ABSTRACTS OF DOCTORAL THESES 
ON THE INDONESIAN ECONOMY

Equity and Environmental Policy in Indonesia
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This thesis explores the social and environmental dimensions of sustainable development, focusing on the impact of environmental reforms such as pollution reduction and fuel pricing policy on inequality and poverty for the case of Indonesia. The success of the reforms depends largely on their distributional effects.

A multi-sector, multi-household computable general equilibrium (CGE) model provides the basis for two empirical case studies: (1) the effects of a carbon tax; and (2) the impact of fuel pricing reforms. The CGE model captures inter-dependence among markets in the determination of the price of commodities and factors of production and how it will affect distribution of income. In a departure from the previous literature, the disaggregation of households by expenditure class allows for precise estimates of distributional impact and poverty incidence.

The main finding from the carbon tax study suggests, in contrast with most developed country research findings, that the introduction of a carbon tax in Indonesia would not necessarily be regressive. It is shown to be strongly progressive in rural areas and either neutral or slightly progressive in urban areas, with an overall progressive distributional effect nation-wide. The industries that experience the largest contraction are generally more energy intensive. The owners of factors of production in these industries are largely concentrated among higher-income and urban households.

The analysis of counter-factual scenarios on fuel pricing reform suggests that reducing the subsidy on fuels used for transport purposes (diesel and gasoline) constitutes a progressive reform. However, a reform such as the October 2005 package, which included a massive increase in the price of the fuel used for domestic purposes (kerosene), tends to be regressive unless accompanied by a proper and effective compensation scheme. The uniform transfer package implemented by the Indonesian government in October 2005 tended to over-compensate rural households at the expense of the urban poor. An alternative package that recognises the difference between urban and rural household income and expenditure patterns is crucial to minimising the adverse distributional effects of the fuel pricing reform.

The study shows that there is not necessarily a conflict between environmental and equity objectives, especially when policies or reforms to achieve environmental goals are carefully designed. It also offers methodological contributions...
in modelling the economy-wide impact of macro policies on income distribution. The analysis of the distributional impact of policies in the CGE modelling framework has hitherto been constrained in part by the absence of a Social Accounting Matrix (SAM) with disaggregated households. The SAM constructed in this study is the largest and most disaggregated Indonesian SAM yet constructed at sectoral and household level, thus contributing to the literature on SAM construction, especially in developing countries. In addition, the study has built a CGE model named INDONESIA-E3 (economy–equity–environment). In the current literature, the method used to assess the distributive effect of environmental policies is either micro-simulation (using household-level data to examine income and expenditure patterns) or a CGE model without detailed household-level disaggregation. INDONESIA-E3 combines these two approaches. The CGE model captures the economy-wide effects—inter-industry relationships between inputs, energy and emissions—and the general-equilibrium mechanisms of factor and commodity price determination. Disaggregation of households by income or expenditure size provides precise estimates of distributional impact and poverty incidence.

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Designing Pension Programs to Strengthen Formal Labor Markets in Developing Countries: The Case of Indonesia
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Pension systems in developed countries, where labour is concentrated in formal production sectors, are likely to differ from those in developing countries, where labour is more concentrated in informal sectors. Governments have few tools for implementing fiscal policies (taxes and subsidies) in respect of firms and labour in informal sectors. This research develops a comprehensive, multi-dimensional approach to setting up pension systems in developing countries generally and Indonesia in particular.

The pension system suggested comprises a short-run consumption tax policy to finance a defined-benefit plan to meet the minimum physical needs of the older population; a medium-run labour income tax policy to finance a defined-contribution, fully funded savings plan for individuals; and a long-run skilled labour creation plan through university education to allow more individuals to finance their own pension savings under the fully funded savings plan. The defined-benefit plan serves as a redistribution tool, the defined-contribution plan as a savings tool. The skilled labour creation plan is a supporting tool to make the pension program sustainable in the long run.

