuangan) Analisis Kemampuan Pendanaan Pemerintah Daerah dalam Rangka Memberikan Jaminan Kesehatan bagi Masyarakat Miskin Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 57 – 90 Abstrak <i>Dalam tahun 2010 penduduk Indonesia yang memiliki jaminan kesehatan baru mencapai 139.424.348 jiwa (59,07 persen dari jumlah penduduk), sedang sisanya 40,93 persen belum memiliki jaminan kesehatan. Provinsi Nangroe Aceh Darussalam dan Sulawesi Selatan 100 persen penduduknya sudah memiliki jaminan kesehatan, diikuti oleh Provinsi Sumatera Selatan dan Bali masing-masing sebesar 99,60 persen dan 99,56 persen. Ke depan, apakah pendanaan jaminan kesehatan sebaiknya masih akan diberikan sesuai dengan kapitasi jumlah penduduk, atau dialihkan kepada peningkatan kualitas pelayanan kesehatan di puskesmas, rumah sakit, pemberian insentif bagi tenaga medis, penyediaan obat-obatan, maupun sarana dan prasarannya sesuai dengan kemampuan Pemerintah Daerah, sehingga seluruh masyarakat dapat memanfaatkan fasilitas pelayanan kesehatan yang ditentukan.</i> <i>Kata Kunci : insentif, jamkesmas, pemma</i>
Nizar, Muhammad Afdi. (Badan Kebijakan Fiskal, Kementerian Keuangan) Pengaruh Defisit Anggaran terhadap Defisit Transaksi Berjalan di Indonesia Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 91 – 106 Abstrak <i>Studi ini bertujuan untuk mengetahui pengaruh defisit anggaran terhadap defisit transaksi berjalan di Indonesia dalam periode tahun 1990 – 2012. Dengan menggunakan data time series kuartalan dan model VAR, hasil studi ini menunjukkan bahwa : (i) defisit anggaran berpengaruh positif terhadap defisit transaksi berjalan. Dalam periode 1990 – 2012 pengaruh defisit anggaran relatif kecil dan berlangsung cepat (satu kuartal), sedangkan dalam periode 1990 – 1997 pengaruhnya lebih besar dan dengan durasi yang lebih panjang (dua kuartal atau satu semester), dan (ii) hasil studi ini mengkonfirmasi dan sejalan dengan hipotesis defisit kembar (twin deficit hypothesis). Oleh karena itu, pemerintah perlu menempuh langkah-langkah</i>

MAJALAH KAJIAN EKONOMI DAN KEUANGAN ISSN 1410-3249 KEK Terakreditasi (No. Akreditasi : 467/AU3/P2MI-LIPI/08/2012) Volume 17 Nomor 1, Maret 2013
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ABSTRAK
<i>konkret dengan menekan impor minyak (BBM). Karena impor BBM selain berpotensi menambah defisit transaksi berjalan juga berimplikasi menambah besaran subsidi BBM (dan defisit) dalam APBN.</i> <i>Kata Kunci : defisit anggaran, defisit transaksi berjalan, hipotesis defisit kembar, neraca pembayaran</i>

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ABSTRACT

Ragimun. (Badan Kebijakan Fiskal, Kementerian Keuangan)

Revitalisasi Investasi Pengembangan Energi Panas Bumi di Indonesia

Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 1 - 24

Abstract

Premises as a country that is being build, requiring electrical energy very much. It is therefore necessary for the utilization of various sources of insufficiency. During this energy from fossil sources dominate the national energy needs. But this fossil energy sources will eventually run out. So that the necessary renewable energy, among other things of geothermal energy. This energy is in addition to friendly neighborhood also has a reserve that very much. Recorded 26 percent of world geothermal energy in Indonesia. However, until recently the development of new geothermal energy range from 4 percent. The main obstacle is the issue of investment is still limited, as well as policy and institutional reforms to increase investment. It is therefore necessary to revitalize geothermal energy investments through several fiscal and non fiscal incentives in the form of investment attraction such as the selling price of electricity energy geothermal interest. Current selling price of geothermal electrical energy for U.S. \$ 0.97. This needs to be re-evaluated, in order to attract investors in geothermal development in Indonesia.

