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The Case of Indonesia**

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The Direct and Indirect Effect of Cash Transfers: The Case of Indonesia

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Abstract

Economists have long argued that to increase households' welfare, cash transfers are more efficient than commodities subsidies. However, not many studies address the indirect or economy-wide effect of such transfers especially in the context of poverty reduction programs in developing countries. In this paper, a 50 trillion rupiahs worth of cash transfers, roughly doubling the current level of government spending on poverty reduction program is simulated using a Computable General Equilibrium model of the Indonesian economy. The result suggests that such transfers reduce Indonesian GDP especially if domestically financed through increasing value added tax. However, the GDP reduction can be reduced to around half of that when financed by reducing distortionary fuel subsidy. Moreover, a cash transfers financed by reducing fuel subsidy also give the largest reduction in inequality. Various extents of the distribution of the transfers are compared, from giving it to the poorest 10% to distribute it equally to all households. It is found that the benefit of the transfers in terms of reduced poverty and inequality is smaller when we extend the beneficiaries toward the non-poor but its economy-wide cost in terms of the reduced GDP will be smaller. Policy implications are discussed.

Keywords: Cash transfer, general equilibrium, Indonesia

JEL Code: I38, O53

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1 INTRODUCTION

Cash transfer programs have become increasingly common in developing countries both as tools for long-term poverty alleviation or to avoid adverse effect of certain kinds of reforms that may adversely affect the poor (Gertler et al, 2012). In general, there are two kinds of cash transfer programs. One is called conditional cash transfers and the other is unconditional cash transfers. As its name suggests, conditional cash transfers are transfers made subjects to certain actions by the beneficiaries (Farrington & Slater, 2006). Unconditional cash transfers, on the other hand, do not have that kind of restrictions.

Cash transfers in Indonesia became popular in the year 2005 when Indonesian government implemented one of its daring fuel price reforms. The reform package was announced in October 2005, increasing retail fuel prices for gasoline, kerosene, and diesel. The price of gasoline was increased by 87.5 per cent, diesel by 104.7 per cent and kerosene, surprisingly, by 185.7 per cent (Yusuf & Resosudarmo, 2008). Despite much criticism over its implementations, particularly in terms of mistargetting (World Bank, 2006), the cash transfer program has been praised as a successful accompanying measure for reforming fuel subsidies in developing countries (Beaton & Lontoh, 2010).

When in early 2012, Indonesian government attempted to increase the fuel price again, this cash transfers become one of the programs to be considered for the compensation for the poor². According to the 2012 budget, Indonesian planned to spend as much as 25.6 trillion rupiahs, or Rp 150,000 per months for 9 months distributed to 18.5 million targeted households. This was meant to be temporary³ because it would be used as the compensation for the proposed increase in the fuel prices in 2012 (Republik Indonesia, 2012, p. IV.12-13). As the increase in the fuel prices was cancelled due to political resistance, the cash transfers program was also delayed⁴.

Other than the unconditional cash transfers program implemented in 2005, currently there is also conditional cash transfers program called *Program Keluarga Harapan* (Family Hope Program) or PKH. Different from the unconditional cash transfers, beneficiaries of PKH requires doing certain activities as part of the conditions to be able to get the cash. In this case, they need to do medical checks for their family members and send their children to school. This program has been running in 33 provinces in Indonesia and as much as Rp 1.8 trillion has been allocated in 2012 (Tim Nasional Percepatan Penanggulangan Kemiskinan, 2011).

A cash transfers requires financing, and government, unless getting the funding from foreign aid, needs to reallocate funds either from increasing government revenue (such as increasing taxes), or reducing other spending (such as reducing subsidy or other government expenditures). Either way, this funding reallocation will have an economy-wide impact. Increasing value added tax, for example, will have a contractionary effect on industries; income tax may reduce labor supply, and if the size of the transfers is large relative to the economy, there will be some non-negligible reduction

² Antaranews.com, "74 juta jiwa menerima bantuan langsung sementara", March 1, 2012, url: <http://www.antaranews.com/berita/1330605192/74-juta-jiwa-menerima-bantuan-langsung-sementara>

³ In Indonesian, the program called "Bantuan Langsung Sementara Masyarakat".

