

One of the most important contribution of the SAM constructed in this paper, is the possibility of analyzing distributional impact of certain policies with compensation targetted to certain households, such as the poor. For example, one of the most policy-relevant issue, nowadays, in Indonesia is how to assess the impact of reducing subsidy for various energy but minimizing its distributional impact. Using the SAM with 200 households classified by centile of expenditure per capita, the poor can essentially be identified. Therefore, reducing subsidy can be accompanied by various scheme of compensation, and compare these scenarios to find which policies are the most equitable. Among the possible compensation schemes that can be considered are unconditional cash transfers to the poor, and conditional transfers, such as subsidising the poor's certain expenditures such as education and health. The detailed labor types and sectoral classification also allow comparing some scenarios of indirect mitigation more conveniently. Subsidising industries which employ relatively more factors owned by the poor, such as informal unskilled rural labor, can be exercised.

5 Concluding remarks

This paper describes the construction of an Indonesian Social Accounting Matrix, putting more emphasis on distribution across households. It extends the official BPS SAM by having 181 detailed sectoral classifications, 16 labour classifications, and distinguishing 200 households classified by centile of expenditure per capita. This SAM constitutes the biggest and most disaggregated Indonesian SAM at the sectoral and household level ever constructed, hence contributing to the literature on SAM construction especially in developing countries. A SAM is also a basic and necessary element in CGE modelling, and its construction has provided a pathway for later studies to analyze relevant policy issues. In addition, since SAM construction is rarely well-documented, the transparency in the description of this SAM construction, hopefully provides greater replicability for SAM construction in future³³, as well as for other researchers.

Shortcomings in this SAM construction may include possible weak assumptions (or lack, availability and quality of the data used). The variety of different data sources, although collected by the same agency, may have been produced for different purposes and with different methods. Inconsistency among those data sources, are unavoidable. In these situations, definitions, with the assumptions contained, as well as judgments are an inevitable but common practice in the SAM construction. In many parts of the process, art is more dominant than science. This concern is actually one of the motivations for this paper, with the expectation that improvement will be made in the future.

³³For example, when data source is updated to more recent years.

References

- Akita, T., R. A. Lukman, and Y. Amanda (1999). Inequality in the distribution of household expenditures in indonesia: A theil decomposition analysis. *The Developing Economies* 37(2), 197–221.
- Annabi, N., F. Ciss, J. Cockburn, and B. Decaluw (2005). Trade liberalisation, growth and poverty in senegal: a dynamic microsimulation cge model analysis. Cahiers de recherche 0512, CIRPEE. available at <http://ideas.repec.org/p/lvl/lacicr/0512.html>.
- Arrow, K. J. and G. Debreu (1954). The existence of an equilibrium for a competitive economy. *Econometrica* 22(3), 265–90.
- Azis, I. J. (2000). Simulating economy-wide models to capture the transition from financial crisis to social crisis. *Annals Regional Science* 34(2), 251–278.
- Azis, I. J. (2006). A drastic reduction of fuel subsidies confuses ends and means. *ASEAN Economic Bulletin* 23(1), 114–136.
- Bourguignon, F., A.-S. Robilliard, and S. Robinson (2003). Representative versus real households in the macro-economic modeling of inequality. Working paper DT 2003-10, DIAL.
- Cororaton, C. B. (2003). Construction of philippine SAM for the use of CGE-microsimulation analysis. mimeo, Philippine Institute for Development Studies, <http://www.pep-net.org>.
- Cororaton, C. B. and J. Cockburn (2005). Trade reform and poverty in the philippines: a computable general equilibrium microsimulation analysis. Cahiers de recherche 0513, CIRPEE. available at <http://ideas.repec.org/p/lvl/lacicr/0513.html>.
- Cororaton, C. B. and J. Cockburn (2006). WTO, trade liberalization, and rural poverty in the Philippines: Is rice special? *Rev. Agr. Econ.* 28(3), 370–377.
- de Melo, J. (1988). Sam-based models: An introduction. *Journal of Policy Modeling* 10(3), 321–325.
- Decaluwé, B., J. C. Dumont, and L. Savard (1999). How to measure poverty and inequality in general equilibrium framework. CREFA Working Paper no. 9920. Laval University.
- Dervis, K., J. de Melo, and S. Robinson (1982). *General equilibrium models for development policy*. Cambridge University Press.
- Filho, J. and M. Horridge (2004). Economic integration, poverty and regional inequality in brazil. Centre of Policy Studies/IMPACT Centre Working Papers g-149, Monash University, Centre of Policy Studies/IMPACT Centre. available at <http://ideas.repec.org/p/cop/wpaper/g-149.html>.