Keywords: geothermal energy, national energy needs, revitalization of investment, the adequacy of the national electric energy

Nasir, Mohamad. (Badan Kebijakan Fiskal, Kementerian Keuangan)

Analisis Kinerja Program Kredit Usaha Rakyat dalam Perspektif Pemangku Kepentingannya

Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 25 - 44

Abstract

SMEs have significant role for Indonesian economic, such as employing many labors and significant contribution to GDP. To support them more productive, Government launched a KUR in 2007, a credit program for SMEs that is feasible but not bankable, and has credit guarantee facility. Govenrment has cooperated with some Banks for credit and with PT Askrindo and Perum Jamkrindo for credit guarantee. Since 2007, KUR has been run over 5 years. The question is how the performance of KUR viewed by Government, Banks, and Credit Guarantee Enterprises perspectives. Bu using descriptive analysis methode, the research shows that for Government perspective, KUR has

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ABSTRACT

distributed credit around Rp.97.6 triliun for around 7.6 million debtors during 2007-2013. For perspective of Banks, KUR has given profit because its interest rate (13% for retail and 22% for mikro) above basic lending rate of banks. Credit guarantee facility also has supported banks to penetrate new market or new debtors. For credit guarantee enterprises, KUR has been able to increase their income. KUR has given net profit for Perum Jamkrindo Rp.738.6 billion, but has given net loss for PT Askrindo around Rp.112.5 billion.

Keyword : bankable, credit, feasible, guarantee, interest, profit

Nugraha, Kunta. (Badan Kebijakan Fiskal, Kementerian Keuangan)

The Impact of Taxes on Production on Income Distribution in Indonesia

Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 45 - 56

Abstract

The Indonesian economy has grown significantly since 2000, but income inequality has increased since 2001. One of the possible government tools to improve income inequality is through taxation. This paper evaluates taxes on production and their impact on income distribution using Scutella methods. The impact of taxes on production on household income distribution provides the measure for determining the tax burden for each household income groups. This method uses the National Socioeconomic Survey and the Input-Output Table for major data sources. The key finding is that taxes on production worsen income distribution and the form of this tax is regressive, especially for lower and middle income households. The other key finding is that the consumers of cigarettes have the highest burden of taxes on production. The results suggest that Indonesian taxes on production worsen income inequality and the higher effective tax rates do not mean the higher the burden of taxes on production for consumers.

Keywords: burden of tax, effective tax rates, income distribution, taxes on production

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ABSTRACT

Rahayu, Sri Lestari. (Badan Kebijakan Fiskal, Kementerian Keuangan)

Analisis Kemampuan Pendanaan Pemerintah Daerah dalam Rangka Memberikan Jaminan Kesehatan bagi Masyarakat Miskin

Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 57 – 90

Abstract

In the year 2010 the number of citizens who have health coverage reaching 139 424 348 or 59.07 percent of Indonesia's population, while the remaining 40.93 percent do not have health insurance. Province of Nangroe Aceh Darussalam and South Sulawesi entire population already have health insurance, while that of South Sumatera and Bali respectively reached 99.60 percent and 99.56 percent.

Health insurance needs to be evaluated, whether based on capitation funding awarded in accordance with the number of people, or diverted to improving the quality of health services in health centers, hospitals, incentives for medical personnel, provision of medicines, as well as the procurement of medical equipments in accordance with the local government, so that the whole communities to utilize health care facilities specified.

Keywords : funding, health insurance for the poor, regional government

Nizar, Muhammad Afdi. (Badan Kebijakan Fiskal, Kementerian Keuangan)

Pengaruh Defisit Anggaran terhadap Defisit Transaksi Berjalan di Indonesia

Kajian Ekonomi dan Keuangan Volume 17 Nomor 1, Maret 2013, Halaman 91 – 106

Abstract

This study aims to determine the effect of budget deficits on the current accounts deficit in Indonesia during 1990 – 2012. Based on quarterly time series data and using VAR model, the results of this study indicate that : (i) a positive effect of the budget deficit on the current account deficit. In the period 1990 - 2012 the effect of budget deficits is relatively small and rapid (one quarter), while in the period 1990-1997 budget deficits had greater influence with a longer duration (a semester) on current accounts deficit, and (ii) the results of this study confirm and in line with the twin deficit hypothesis. Therefore, the government should take concrete steps to reduce imports of oil (fuel). Because of fuel imports potentially add to the current

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ABSTRACT
<i>accounts deficit and also the amount of fuel subsidies (and deficit) in the state budget.</i> <i>Keywords: balance of payments, budget deficit, current accounts deficit, twin deficit hypothesis</i>

THE IMPACT OF TAXES ON PRODUCTION ON INCOME DISTRIBUTION IN INDONESIA¹

Dampak Pajak atas Produksi terhadap Distribusi Pendapatan di Indonesia

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ABSTRAK

Perekonomian Indonesia tumbuh secara cepat sejak tahun 2000, namun ketimpangan pendapatan memburuk sejak tahun 2001. Salah satu kebijakan pemerintah untuk memperbaiki ketimpangan pendapatan adalah melalui pemungutan pajak. Tulisan ini mengevaluasi pajak atas produksi dan dampaknya terhadap distribusi pendapatan menggunakan model Scutella. Dampak terhadap distribusi pendapatan dihitung dengan menentukan beban pajak untuk setiap kelompok pendapatan rumah tangga. Data utama yang digunakan adalah survei sosial ekonomi nasional (Susenas) dan tabel Input-Output. Hasil penting yang diperoleh adalah pajak atas produksi memperburuk ketimpangan pendapatan dan pajak tersebut regresif, terutama untuk rumah tangga menengah ke bawah. Hasil lainnya konsumen rokok mempunyai beban pajak atas produksi yang paling berat. Dengan demikian, saran dari tulisan ini adalah pajak atas produksi di Indonesia memperburuk ketimpangan pendapatan dan semakin tinggi tarif pajak efektif (effective tax rate) tidak berarti bahwa beban pajak atas produksi terhadap konsumen juga semakin tinggi.