⁴ Antaranews.com, "Pemerintah tunda program BLSM", April 10, 2012, url: <http://www.antaranews.com/berita/305479/pemerintah-tunda-program-blsm>

in output and GDP. This paper aims to shed more lights on the issue of the economy-wide cost (as well as benefit in terms of inequality and poverty reduction) for Indonesia.

There is a large number of literature comprehensively discuss the effectiveness of cash transfers in achieving its poverty aspiration targets⁵. However, there are not many recent studies that also discussing the indirect effect and economy-wide cost of such programs. To name a few, Coady & Harris (2001) studies the welfare impact of a cash transfers in Mexico using a general equilibrium framework accommodating the indirect effect of such transfers. It suggests that the direct effect of the transfers decreases regional income differentials, but the indirect effects depend on how the program is financed. Other studies analyzing the impact of cash transfers program in a general equilibrium framework includes Filipski & Taylor (2012) for Malawi and Ghana, Bhattarai & Whalley (2009) for UK, and Cury, et al, (2010) for Brazil.

The general objective of this paper is to analyze the impact of an unconditional cash transfers in Indonesia on poverty and inequality yet acknowledging that such a transfer will have indirect effect or economy-wide effect that can be a cost to the national economy. To do this, this study will use a general equilibrium model of the Indonesian economy with a strong feature in distributional analysis. This model's feature makes it possible to simulate a cash transfers to some targeted households and see its direct welfare impact to the beneficiaries as well as its indirect impact to the rest of the economy.

The rest of the paper is organized as follow. Section two will discuss a little bit more about the model used in the analysis. Section three will discuss the results in length, and finally section four concludes the paper.

2 METHODOLOGY

2.2 INDONESIA-E3 MODEL

The main methodology to be used to answer the research questions discussed above is a Computable General Equilibrium (CGE) model called INDONESIA-E3. The unique feature of this model which is very relevant in this study is the disaggregation of household by expenditure classes which allows for precise estimates of the distributional impact and poverty incidence. In the literature of the poverty impact analysis using CGE models, this class of model is called an integrated CGE model (Bourguignon, et al, 2003). This class of model normally has disaggregated households which link each of the households to both sources of income (through market of factors of production) and expenditure (through market for commodities). This should be distinguished from other class of model which is called top-down, where the CGE model is separate from the poverty module, and between them is only one directional relationship. In the integrated model, there is no separation between CGE model and poverty module because all are in one model.

INDONESIA-E3 has been used in various research for example to analyze the distributional impact of fuel pricing reform (Yusuf & Resosudarmo, 2008); the poverty and distributional impact of carbon

⁵ Farrington & Slater (2006), for example, in a review of cash transfers programs in developing countries especially in Africa and Asia

tax (Ministry of Finance Republic of Indonesia, 2009); greenhouse gasses emission from land use change (Warr & Yusuf, 2011). More detailed exposition of the model can be found in Yusuf (2008).

INDONESIA-E3 model use a Social Accounting Matrix (SAM) for its database. The integration of highly disaggregated households adequate for accurate distributional analysis is made possible by constructing an Indonesian Social Accounting Matrix (SAM) which serves as the core database to the CGE model. The SAM consists of up to 175 industries, 175 commodities, and 200 households (100 urban and 100 rural households grouped by percentile of real expenditure per capita). The data used for constructing the SAM include Indonesian Input-Output Table, official SAM, and most importantly household level survey data (SUSENAS). Detail construction of the SAM can be found in Yusuf (2006).

