



## The impact of the Indonesian income tax reform: A CGE analysis

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### ABSTRACT

This study evaluates the impacts of Indonesia's recent income tax reforms on key macroeconomic variables, as well as the impacts on poverty and income distribution. It was found that the reductions in personal income tax and corporate income tax increase economic growth under a balanced budget assumption. The policy reforms also lead to a small reduction in the incidence of poverty. However, the policies also lead to an increase in income inequality because the tax cut is more beneficial to households in the highest income categories. It is recommended that future tax cuts should target the urban and rural poor.

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### 1. Introduction

Governments use tax systems as policy instruments to achieve a variety of objectives, among them are income redistribution, economic stabilisation, providing public goods, and fostering economic growth. The combination and importance of these objectives vary for each country, and usually depend on their respective political and economic backgrounds. As such, the design of the tax system is different for each country. While a good tax system must be efficient and equitable, in reality, these two goals may conflict with each other. For example, a tax system may be efficient – in the sense of causing minimum distortions in the economy, thus fostering economic growth – but it also may be inequitable in its effects on the income distribution. This trade-off has long been a central debate in developing a theory of optimal taxation; for example, see studies conducted by Mirrlees (1971), Feldstein (1973), Sandmo (1976), Samuelson (1986), Martimort (2001), and Krause (2005).

The issue of how fiscal policy affects dynamic efficiency (and, in turn, growth) and redistribution has attracted much attention in applied macroeconomics. Many studies have explored how tax policies affect a country's economic growth rate. For example, Gemmell (1988) examined some effects of taxation on economic growth within the Keynesian tradition of least developed countries. He concluded that the relationship between taxation, savings, and growth was complex, and that the theory that taxation significantly influences economic growth is unjustifiable. In the setting of neoclassical economics, Engen and Skinner (1996) analysed the effect of taxes on US economic growth, using a theoretical approach based on the Solow growth model, and an

empirical approach based on the country's historical economic record. They concluded that the design of the tax system was likely to exert a modest, but cumulatively important influence on long-term growth rates. However, it is worth noting that countries whose tax structures are more efficiently administered and legally enforced are more likely to enjoy faster economic growth rates than countries without (Engen and Skinner, 1996). Other studies that describe the relationship between taxes and economic growth include Goulder and Summers (1989), Easterly and Rebelo (1993), Mendoza et al. (1994), Stokey and Rebelo (1995), Auerbach (1996), and Lee and Gordon (2005), among others. Between them, some have suggested that taxes negatively correlate with economic growth; some suggest that correlations between the two are relatively small or insignificant, while others found the opposite to be true.

In addition, many studies have analysed how economic growth provides the optimal impact for poverty reduction or income distribution. In the 1990s and 2000s, the analyses of developing countries highlighted the importance of a high level of economic growth in accelerating poverty reduction (e.g., see Bourguignon, 2003; Dollar and Kraay, 2002; Essama-Nssah, 2005; Kraay, 2006; Ravallion and Chen, 1996; Son, 2004; Son and Kakwani, 2008; Timmer, 2007). Levels of inequality are also a factor to consider. It has been found that economic growth is less efficient in reducing poverty in countries with high levels of inequality, or where growth benefits the 'non-poor' more (Persson and Tabellini, 1994; Ravallion, 1997, 2001). The term 'pro-poor growth' became popular due to the argument that poverty reduction requires both rapid economic growth and an equal distribution of income.

Other studies that have analysed the issues of taxation policy, economic growth, and poverty or income distribution have revealed that the relationships are complex (Auerbach, 1996; Eicher et al., 2003).

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Understanding the wider impact of taxation policy in a given economy is important, not only to strengthen basic theories but also to aid policy development on how to achieve a more efficient and equitable taxation system.

Most of the studies that are based on optimal tax theory – beginning with the first study by Mirrlees (1971) – have taken a more theoretical approach that has often produced very little practical advice to inform policy-making (Sørensen, 2007). Many of the previous empirical studies have adopted partial equilibrium approaches that have failed to estimate the full impacts of taxation policy. There is therefore the need for a more comprehensive approach that takes into consideration the various interrelationships between all actors in the economy, in order to more realistically estimate the economic effects and distributional consequences of any tax policy changes.

In view of the foregoing, the main objective of this study is to identify and quantify the direction and magnitude of the effects of the Indonesian government's recent tax policy reforms on Indonesia's economy. More specifically, the study looks at the macroeconomic impacts of reducing the marginal tax rate on personal income tax (PIT) and the introduction of a flat tax rate on corporate income tax (CIT). The analysis will evaluate the impacts of tax policy reform at both the macro- and micro-levels. The former will include impacts on aggregate variables such as economic growth, employment, government revenue and so on. The latter will include sectoral impacts, impacts on household welfare, as well as income distribution.

This study makes the following contribution to the existing literature. It is the first to use a CGE model to specifically analyse the modern taxation system in Indonesia. This is done by combining the latest national Input–Output (IO) table with a Social Accounting Matrix (SAM) to evaluate the impact of Indonesia's recent tax reforms at both the macro- and micro-levels. This information is supplemented with data from the National Socioeconomic Survey (Susenas) to provide a rich database that facilitates the analysis of the impacts of the tax policy on poverty and income distribution in Indonesia.