Kata Kunci : beban pajak, distribusi pendapatan, pajak atas produksi, tarif pajak efektif

ABSTRACT

The Indonesian economy has grown significantly since 2000, but income inequality has increased since 2001. One of the possible government tools to improve income inequality is through taxation. This paper evaluates taxes on production and their impact on income distribution using Scutella methods. The impact of taxes on production on household income distribution provides the measure for determining the tax burden for each household income groups. This method uses the National Socioeconomic Survey and the Input-Output Table for major data sources. The key finding is that taxes on production worsen income distribution and the form of this tax is regressive, especially for lower and middle income households. The other key finding is that the consumers of cigarettes have the highest burden of taxes on production. The results suggest that Indonesian taxes on production worsen income inequality and the higher effective tax rates do not mean the higher the burden of taxes on production for consumers.

Keywords: burden of tax, effective tax rates, income distribution, taxes on production

¹ This paper is modified from my PhD thesis and a joint work with Professor Phil Lewis in Nugraha, K. & Lewis, P 2011, 'The Impact of Taxation on Income Distribution: Evidence from Indonesia', paper presented in 2nd Hot Knowledge Conference, Canberra, 21 – 22 November.

I. INTRODUCTION

The role of tax revenues in the Indonesian budget has increased sharply since 2000, from both income tax and taxes on production. Between 1998 and 2012 tax revenues increased by 18 per cent per year in nominal term and the role of tax revenues increased from 60 per cent of government revenue in 1998 to more than 70 per cent in 2012. A question arises when discussing the role of government not just in raising tax revenues but also in redistributing income through taxation. The question is - do Indonesian taxation support the improvement of income inequality?

In this paper, evaluation of tax incidence only concentrates on one aspect of taxation, i.e. taxes on production. Taxes on production are taxes payable on value added, international trade transactions and controllable goods and services transactions, such as cigarettes, luxury items and alcoholic beverages (Ministry of Finance 2009). Taxes on production are also known as indirect taxes which means that the burden of the tax can be passed on to other economic agents by increasing the price of final goods and services (ABS 2006). The calculation of incidence is based on the assumption of how different taxes are shifted to consumers, producers and factor owners (Sahn and Younger 2003; Gillespie 1980; Browning 1978).

A previous study of taxation incidence in Indonesia used microsimulation to measure the income tax incidence based on the tax data of each individual (Yuwono 2008). Yuwono only concentrated on the impact of personal income tax on income distribution and the burden. Here, the researcher evaluates the impact of taxes on production on income distribution in Indonesia using Scutella method that allocate household income and the taxes on production burden to different income groups, from the poorest to the richest decile of the population.

The Scutella method (1997) adopted by the Australian Bureau of Statistics (ABS) for fiscal incidence studies (FIS) in Australia are used. The impact of taxes on production on household income distribution is used to measure the tax burden of each household income group. The statutory incidence needs to be differentiated from the burden of taxes on production. The statutory incidence is tax collected from businesses by the government. The tax burden is the actual burden of this tax on businesses or households. The assumption is that the initial incidence of the tax is passed forward to direct and indirect purchasing industries and final demand. The burden of the tax is, round by round, passed on in higher prices to final consumers (Scutella 2000).

This method uses both Input Output (I-O) table plus the household expenditure and income module of *Susenas*. The effective tax rate on each sector was calculated using a modified I-O table that capture the burden of the tax on each sector. Then the household consumption is mapped, based on the *Susenas* expenditure module, to I-O sectors. This method for calculating taxes on production incidence are used for the first time in Indonesia.

II. LITERATURE REVIEW

2.1. Overview of Indonesian Taxes On Production

Between 1998 and 2012 tax revenues increased by 18 per cent per year in nominal term even though the Indonesian economy had not recovered from the Asian and Global financial crises. The Asian Financial Crisis hit the Indonesian economy in 1997 and created structural changes in the economy, the financial market and the bureaucracy. Just as improvements became apparent, the Global Financial Crisis of 2008 hit the Indonesian economy causing a slowdown in economic growth. This situation impacted on tax collection, both for income tax and taxes on production.