2.3 CLOSURES, SCENARIO AND SIMULATION STRATEGY

For the purpose of this analysis, in the model we specify 5 kinds of labor: agricultural labor, formal and informal skilled labor, and formal and informal skilled labor. For all the simulations, we used different assumption for the market setting for each kind of labor. We assume a real wage rigidity, namely nominal wage will follow consumers price index for formal labor (both skilled and unskilled), but not for agricultural and informal labor. Because of this, we allow for unemployment to occur for formal labor market, but in the informal labor market, real wage will clear the demand and fixed supply of labor. As a result, any shock will be responded by larger GDP change because of the change in aggregate employment compared to a situation where we employed a fully neoclassical assumption of full employment in all labor market. We consider this more appropriate for two reasons. Firstly, we observed an acceleration of real wage growth (triggered by rapid increase in minimum wage across the country) associated with the political reform and stronger unions (Aswicahyono, et al, 2010; World Bank, 2010). Secondly, full employment assumption is more of a long-run situation, whereas in this analysis we would like to understand more about the cost to the economy, particularly in terms of GDP of the transfers program. Another assumption in the macroeconomic closure is that government spending and real investment demand for each good are fixed exogenously.

We simulate a 50 trillion rupiahs worth of cash transfers to various alternative target groups. The amount of the transfer more or less matches the current level of government spending on social assistance (of Rp 55.4 trillion rupiahs according to the amended 2012 budget plan, or RAPBN⁶), making this scenario is roughly doubling the amount of the current level “pro-poor” spending through a cash transfers.

In this paper, we are interested in finding what the distributional and poverty-reduction benefit of such a transfers; what is the cost of that transfers to the national economy if it is domestically financed through increasing value-added tax rate or reducing distortionary subsidy (two of the most likely source of financing for Indonesian case). In addition we are also interested in the implication of varying the target (or beneficiaries) of the transfers, starting from giving it to the poorest of the poor (the poorest 10%) to distributing it lump-sum to all households in the economy. This is quite relevant for at least two accounts. Firstly, deciding who should be the beneficiaries of the cash transfers is always a practical policy questions. Giving to households below the national poverty line, for

⁶ See Republik Indonesia (2012).

example, neglect millions of the “near poor” in Indonesia. That is why, in Indonesian experience, the beneficiaries of the cash transfers are always larger than the poor population. Understanding the implication of this on relevant outcome indicators is always of policy relevant questions. Secondly, extending the number of beneficiaries of a given amount of cash transfers toward the relatively rich can be interpreted as mistargetting. Analyzing this may contribute to better understanding of the effect of this mistargetting. To summarize, the simulations implemented is as follow:

1. Simulation 1 – A 50 trillion rupiahs worth of unconditional cash transfers financed by increasing the rate of value added tax uniformly across all commodities.
2. Simulation 2 – A 50 trillion rupiahs worth of unconditional cash transfers financed by reducing the rate of fuel subsidy.
3. Simulation 3 – A 50 trillion rupiahs worth of unconditional cash transfers financed by foreign aid.

In all the simulations, balanced budget is assumed leaving the cash transfers fully revenue-neutral. In each of the three simulations, we vary the beneficiaries starting from the poorest 10%, then poorest 20%, to all households in the economy. So in each set of simulation, for example Simulation 1, there will be 10 variations of it. In total we implement 30 simulations.

3 RESULTS AND DISCUSSIONS

Table 1 to Table 4 and Figure 1 to Figure 3 show the impact of the simulations on various relevant variables such as macroeconomic variables, poverty indicators, and inequality indicators. In all of the tables, we only report three variation of targeting i.e. the poorest 10%, the poorest 20%, and the poorest 50%. In Figure 2 and 3, however, all of the 10 variations of the beneficiaries are reflected in the charts.