The paper is structured as follows. After this Introduction, Section 2 presents a brief review of the 2008 income tax reform in the context of Indonesia's economic development. Section 3 offers a general description of the main features of our model highlighting the database construction, structure of production, final demand, composition of the institutions in the economy and the model. Section 4 describes the policy simulations and the magnitudes of the policy shocks, while Section 5 analyses the simulation results. Finally, Section 6 presents the conclusions and policy recommendations.

## 2. Income tax reform in Indonesia

Indonesia is classified as a lower middle-income country with a Gross Domestic Product (GDP) of US\$540.27 billion and a nominal per capita GDP of US\$2349.38 in 2009. Industry (manufacturing and non-manufacturing) is the largest economic activity and accounted for 46.7% of GDP in 2009, followed by services (39.2%), and agriculture (14.1%). However, agriculture employs more people than the other sectors, accounting for 41.2% of the total workforce of 99.6 million people, followed by services (39.9%), and industry (18.8%) in 2008 (World Bank, 2010).

For nearly three decades, Indonesia's economy grew at an average annual rate of 7.2%, until the Asian financial crisis in 1997. In 1993, in light of its economic performance, Indonesia was classified as one of Asia's newly industrialising countries by the World Bank. Indonesia's rapid economic growth was accompanied by a steady decline in poverty and a rapid increase in investment. Rapid industrialisation transformed Indonesia from an economy once highly dependent on agriculture to a newly industrialising economy. At the end of 1997, when the monetary crisis hit Southeast Asia, the Indonesian economy suffered a major development setback. Its economy contracted by 13.1% in 1998, which was about double the reduction in Malaysia and Thailand (Hill, 2000).

By 1999, the Indonesian economy had recovered and it grew at a very modest rate of 0.8%, increasing steadily up to 2008, but still below the average level of the three decades preceding the crisis.

According to the previous method of estimation used by national statistics agency (BPS—Statistics Indonesia), the high economic growth during those three decades was responsible for reducing poverty from 40.1% (equivalent to 54.2 million people) of the population in 1974 to 11.3% (22.5 million people) in 1996. On the other hand, the new methodology puts this figure at 17.5% (34 million).<sup>1</sup> The new methodology was introduced in 1996 due to the increasing nature of interregional commodities. The 1997 Asian financial crisis caused the number of poor people to surge to 49.5 million (24.2%) in 1998. Various policy measures undertaken successfully reduced this figure to 38.7 million (23.4%) in 2000. Since then, the poverty rate has been relatively stable at about 15% (see Fig. 1).

Another problem facing the Indonesian economy is unemployment. According to BPS—Statistics Indonesia, the unemployment rate from 1980 to 1996 was only about 3%, but after the 1997 financial crisis this figure jumped to 6.3% in 1999, reaching a peak of 10.5% in 2006. By 2008, it had declined to 8.5% (BPS, 2009b). These statistics suggest that although the previous high level of sustained economic growth reduced the number of poor people significantly, it failed to improve the equality of income distribution or significantly reduce unemployment. This indicates that poverty, income distribution, and unemployment are still major threats to Indonesia's future economic development.

Within the last decade, the Indonesian government has aimed to continually reform its tax system in order to adapt it to achieve its fiscal policy objectives. After the 1997 financial crisis, Indonesia focused on its economic recovery. For five years, Indonesia's economy was faced with low growth, high unemployment and inflation, and financial distress. The government has faced several challenges in its efforts to achieve fiscal sustainability, particularly given the continual decline of revenue from oil and natural gas, and its commitment to gradually reduce foreign debt (Ikhsan et al., 2005; Nasution, 2002).

On the revenue side, the Indonesian government has no other choice but to effectively mobilise revenue from taxes. Taxes have a great potential to be the main source of government funding. Tax revenue increases can be achieved by improving tax administration, expanding the tax base, or by increasing tax rates. Ikhsan et al. (2005) concluded that there is still an opportunity to increase Indonesia's national tax revenue without increasing the tax rate. Not only is the tax ratio to GDP still relatively low compared with other developing countries, but also the number of registered tax payers who actually pay taxes is still very low in relation to the population of the country.

Typically, tax systems in developing countries are not efficient due to a lack of modern tax administration and a limited number of tax payers. In Indonesia, this situation is made worse by the high level of tax avoidance. These factors have been discussed by Gillis (1985), Marks (2003a, 2003b), and Ikhsan et al. (2005). In their study, Ikhsan et al. (2005) concluded that Indonesia tax reforms undertaken prior to the twenty-first century were successful in increasing government revenue, but were not at the optimal level required.

Table 1 shows trends in the composition of government revenue from 1980 to 2008. After radically reforming its postcolonial tax system in 1984, Indonesia's tax revenue increased significantly from 5% of GDP in 1980–81 to 9.9% of GDP in 1995–96 when the second reform was carried out. From that time, the ratio of tax revenue to GDP remained relatively stable, staying below 13% until 2007 and reached 13.3% in 2008.

<sup>1</sup> BPS—Statistics Indonesia measures poverty using a basic needs approach. Poverty is defined as the inability to meet basic needs i.e. food and non-food. According to this approach, the poor are the people who have an average expenditure per capita per month below the poverty line of Rp151,997 (about US\$1.55 PPP a day) for the year 2006 (BPS, 2009a; World Bank, 2006).

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