To increase tax compliance, the Indonesian government has concentrated its effort on tax administration reforms rather than on tax policy reforms. Tax administration reform has included

improvement in Directorate General of Taxes' organisation, human resources development, online payment, and code of conduct (Ministry of Finance 2006). The goal is to change the Directorate General of Taxes employee behaviour. Besides that, tax policy reform has tended to decrease tax revenue, such as decreasing the tax rate, increasing non-taxable income and decreasing exemptions, but these policies increased tax compliance.

Taxes on production made up around 45 per cent of total tax revenues in 1998 and stabilised at around 50 per cent since 2005. Taxes on production consist of value added tax (VAT), luxury sales tax (LST), excises, export and import duties. VAT and LST accounted for around 27 per cent of total tax revenues in 1998 and tended to increase to 34 per cent in 2012. The share of VAT and LST has increased steadily during 1998–2012. In the future, the government will reduce the LST and concentrate on VAT; but some luxury commodities, such as automobiles, will still have excises applied.

Excises accounted for around 8 per cent of total tax revenue in 1998 and stable at more than 7 per cent in 2012. Excise rates are applied mainly to tobacco and liquor. The excise rate for tobacco depends on the type of cigarette and layer of cigarette production. The excise rate for liquor depends on its alcohol content. Export and import taxes accounted for around 4 to 7 per cent of total tax revenue and tended to decrease during 1998 - 2012.

Table 2.1 shows the features of Indonesian taxes on production including the tax rate, the tax base and exemptions. The table is based on explanations in Law No.42/2009 for VAT and LST, Law No.39/2007 for excises and Law No.17/2006 for import and export tax. All taxes on production have exemptions, except export tax. Most of the exemptions are for intermediate goods. VAT has a single rate, but with 0 per cent rate for exports and some exemptions for agriculture and natural resources. For LST, there are many tariffs depending on the commodities. Multiple tariffs occur in excises, export and import duties.

Table 2.1. Taxes on Production: Tax Rate, Tax Base and Exemptions

	Type	Tax Rate	Goods	Exemptions
1	VAT	0% & 10%	Value added of goods & services	agriculture and natural resources
2	LST	10% - 75%	Automotives, electronics & some beverages	intermediate goods
3	Excises	- Rp65 - Rp310/cigarette - Rp1,000 - 40,000/litre	Cigarettes & alcohol beverages	intermediate goods
4	Export Tax	0% - 40%	Crude Palm Oil (CPO), wood, rattan & leather	-
5	Import Duties	0% - 25%	Imported goods	intermediate goods

Source: Ministry of Finance, *indikator ekonomi dan APBN* (Economic Indicators and Budget), 2010

III. METHODOLOGY

This paper uses the method developed by Scutella (1997, 2000) to calculate the tax burden on each sector using I-O tables and *Susenas* data. Here, the assumption is that the statutory tax is passed through to higher price of final commodities. The tax passes round by round through the process of production. Before calculating the incidence of taxes on production incidence, the *Susenas* data and I-O tables were modified. All blocks of data from the *Susenas* module need to be modified to make it easier

for analysis, particularly the merging of blocks with the goal of allowing the coding of data by province, district, sub-district, village, type of village, sample number and household sample number. To arrive at a modified I-O table, the original I-O tables were converted to a long-run model through moving the gross fixed capital formulation (GFCF) in final demand quadrant to the intra industry flow matrix. In the long-run, GFCF is used in the process of production.

There are eight steps to estimate the effective rate of tax of each sector and calculate the burden of taxes on production on each household income groups. The eight steps are:

1. Estimating the statutory incidence

The statutory incidence is the actual taxes collected from businesses or companies by government. Here we use Indonesian Ministry of Finance data for all type of taxes on production. The formula is:

$$SI_i = \sum_{j=1}^s T_{ij} \dots\dots\dots (1)$$

Where SI_i is the statutory incidence of industry i and T_{ij} refers to a subtype of taxes on production j for industry i , i is 1, 2, ..., n industries and j is 1, 2, ..., s subtypes of taxes on production. The vector of SI given by:

$$SI = \begin{bmatrix} SI_1 \\ SI_2 \\ \vdots \\ SI_n \end{bmatrix} \dots\dots\dots (2)$$

The SI vector of Indonesian taxes on production can be seen in Appendix.