Table 1. Simulated impact on macro variables (Rp 50 trillion cash transfers)

	Simulation 1			Simulation 2			Simulation 3		
Target, the poorest ...	10%	20%	50%	10%	20%	50%	10%	20%	50%
Macro variables (%chg)									
Real GDP	-0.38	-0.36	-0.33	-0.20	-0.18	-0.15	-0.16	-0.15	-0.12
Employment	-0.85	-0.81	-0.75	-0.85	-0.80	-0.75	-0.47	-0.44	-0.38
Real consumption exp.	0.18	0.18	0.19	0.18	0.19	0.20	1.35	1.35	1.36
Export (quantity index)	-1.34	-1.30	-1.25	-0.85	-0.81	-0.76	-1.67	-1.63	-1.59
Import (quantity index)	0.39	0.38	0.35	0.27	0.25	0.22	2.49	2.46	2.44
Consumer price index	1.53	1.45	1.34	2.49	2.41	2.30	2.80	2.73	2.62
GDP Deflator	1.45	1.39	1.31	1.88	1.82	1.74	2.37	2.31	2.23
Real devaluation	-1.43	-1.37	-1.29	-1.84	-1.79	-1.71	-2.32	-2.26	-2.18
Chg. in GDP (Rp Trillion)									
GDP	22.5	21.7	20.5	35.4	34.6	33.4	46.5	45.7	44.5
Consumption	23.9	23.0	21.5	37.4	36.4	35.0	58.5	57.5	56.1
Fixed investment	5.1	5.1	5.0	3.3	3.2	3.2	5.8	5.8	5.7
Change in inventory	-0.6	-0.6	-0.5	-2.1	-2.1	-2.1	-1.2	-1.2	-1.1
Government cons.	3.1	3.0	2.9	2.8	2.7	2.6	4.0	3.9	3.8
Trade balance	-9.1	-8.9	-8.5	-5.9	-5.6	-5.2	-20.7	-20.3	-20.0
Returns to factors (%chg)									
Agriculture labor	0.65	0.31	-0.28	1.77	1.41	0.83	3.01	2.65	2.08
Formal unskilled-labor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Informal unskilled-labor	-3.50	-3.33	-3.12	-2.97	-2.79	-2.58	-2.07	-1.90	-1.71
Formal skilled-labor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Informal unskilled-labor	-3.41	-3.19	-2.84	-2.48	-2.24	-1.89	-0.93	-0.70	-0.36
Capital	-2.30	-2.21	-2.06	-3.20	-3.11	-2.96	-1.33	-1.25	-1.10
Land	0.75	0.36	-0.27	1.82	1.41	0.79	3.00	2.60	1.98

Source: Author's calculation

Table 2. Simulated impact on poverty indicators (Rp 50 trillion of cash transfers)

	Simulation 1			Simulation 2			Simulation 3		
Target, the poorest ...	10%	20%	50%	10%	20%	50%	10%	20%	50%
Poverty (Head count, %)									
<i>Urban</i>									
Ex-ante	9.09	9.09	9.09	9.09	9.09	9.09	9.09	9.09	9.09
Ex-post	9.58	7.63	7.82	9.30	7.40	7.62	9.21	7.26	7.50
Change	0.49	-1.46	-1.27	0.21	-1.69	-1.47	0.12	-1.83	-1.59
<i>Rural</i>									
Ex-ante	15.59	15.59	15.59	15.59	15.59	15.59	15.59	15.59	15.59
Ex-post	3.01	7.99	12.37	2.89	7.72	11.91	2.87	7.57	11.66
Change	-12.58	-7.60	-3.22	-12.70	-7.87	-3.68	-12.72	-8.02	-3.93
<i>Urban & rural</i>									
Ex-ante	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35	12.35
Ex-post	6.28	7.81	10.11	6.08	7.56	9.78	6.03	7.42	9.59
Change	-6.08	-4.54	-2.25	-6.27	-4.79	-2.58	-6.32	-4.94	-2.77
Poverty Gap (%)									
<i>Urban</i>									
Ex-ante	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Ex-post	0.92	0.83	1.22	0.86	0.78	1.17	0.84	0.76	1.15
Change	-0.51	-0.60	-0.21	-0.57	-0.65	-0.26	-0.60	-0.67	-0.29
<i>Rural</i>									
Ex-ante	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51	2.51
Ex-post	0.25	1.07	1.82	0.66	0.97	1.75	0.66	0.95	1.71
Change	-2.25	-1.44	-0.68	-1.85	-1.53	-0.76	-1.85	-1.56	-0.80
Poverty Severity (%)									
<i>Urban</i>									
Ex-ante	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Ex-post	0.14	0.16	0.29	0.12	0.15	0.27	0.12	0.15	0.27
Change	-0.23	-0.21	-0.08	-0.24	-0.22	-0.10	-0.25	-0.22	-0.10
<i>Rural</i>									
Ex-ante	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Ex-post	0.04	0.20	0.43	0.09	0.18	0.40	0.09	0.18	0.39
Change	-0.61	-0.45	-0.22	-0.56	-0.47	-0.24	-0.56	-0.47	-0.25