An overlapping generation (OLG) computable general equilibrium (CGE) model is calibrated for the Indonesian economy, with heterogeneity in households introduced through the inclusion of skilled and unskilled labour. The model is used to analyse the impact of consumption taxes and pension taxes on labour supply and to calculate the equivalent variation of the distribution of the consumption tax burden across generations and labour groups. The impact of skilled
labour creation on economic growth is estimated using econometric methods and linear algebra.

A consumption tax to finance defined-benefit pension cash transfers of $1, $2 and $3 per person per day is found to impose a lower burden on skilled than on unskilled labour. Introducing a consumption tax to finance a $1 cash transfer creates an incentive for the highest amount of labour (both skilled and unskilled) to work in the formal sector, to compensate for the consumption tax costs through higher income. Increasing the consumption tax to support $2 and $3 cash transfers reduces labour supply to the formal sector; however, with skilled labour supply decreasing more than unskilled in the $2 case and the reverse in the $3 case.

I find that the elasticity of skilled labour creation with respect to government education expenditure is roughly 0.3. Using this elasticity, and expenditure, education and labour force data, I calculate that, to reduce participation in the informal sector by 25% within 20 years (an average of 1.25% annually), the government must increase education expenditure to 8% of the annual budget (from 4.5% in 2004 and 1.3% in 2001).

Finally, I show that the increase in skilled labour would contribute positively to economic growth, while consumption taxes and fully funded pension taxes are likely to reduce current economic growth but increase future growth.

My theoretical contributions are that, given the existence of both formal and informal sectors in an economy, and the latter being dominant: (1) taxation of expenditures is preferred to taxation of income because the first may induce labour to work in the formal sector; and (2) there exists an optimal level of consumption tax that provides incentives for the largest supply of labour, both skilled and unskilled, to the formal sector.

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Peasants and Policymakers:
Agricultural Transformation in Java under Suharto
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In line with the East Asian success story, Indonesia subscribed to a model of increased productivity, income and equity through the modernisation of agriculture. When hit by the crisis in 1997, Indonesia was regarded as one of the up-and-coming tigers of Southeast Asia, and well equipped to deal with any difficulties ahead. In hindsight this was clearly not the case. The crisis revealed serious flaws in the structure of the economy, necessitating a re-examination of the Indonesian model of development. The aim of this thesis is to explain the severity of the crisis, rather than just the crisis itself. This is done through a close look at the agricultural transformation process in Java under Suharto. Many studies were carried out before the crisis to explain the success of the Indonesian regime. Initially these studies included the agricultural sector, but once rice self-sufficiency was achieved, the interest of researchers waned and a comprehensive picture of agricultural transformation under Suharto was never completed. As a consequence, Indonesian agriculture needs to be revisited.
The thesis shows that Indonesia commenced a transformation process but did not see it through, causing the economy to be more investment-driven than agriculturally led. Inspired by the East Asian model, the thesis focuses on three core areas within the agricultural transformation process.

First, it considers yields and labour productivity, showing that the principal source of productivity growth was land-augmenting policies. More interestingly, it shows that labour productivity increased steeply between 1977 and 1984, only to slow down thereafter.

The second issue discussed in the thesis is income. Though the focus is predominantly on agricultural income, an increasing proportion of the rural population is now deriving a significant part of total income from off-farm activities. The study shows that land-holders’ income from rice increased dramatically in the early 1980s, before levelling out. For landless labourers there was also an increase in income, again achieved predominantly in the early 1980s.

The final aspect, equity, is closely related to the other two and is measured using data on consumption, income and land-holdings. This chapter reveals an interesting pattern of increasing inequality in the agricultural sector from the second half of the 1980s onwards.

A qualitative approach is used to determine the reasons for this slowdown in the agricultural transformation process. Interviews with farmers and public officials at a local level are combined with extensive analyses of both local and national policy documents. It can be argued that the process stalled as a consequence of farmers being averse to change and modernity, but this thesis shows that reasons for the slowdown in change can in fact be found in actions by the state, as this was the driving force behind the transformation of agriculture. The thesis also shows that the state’s motives for change were guided by urban rather than rural needs, and increasing production took precedence over raising rural incomes. In conclusion, the study shows that the development process in agriculture lacked the dynamics to generate its own growth: Javanese agriculture was still vulnerable and the country could not sustain the blow when the crisis hit in 1997.