2. Constructing the exemption matrix

The exemption matrix (E) comprises the full I-O flow matrix with flows between exempt industries set to zero or a fraction less than unity if there are only partial exemptions. The formula of E for industry i and industry j is:

$$E = \begin{bmatrix} E_{11} & E_{12} & \dots & E_{1n} \\ E_{21} & E_{22} & \dots & E_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ E_{n1} & E_{n2} & \dots & E_{nn} \end{bmatrix} \dots\dots\dots (3)$$

Where $E_{ij} = 0$ for totally exempt and E_{ij} = fraction of I-O flow matrix for partial exemptions. Then, the non-exempt final demand is calculated. Non-exempt final demand is final demand minus government consumption and exports that are exempt from VAT. The non-exempt final demand vector (FDX) for n industries is:

$$FDX = \begin{bmatrix} FDX_1 \\ FDX_2 \\ \vdots \\ FDX_n \end{bmatrix} \dots\dots\dots (4)$$

Then, summing the exempt matrix (E) and the non-exempt final demand (FDX) gives total non-exempt supply of commodities or services. The formula of total non-exempt supply is:

$$TSX_i = \sum_{j=1}^n E_{ij} + FDX_i \dots\dots\dots (5)$$

Where TSX_i is total non-exempt supply of industry i , E_{ij} is exemption matrix for subtype of taxes on production j for industry i and FDX_i is non-exempt final demand vector for industry i . The value of $E_{ij} = 0$ for totally exempt and E_{ij} = fraction of I-O flow matrix for partial exemptions.

3. Calculating the first round non-exempt output coefficient matrix

The vector of first round non-exempt output coefficients matrix (OX) is:

$$OX = \begin{bmatrix} \frac{E_{11}}{TSX_1} & \frac{E_{12}}{TSX_2} & \dots & \frac{E_{1n}}{TSX_n} \\ \frac{E_{21}}{TSX_1} & \frac{E_{22}}{TSX_2} & \dots & \frac{E_{2n}}{TSX_n} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{E_{n1}}{TSX_1} & \frac{E_{n2}}{TSX_2} & \dots & \frac{E_{nn}}{TSX_n} \end{bmatrix} \dots\dots\dots (6)$$

E_{ij} and TSX_i are same explanation as in 2.

4. Calculating the first round incidence on industry inputs

The first round incidence for net taxes on production can be obtained by multiplying the SI vector by the first round output coefficient matrix (OX). The outcome of purchasing industries represent first round incidence on industry inputs (TI). The vector of TI is:

$$TI_i = SI \times OX = \begin{bmatrix} TI_1 \\ TI_2 \\ \vdots \\ TI_n \end{bmatrix} \dots\dots\dots (7)$$

Where TI_i is first round incidence on industry inputs for industry i and $\times$ is matrix multiplication.

5. Calculating the final incidence on industry inputs

The first round incidence on industry inputs uses the original industry by industry flow matrix. The first round incidence on industry inputs uses the original industry by industry flow matrix. The output coefficient matrix (O) is used to divide each flow in the I-O matrix (A) by total supply of supplying industry (TS). The subsequent rounds of O are:

$$O = \begin{bmatrix} \frac{A_{11}}{TS_1} & \frac{A_{12}}{TS_2} & \dots & \frac{A_{1n}}{TS_n} \\ \frac{A_{21}}{TS_1} & \frac{A_{22}}{TS_2} & \dots & \frac{A_{2n}}{TS_n} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{A_{n1}}{TS_1} & \frac{A_{n2}}{TS_2} & \dots & \frac{A_{nn}}{TS_n} \end{bmatrix} \dots\dots\dots (8)$$

This step examines how taxes on industry inputs flow through the output coefficient matrix to find the input taxes on final demand. Each round, a portion of an industry's output will be purchased at a final demand and the remainder will be used by other industries as an input to their production. Eventually, after many rounds, all of the inputs will end up in final demand and correspondingly all

of the tax on industry inputs will be forwarded to final demand. In each round, the portion of tax passed on to final demand in each industry (Z) is:

$$Z = \begin{bmatrix} \frac{FD_1}{TS_1} \\ \frac{FD_2}{TS_2} \\ \vdots \\ \frac{FD_n}{TS_n} \end{bmatrix} \dots\dots\dots (9)$$

Where FD is final demand in each industry and TS is total supply in each industry. In this case, no exemptions are made from either vector as tax on inputs is borne by all sectors and final demand components. The amount of tax forwarded on to household final demand after n rounds is:

$$TB = [TI \times (I + O + O^2 + \dots + O^n)] \# Z \dots\dots\dots (10)$$

Where TB is final incidence on industry inputs, TI is first round incidence on industry inputs, I is coefficient matrix identity, O is output coefficient matrix and Z is the portion of tax passed on to final demand in each industry.

$\#$ is element by element multiplication known as the Schur or Hadamard product. This operation is different to matrix multiplication ($\times$). When n get very large, the O^n term become very small and the expression in the round brackets can be simplified to:

$$TB = [TI \times (I - O)^{-1}] \# Z \dots\dots\dots (11)$$

6. Calculating the first round incidence on household final demand

Some industries that are exposed to taxes on production sell products or services directly to households, governments or foreign consumers. For these the incidence of the tax is passed forward to final demand in the first round. The first round incidence on final demand (TA) is:

$$TA = SI \# \begin{bmatrix} \frac{FDX_i}{TSX_i} \end{bmatrix} \dots\dots\dots (12)$$

Where SI is statutory incidence, FDX_i is non-exempt final demand in industry i and TSX_i is non-exempt total supply in industry i .