Source: Author's calculation

Figure 1. The impact of Rp 50 trillion cash transfers to the poorest 20% (nation-wide) on rural poverty

Table 3. Simulated impact on Gini coefficient (Rp 50 trillion of cash transfers)

	Simulation 1			Simulation 2			Simulation 3		
Target, the poorest ...	10%	20%	50%	10%	20%	50%	10%	20%	50%
<i>Urban</i>									
Ex-ante	0.348	0.348	0.348	0.348	0.348	0.348	0.348	0.348	0.348
Ex-post	0.345	0.344	0.342	0.343	0.341	0.339	0.345	0.343	0.342
Change	-0.003	-0.004	-0.006	-0.005	-0.006	-0.008	-0.003	-0.004	-0.006
<i>Rural</i>									
Ex-ante	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278
Ex-post	0.241	0.247	0.262	0.239	0.244	0.259	0.241	0.247	0.262
Change	-0.036	-0.031	-0.016	-0.039	-0.033	-0.018	-0.036	-0.031	-0.016
<i>Urban & rural</i>									
Ex-ante	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
Ex-post	0.331	0.332	0.338	0.328	0.330	0.335	0.331	0.332	0.337
Change	-0.019	-0.018	-0.013	-0.022	-0.021	-0.015	-0.020	-0.018	-0.013

Source: Author's calculation

Table 4. Simulated impact on sectoral output (Rp 50 trillion of cash transfers)