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Political Accountability, Incentives and Public Service Delivery: Theory with Evidence from Local Governments in Indonesia  
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What makes governments tick? Why are some public institutions more successful than others in managing resources and delivering services? Even more vitally, how can malfunctioning institutions be reformed so that they fulfil their responsibilities more effectively? This research contributes to our understanding of these over-arching questions by exploring the interactions between political institutions and public sector performance in the context of decentralisation and local governance. It shows— theoretically and empirically—that performance outcomes are determined by the extent to which people can hold their governments accountable through political institutions.
At a theoretical level, the principal hypothesis holds that the performance of local governments is determined to a significant extent by the effectiveness of political accountability systems that ensure public control of government actions. To elaborate this hypothesis, a stylised model of political accountability is proposed. The model generally suggests that incentives embedded in political accountability mechanisms have a crucial impact upon local government performance. Political incentives present local government with two broad options: (1) to extract private rents at the expense of social welfare; or (2) to provide high-quality public services to the community. The basic argument is that, either by encouraging sanctions against non-compliant public agents or simply by reducing the gap in public information about government activities, political accountability will create forceful incentives for elected officials and civil servants to reduce opportunistic behaviour and improve public service provision, thus enhancing performance. As an extension of the basic model, the study proposes how these effects might in turn determine reform dynamics. If local political accountability is incomplete, the short-term gains from increased decentralisation will be concentrated within a narrow group in the local government. Access to resources (rents) might rise rapidly for local political elites in the short term as local public revenues grow and local political elites become more fiscally and politically independent from central control. The second hypothesis suggests that early winners will face incentives to propagate low accountability in order to protect their rent-seeking opportunities, leading to an institutional lock, in effect—a sub-optimal but self-perpetuating equilibrium.

Using a combination of quantitative and qualitative methods, the study tests the model empirically against evidence from newly empowered local governments in Indonesia. The empirical findings, both quantitative and qualitative, broadly support the study’s hypotheses. Poorly performing local governments were often deeply rooted in their political (and social) environment. Conversely, better performing governments were found to be consistently more open to the pressure of informed, organised and politically active communities, which strengthened their incentives to be responsive and to manage and deliver services efficiently. Improved public services on the ground, in terms of both quantity and quality, require informed and well-functioning decision-making processes that allocate resources to priority areas to meet the demands of the broader community. If political institutions do not translate community demands into public spending and policies because of weak electoral incentives, ineffective checks and balances and poor transparency, governments often fail to deliver basic services, because political and bureaucratic agents face incentives to misallocate public resources in order to draw private ‘rents’. Conversely, higher accountability will increase the political costs of inefficient and inadequate public decisions, and public service performance is likely to improve. This requires the interaction of institutions, the electoral regime and a well-informed and politically active community able to participate directly and indirectly in exacting accountability.

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A Study of Indonesia’s Fiscal Equalisation Mechanism in the Early Stages of Decentralisation
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This thesis analyses the fiscal equalisation mechanism in Indonesia at an early stage of decentralisation. It portrays fiscal conditions and service levels at the local (municipality and district) level. The main hypothesis is that the current system of fiscal equalisation has not sufficiently addressed fiscal disparities among local governments and inequality in the level of local services across localities.

Central–local financial arrangements introduced in 2001 significantly increased disparities in fiscal capacity between local governments. The main source of increasing disparity is shared revenue from the central government. Meanwhile, the general allocation fund (DAU) has played a limited role in fiscal equalisation. The declared role of the DAU—to reduce fiscal disparities—has not been fully realised as the law intended, because political pressures have forced the government to use the pattern of the previous year grant’s allocation as the main variable for allocating the DAU. The absence of a fiscal equalisation mechanism at the provincial level is also found to have played a considerable role in widening fiscal capacity disparities between local governments.