Calculating the final incidence of taxes on production

Total final incidence of taxes on production that represents the dollar amount of tax paid by total final demand is:

$$TC = TA + TB \dots\dots\dots (13)$$

Where TC is total final incidence, TA is the first round incidence on final demand and TB is final incidence on industry inputs.

After that, we calculate the margin industries through adding value from the producing industry to the purchasing industry. They include amounts paid to industries that are involved in the transport and marketing of goods for sale to intermediate or final purchasers. The industries that provide

margin services are Trade (53), Restaurants and Hotels (54), Railway Vehicles (55), Automobiles and Motorcycles (56), Shipbuilding (57), Aircraft (58) and Other Transportation Service (59). To redistribute margin services to flows of I-O matrix, the formula is:

$$TCM = TC \times \frac{\sum_{i=53}^{59} A_i}{\sum_{i=53}^{59} TS_i} \times PM \dots\dots\dots (14)$$

Where TCM is the final incidence of margin industries on each industry by industry, TC is total final incidence and PM is the proportion of total demand of each industry that is margin service. Thus, total final incidence plus margin service ($Tot TC$) is:

$$Tot TC_i = TC_i + TCM_i \dots\dots\dots (15)$$

7. Calculating the effective tax rate

The last step is to calculate the effective tax rate (ETR) by dividing the total final incidence plus margin service ($Tot TC$) by the industry final demand (FD). The formula of ETR is:

$$ETR_i = \frac{Tot TC_i}{FD_i} \dots\dots\dots (16)$$

Using *Susenas*, the consumption of each household by commodities is calculated and then mapped to sectors in I-O tables. The 340 household consumption commodities in *Susenas* are mapped to 66 sectors in I-O tables. After that, the consumption of each household by sector is multiplied by the ETR to get the burden of taxes on production on each household. After the burden of taxes on production are found, the income distribution before and after taxes on production can be calculated.

3.1. Findings Preparation

To account for the impact of household size, this paper uses an equivalence scale to compare income levels between households of differing size and composition. It reflects the requirement of a larger household to have a higher level of income to achieve the same standard of living as a smaller household (ABS 2007). It recognises that the economic needs of additional adults and children in households are not equal to the economic needs of the first adult and child. Many factors affect the economic need of every household member. For instance, working adults incur transportation costs and older children cost more to rise than young children.

The most often used equivalence scales are income per capita and the 'modified OECD (Organization for Economic Cooperation and Development)' equivalence scale (Hagenaars et al. 1994). However, this equivalence scale is not appropriate in Indonesia according to Ree et al. (2010). They argued that in Indonesia, average households spend a larger fraction of their total budget on food than average households in OECD countries.

The Ree scale assigns different weights to each member of the household such that the first adult is 1 point, each additional person above 15 years is 0.5 points, the first child under 15 years is 0.5 points and each additional child under 15 years is 0.35 points (Ree et al. 2010). Following Kim et al. (2006), children are defined as persons less than 15 years while an adult is a person over 15 years of age. The detail formula for adjusted per capita income can be seen in Nugraha and Lewis (2011a; 2013).

In here all the result are measured in US\$ using average purchasing power parity (PPP) exchange rate in 2008. The average PPP in 2008 was Rp5,410/US\$1.

3.2. Data

Two main data sources, i.e. *Susenas* and the I-O table are used. The latest *Susenas* data are for 2008 (2009 publication) and the latest I-O table is for 2005. Central Bureau of Statistics (Badan Pusat Statistik – BPS 2009) has updated the 2005 I-O table to 2008 figures using data on economic growth and inflation.

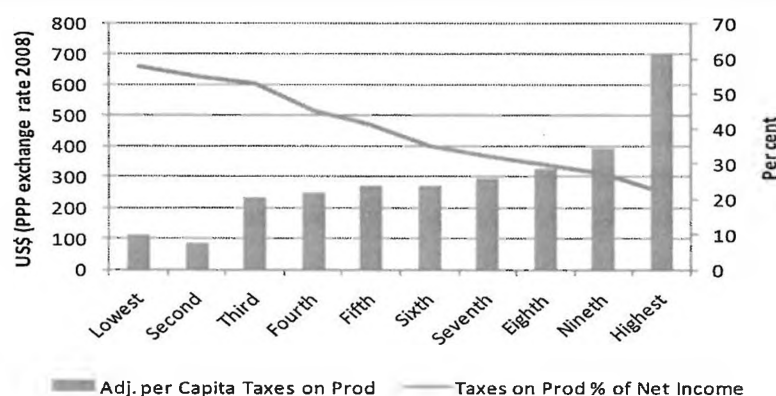
Susenas is a survey collected from a chosen sample nationally in each town or village by selecting 16 households with different characteristics. Each household is individually weighted to be representative of the population. There are two kinds of *Susenas* - *Susenas* Core and *Susenas* Module (BPS 2010). The *Susenas* Core is collected every year and the latest publication was in February 2009. There are two *Susenas* Cores, i.e. individual data and household data that concentrate on earnings, hour works, jobs, education, health and goods consumed. The *Susenas* Module is collected every three years. There are three *Susenas* Modules - consumption module; health and education module; and culture and social module. The data in both *Susenas* can be classified by subdistrict, district and province.