	Simulations 1			Simulation 2			Simulation 3		
Target	10%	20%	50%	10%	20%	50%	10%	20%	50%
<u>1 pdr</u>	<u>0.41</u>	<u>0.33</u>	<u>0.18</u>	<u>0.37</u>	<u>0.30</u>	<u>0.16</u>	<u>0.28</u>	<u>0.21</u>	<u>0.09</u>
<u>2 gro</u>	<u>1.11</u>	<u>0.81</u>	<u>0.42</u>	<u>1.24</u>	<u>0.91</u>	<u>0.53</u>	<u>1.36</u>	<u>1.03</u>	<u>0.66</u>
3 v_f	0.27	0.27	0.26	0.27	0.27	0.26	0.46	0.45	0.44
4 ocr	-0.72	-0.65	-0.55	-0.71	-0.64	-0.53	-0.93	-0.87	-0.77
5 osd	-0.36	-0.33	-0.28	-0.50	-0.47	-0.42	-0.76	-0.73	-0.68
6 c_b	0.04	0.00	-0.08	-0.02	-0.06	-0.15	-0.36	-0.39	-0.48
7 pfb	-1.00	-0.86	-0.62	-1.60	-1.45	-1.22	-2.22	-2.07	-1.84
8 ctl	-0.73	-0.61	-0.37	-0.61	-0.50	-0.26	-0.34	-0.23	0.00
9 rmk	-1.79	-1.45	-0.94	-2.13	-1.78	-1.28	-2.29	-1.95	-1.46
<u>10 oap</u>	<u>0.12</u>	<u>0.23</u>	<u>0.32</u>	<u>0.39</u>	<u>0.50</u>	<u>0.59</u>	<u>0.82</u>	<u>0.92</u>	<u>1.01</u>
11 frs	-0.55	-0.53	-0.50	-0.50	-0.48	-0.45	-0.76	-0.73	-0.71
<u>12 fsh</u>	<u>0.02</u>	<u>0.04</u>	<u>0.08</u>	<u>0.05</u>	<u>0.07</u>	<u>0.11</u>	<u>0.14</u>	<u>0.16</u>	<u>0.20</u>
13 coa	-0.07	-0.07	-0.07	-0.06	-0.05	-0.05	-0.06	-0.06	-0.06
14 oil	-0.04	-0.04	-0.04	0.00	0.00	0.00	-0.05	-0.04	-0.04
15 gas	-0.05	-0.04	-0.04	0.01	0.01	0.02	-0.05	-0.05	-0.05
16 omn	-0.18	-0.17	-0.17	-0.13	-0.13	-0.12	-0.28	-0.28	-0.27
17 cmt	-0.67	-0.53	-0.24	-0.46	-0.32	-0.03	0.11	0.25	0.53
18 mil	-1.52	-1.33	-0.88	-1.24	-1.04	-0.60	-0.94	-0.75	-0.31
<u>19 ofd</u>	<u>0.29</u>	<u>0.28</u>	<u>0.20</u>	<u>0.56</u>	<u>0.54</u>	<u>0.47</u>	<u>0.85</u>	<u>0.84</u>	<u>0.76</u>
20 vol	-0.17	-0.22	-0.33	0.12	0.06	-0.05	-0.10	-0.15	-0.27
<u>21 pcr</u>	<u>0.48</u>	<u>0.39</u>	<u>0.22</u>	<u>0.44</u>	<u>0.35</u>	<u>0.19</u>	<u>0.34</u>	<u>0.26</u>	<u>0.11</u>
22 sgr	0.05	0.01	-0.08	-0.01	-0.05	-0.14	-0.36	-0.40	-0.49
<u>23 b_t</u>	<u>0.29</u>	<u>0.51</u>	<u>0.73</u>	<u>0.87</u>	<u>1.09</u>	<u>1.31</u>	<u>1.57</u>	<u>1.78</u>	<u>1.99</u>
24 tex	-1.53	-1.51	-1.50	-1.00	-0.98	-0.97	-1.39	-1.37	-1.37
25 wap	-1.72	-1.64	-1.55	-1.32	-1.25	-1.16	-1.65	-1.57	-1.49
26 lea	-0.49	-0.45	-0.47	-0.28	-0.24	-0.26	-0.20	-0.16	-0.18
27 lum	-1.14	-1.07	-0.95	-1.04	-0.97	-0.85	-1.53	-1.46	-1.34
28 ppp	-1.01	-0.97	-0.90	-0.82	-0.77	-0.70	-0.98	-0.94	-0.87
29 crp	-1.47	-1.43	-1.38	-1.06	-1.01	-0.96	-1.63	-1.58	-1.54
30 p_cf	-0.48	-0.47	-0.41	-6.77	-6.75	-6.70	-0.28	-0.26	-0.21
31 p_c	-0.25	-0.25	-0.25	0.28	0.28	0.28	-0.23	-0.22	-0.22
32 nmm	-0.23	-0.22	-0.22	-0.06	-0.05	-0.06	-0.27	-0.26	-0.26
33 i_s	-0.90	-0.88	-0.87	0.11	0.12	0.13	-1.48	-1.46	-1.45
34 nfm	-1.17	-1.14	-1.11	-0.76	-0.73	-0.70	-1.11	-1.08	-1.06
35 omf	-1.27	-1.20	-1.13	-0.45	-0.38	-0.32	-0.97	-0.90	-0.84
36 fmp	-0.33	-0.32	-0.31	-0.24	-0.23	-0.22	-0.31	-0.31	-0.29
37 mvh	-1.23	-1.19	-1.11	-1.24	-1.19	-1.12	-0.85	-0.81	-0.74