A survey of local services in six local governments in the early stages of decentralisation suggested that inequality in the level of local services was rather high. Such inequality had the potential to widen because of increasing fiscal disparities between local governments. Moreover, various other forms of local service financing have the potential to widen the disparities in local services between localities. First, the central government has not considered local service disparities in its direct financial assistance to local service units through the de-concentrated budget. Second, provincial governments tend to finance local service units directly without regard to each local government’s fiscal capacity. Third, the provision of local services by non-government organisations has benefited municipalities and rich localities more than poor and rural localities.

The current national resource allocation system has widened the disparities in fiscal capacity between local governments and has the potential to broaden inequality in the level of local services between localities. Therefore, this research recommends a comprehensive approach to addressing disparities in the level of local services. The approach includes not only improving the DAU allocation and increasing the role of the special allocation fund (DAK) as a fiscal equalisation mechanism, but also shifting particular central government direct financing to the DAK. Moreover, there should be a mechanism to encourage non-government involvement in local service provision in poor and rural localities. The research also recommends establishing an intra-provincial fiscal equalisation mechanism between local governments in each province, and distinguishing the formula for DAU allocation for districts from that for municipalities, because of inevitable differences in local fiscal capacities and fiscal needs.

Finally, this research points out the importance of a political consensus to ensure an understanding by all stake-holders of the fiscal equalisation mechanism and to set appropriate fiscal equalisation objectives in a decentralised Indonesia. An
independent body should be established to monitor and manage the degree of fiscal disparity and to recommend the formula for allocating equalisation grants.

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**Poverty Incidence in Indonesia, 1987–2002:**

*A Utility-Consistent Approach Based on a New Survey of Regional Prices*

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Because the central statistics agency’s methodology for measuring Indonesian poverty lines has changed several times, and because non-official studies do not apply unchanging methodologies to all years in the period 1987–2002, it has not previously been possible to estimate reliably the extent of the long-term decline in Indonesian poverty. In addition, the method used in the non-official studies does not generate a utility-consistent poverty line (UCPL) because it ignores changes in non-food prices. This thesis provides consistent measures of the extent of the decline in poverty over this 15-year period. Its UCPL approach sets poverty lines across regions and over time by means of a spatial cost of living index (SCOLI). Starting with new regional price data collected by the author, and complementing these with official price data, the study constructed the SCOLI for each urban and rural area in each province in each Susenas (National Socio-Economic Survey) year between 1987 and 2002, with rural Indonesia in 2002 as the base. The SCOLI for each area was scaled up using a scaling factor to derive a utility-consistent poverty line for that region. To estimate poverty incidence, the thesis chooses two poverty lines, *acute* and *mild*, corresponding to two levels of utility.

Using cumulative distributions of per capita real expenditure, the study confirms that long-term trends in poverty incidence declined between 1987 and 2002, even though there were large fluctuations during the period. Between 1987 and 1996, poverty incidence diminished steadily and remarkably. For every possible level of poverty line, including the acute and the mild, poverty incidence was far lower in 1996 than in 1987. The 1997 crisis returned the poverty incidence level in 1999 to that of 1990. By 2002, poverty incidence had declined from its disastrous 1999 level but, in contrast to official estimates of poverty incidence, this thesis argues that the decline in poverty between 1999 and 2002 failed to restore poverty incidence to 1996 levels.

Relative poverty is a misleading indicator for monitoring poverty over time. Relative poverty incidence was roughly constant over the 15 years, with only small fluctuations. Nevertheless, while small, the fluctuations in relative poverty contrasted with patterns of absolute poverty. Furthermore, they were exactly the same as the fluctuations of Gini (inequality) coefficients over this period. Relative poverty is a measure of inequality rather than of poverty incidence.

Poverty in Indonesia has always been concentrated in rural areas. Accordingly, there was no shift in the concentration of poverty incidence from urban to rural areas in the early 1990s, as is implied by the official estimates, even though the proportion of urban poor to total Indonesian poor doubled between 1987 and
2002. Poverty incidence was relatively high in the Eastern Indonesian islands of Nusa Tenggara, Maluku and Papua, and to a lesser extent in Sulawesi, in almost all years within the period of analysis.

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