The I-O table provides detailed analysis of the process of production, the use of goods and services, and of the income generated in that production. The I-O table shows the total resources in terms of domestic output and imports, and the uses of goods and services in terms of intermediate consumption, final consumption, and exports. The I-O table is published every 5 years and consist of 3 quadrants, i.e. quadrant 1 is intra-industry flows, quadrant 2 is final consumption and quadrant 3 is added value (primary input).

Both data sets have limitations. For *Susenas*, the tails of the distribution, both wealthy household and very poor families are likely to be under represented (Cameron 2002). The wealthy tend to refuse to respond to the questions of the BPS officer and it is hard to collect data from the very poor. The limitation of I-O tables is that it is assumed that technology and production does not change between periods of publication (Bulmer-Thomas 1982). With this in mind the results of this paper are for all but the very poorest and richest households in Indonesia and assuming no change of technology.

IV. ANALYSIS AND DISCUSSION

The burden of taxes on production of the lowest income group in nominal term is lower than other income groups, except the second decile. The tax burden increases significantly for higher income groups particularly the highest income group. In terms of the percentage of net income, the lowest income group has the highest percentage of tax burden compared with the other income groups. The lowest income group paid per capita taxes on production of around US\$111 per year (around 58 per cent of net income) and the highest income group paid around US\$702 per year (around 22 per cent of net income). Figure 4.1 shows the burden of taxes on production by income groups in 2008. This finding is in line with the evidence that taxes on production are usually regressive (Lewis et al. 2010).



Source: Calculated by this researcher

Figure 4.1. Per Capita Tax Burden by Income Groups.

Table 4.1 shows the adjusted per capita income by deciles. When the burden of the taxes on production is added, the dispersion of income after taxes is worse. The highest deciles share increases to 38 per cent and the lowest share decreases to 0.5 per cent. Imposing taxes on production worsens the income distribution. The poorest households pay almost 3.8 per cent of total taxes on production revenues. The poorest share is higher than the share of the second decile whereas the richest pay six times the taxes on production as do the poorest. Even though the richest pay more taxes on production inequality worsens. It shows that taxes on production are regressive.

Table 4.2 shows the effective tax rate and the burden of taxes on production in 2008 on each sector. The five biggest effective tax rates are for cigarette, palm oil, wood, beverages, and automobiles and motorcycles. The highest tax burden falls on cigarettes, real estate and company service, other food industry, beverages, and electricity, gas and clean water. The finding is interesting because the higher effective tax rate is not the same as the higher tax burden. The burden depends on the household consumption and market structure. If most of the industry's product is an input for other industries, the burden of the tax is borne by other industries or sectors that produce final demand. The other explanation is that the export industries, such as palm oil and wood, even though they have higher effective tax rates, have a relative small tax burden on households because most of their product is exported.

Interestingly, sugar, other crops and fibre crops have effective tax rates exceeding 10 per cent, higher than the mining industry (see Table 4.2). Even though the government exempts commodities in the agriculture sector, the effective tax rate is still high. The reason is because household consumption of the agriculture sector is high. The effective tax rate depends on two factors: the statutory rate and household consumption.

Table 4.1. Adjusted per Capita Income by Deciles Per Cent

	Market Income		
	Net Income	Taxes On Production	Income After Taxes
Lowest	1.5	3.8	0.5
Second	3.5	2.9	3.8
Third	4.6	8.0	3.1
Fourth	5.7	8.4	4.5
Fifth	6.8	9.2	5.8
Sixth	8.1	9.2	7.5
Seventh	9.6	10.0	9.4
Eighth	11.5	11.2	11.6
Ninth	15.0	13.3	15.7
Highest	33.7	23.9	38.0
Total	100.0	100.0	100.0