- Horridge, M. (2003). Sambal: a gempack program to balance square sams. Technical report, Center of Policy Studies, Monash University. available at <http://www.monash.edu.au/policy/archivep.htm>.
- Ikhsan, M., T. Dartanto, Usman, and H. Sulisty (2005, April). Kajian dampak kenaikan harga BBM 2005 terhadap kemiskinan. LPEM Working Paper <http://www.lpem.org>.
- Ivanic, M. (2004, February). Reconciliation of the GTAP and household survey data. GTAP Research Memorandum No. 5.
- Keuning, S. J. and W. A. de Ruijter (1988, March). Guidelines to the construction of a social accounting matrix. *Review of Income and Wealth* 34(1), 71–100.
- McDougall, R. (1999). Entropy theory and ras are friends. GTAP Working Papers 300, Center for Global Trade Analysis, Department of Agricultural Economics, Purdue University. available at <http://ideas.repec.org/p/gta/workpp/300.html>.
- Oktaviani, R., D. Hakim, S. Sahara, and H. Siregar (2005, May). The impact of fiscal policy on Indonesian macroeconomic performance, agricultural sector and poverty incidences (a dynamic computable general equilibrium analysis. Report to the Poverty and Economic Policy (PEP) Network <http://www.pep-net.org/>.
- Plumb, M. (2001). An integrated microsimulation and applied general equilibrium approach to modelling fiscal reform. mimeo.
- Ravallion, M. (2003). Measuring aggregate welfare in developing countries: How well do national accounts and surveys agree? *The Review of Economics and Statistics* 85(3), 645–652.
- Resosudarmo, B. (2003). Computable general equilibrium model on air pollution abatement policies with indonesia as a case study. *Economic Record* 79(0), 63–73.
- Robilliard, A. and S. Robinson (2003). Reconciling household surveys and national accounts data using a cross entropy estimation method. *Review of Income and Wealth* 49(3), 395–406.
- Round, J. (2003a). Constructing sams for development policy analysis: Lessons learned and challenges ahead. *Economic Systems Research* 15(2), 161–183.
- Round, J. (2003b). Social accounting matrices and SAM-based multiplier analysis. In F. Bourguignon, P. da Silva, and L. A (Eds.), *The impact of economic policies on poverty and income distribution: Evaluation techniques and tools*. Washington, DC.: World Bank.
- Savard, L. (2003). Poverty and income distribution in a cge-household microsimulation model: Top-down/bottom up approach. Cahiers de recherche 0343, CIRPEE. available at <http://ideas.repec.org/p/lvl/lacir/0343.html>.

- Stone, R. (1985). The disaggregation of household sector in the national accounts. In G. Pyatt and J. I. Round (Eds.), *Social Accounting Matrices: A Basis for Planning*. Washington: World Bank.
- Sugema, I., M. Hasan, R. Oktaviani, Aviliani, and H. Ritonga (2005). Dampak kenaikan harga BBM dan efektivitas program kompensasi. INDEF Working Paper <http://www.indef.or.id/download/pubs/BBM.PDF>.
- Warr, P. (2006). The Gregory thesis visits the tropics. *Econ. Record* 82(257), 177–194.
- Yusuf, A. A. and P. Koundouri (2005, November). Willingness to pay for water and location bias in hedonic price analysis: evidence from the Indonesian housing market. *Environment and Development Economics* 10(06), 821–836.