Source: Calculated by this researcher

Table 4.2. The Effective Tax Rate and the Burden of Taxes on Production in 2008

Sector	Effective Tax Rate (%)	Tax Burden (US\$)	Sector	Effective Tax Rate (%)	Tax Burden (US\$)
Paddy	4.93	-	Cigarette Industry	47.77	4,163,494
Grain Crops	4.17	28,378	Yarn Spinning Industry	7.12	2,519
Corns	1.17	36,211	Textile and Leather Industry	7.68	623,488
Seeds Crops	1.79	28,600	Bamboo, Wood and Rattan Industry	6.90	179,345
Vegetables and Fruits	2.11	247,443	Pulp and Paper Industry	6.49	108,549
Other Food Crops	5.20	2,974	Fertilizers and Pesticides Industry	10.99	57,759
Rubber	2.54	-	Chemical industry	7.31	487,926
Sugar Cane	2.78	-	Crude Oil Refinery	2.99	244,505
Coconut	2.52	16,102	Rubber and Plastic Industry	7.37	376,022
Palm Oil	30.42	-	Non Metallic Products Industry	8.26	45,456
Tobacco	2.78	1,567	Cement Industry	6.85	-
Coffee	1.36	1,498	Basic Iron and Steel Industry	3.57	-
Tea	3.66	1,179	Basic Metal Non Iron Industry	6.47	-
Clove	1.31	26	Metal Products Industry	6.20	107,619
Fibre Crops	12.84	-	Machineries and Electricity Apparatus Industry	7.46	803,470
Other Estate Crops	1.17	4,531	Transportation Apparatus Industry	7.88	726,286
Other Crops	11.90	22,465	Other Industry	8.73	112,787
Livestock	3.85	68,279	Electricity, Gas and Clean Water	8.28	261,699
Animal Butchery	1.68	69,698	Construction	-	-
Poultry	3.06	153,531	Trade	-	-
Wood	18.78	195,018	Restaurant and hotel	7.12	1,356,257
Other Forestry Products	3.70	9,368	Railway Vehicles	11.60	60,848
Fishery	1.83	167,029	Automobiles and Motorcycles	14.51	1,154,503
Coal and Metal Mining	3.48	-	Shipbuilding	6.38	106,448
Oil, gas and geothermal mining	1.60	-	Aircraft	8.14	299,702
Other mining	4.49	4,251	Other Transportation Service	8.23	60,351
Processed Food Industry	5.45	434,986	Telecommunication	6.89	537,121
Oil and Fat Industry	5.91	159,770	Financial Institution	2.93	124,281
Rice Refinery	2.47	405,998	Real Estate and Company Service	6.03	604,158
Flour Industry	4.70	254,499	Government and Military	2.94	32,151
Sugar Industry	13.64	193,939	Social Service	3.06	336,995
Other Food Industry	5.86	457,745	Other Service	6.84	635,361
Beverages Industry	18.01	307,320	Others	5.53	-

Source: Calculated by this researcher

4.1. Income Inequality

Two of the most common ways of measuring income inequality are using the Gini coefficient and relative percentiles. From Table 4.3 the Gini coefficient for net income is 0.41. After imposition of taxes on production, the Gini coefficient is marginally worse, 0.47. That is, Indonesian taxation is regressive. The worsening in the Gini coefficient is mirrored in the widening in income dispersion as measured by relative percentiles. The ratio of the income of the lowest 10 per cent to the median of income decreases from 0.34 to 0.27. That is the poorest 10 per cent of households has net income 34 per cent of the median net income and this decreases to 27 per cent of the median income after taxes. The ratio of the highest 10 per cent to median of income increases marginally from 3.27 to 4.03. It means that the highest

income households have net income 3.27 times the net income but this increase to 4.03 times the median income after taxes. The findings show that taxes on production worsen income inequality.

Table 4.3. Income Inequality of Two Different Type of Income, 2008

	Net Income	Income After Taxes
Gini Coefficient	0.41	0.47
Percentile Ratios		
P90/P10	9.67	14.84
P90/P50	3.27	4.03
P10/P50	0.34	0.27
P75/P25	2.48	3.05

Source: Calculated by this researcher

V. CONCLUSION AND POLICY RECOMMENDATION

The role of tax revenue in financing the budget increased sharply since 2000. In order to enhance the role of government in redistributing income through taxation, it is important to evaluate the impact of taxes on production on income distribution.

From the results, the dispersion of net income worsens after government impose taxes on production. The key finding is that Indonesian taxes on production are regressive. Consequently the Indonesian tax system does not support improving income equality in Indonesia.

The burden of taxes on production by sector shows that consumers of cigarettes have the highest burden. The imposition of government excises on cigarettes increases the effective tax rate of the sector sharply and together with the high cigarette consumption per capita makes the burden of taxes on production the highest of any sector. Because the poor households tend to smoke more than the higher income households, they bear the greatest burden of taxes on production. The second and the third most highly taxed consumers are real estate and company service; and other food industry. Both sectors have lower effective tax rate, but because consumption per capita is high, the burden of taxes on production for consumers in that sectors is high. A key finding is that the higher effective tax rates do not mean the higher the burden of taxes on production for consumers.

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