Table 4. Simulated impact on sectoral output (Rp 50 trillion of cash transfers) - Continued

	Simulations 1			Simulation 2			Simulation 3		
Target	10%	20%	50%	10%	20%	50%	10%	20%	50%
38 ome	-1.35	-1.34	-1.36	-1.00	-0.98	-1.00	-1.32	-1.30	-1.32
39 ele	-2.97	-2.91	-2.84	-2.11	-2.06	-1.99	-3.00	-2.94	-2.88
40 otn	-1.74	-1.69	-1.59	-1.43	-1.38	-1.28	-0.92	-0.87	-0.78
41 ely	-0.22	-0.22	-0.21	0.16	0.16	0.17	0.23	0.23	0.24
42 gdt	-0.66	-0.63	-0.56	-0.28	-0.25	-0.18	-0.26	-0.22	-0.17
43 wtr	-1.03	-0.94	-0.58	-0.52	-0.42	-0.06	-0.05	0.03	0.39
44 cns	-0.03	-0.02	-0.02	-0.03	-0.03	-0.02	0.00	0.00	0.00
45 trd	-0.29	-0.27	-0.23	-0.15	-0.13	-0.09	-0.01	0.02	0.05
46 otp	-0.71	-0.64	-0.56	-1.73	-1.66	-1.57	-0.38	-0.31	-0.23
47 wtp	-0.87	-0.82	-0.76	-0.47	-0.41	-0.35	-0.58	-0.53	-0.47
48 atp	-0.86	-0.75	-0.62	0.53	0.65	0.78	0.20	0.31	0.44
49 cmn	-1.08	-1.05	-0.95	-1.03	-1.00	-0.89	-0.41	-0.39	-0.29
50 ofi	-0.72	-0.67	-0.58	-0.65	-0.61	-0.51	-0.48	-0.43	-0.34
51 isr	-1.21	-1.18	-1.07	-1.28	-1.24	-1.14	-0.87	-0.83	-0.73
52 dwe	-0.38	-0.35	-0.27	-0.34	-0.30	-0.22	-0.05	-0.01	0.07
53 obs	-0.77	-0.73	-0.67	-0.67	-0.63	-0.57	-0.70	-0.66	-0.60
54 osg	-0.06	-0.06	-0.06	0.04	0.04	0.04	0.28	0.28	0.28
55 ros	-0.68	-0.65	-0.59	-0.61	-0.58	-0.52	-0.09	-0.06	-0.01

Source: Author's calculation

Note: Description of industry names

1. pdr - Paddy rice 2. gro - Cereal grains nec 3. v_f - Vegetables, fruit, nuts 4. ocr - Crops nec 5. osd - Oil seeds 6. c_b - Sugar cane, sugar beet 7. pfb - Plant-based fibers 8. ctl - Cattle,sheep,goats,horses 9. rmk - Raw milk 10. oap - Animal products nec 11. frs - Forestry 12. fsh - Fishing 13. coa - Coal 14. oil - Oil 15. gas - Gas 16. omn - Minerals nec 17. cmt - Meat: cattle,sheep,goats,horse 18. mil - Dairy products 19. ofd - Food products nec 20. vol - Vegetable oils and fats 21. pcr - Processed rice 22. sgr - Sugar 23. b_t - Beverages and tobacco products 24. tex - Textiles 25. wap - Wearing apparel 26. lea - Leather products 27. lum - Wood products 28. ppp - Paper products, publishing	29. crp - Chemical,rubber,plastic prods 30. p_cf - Subsidized petroleum prod. 31. p_c - Petroleum, coal products 32. nmm - Mineral products nec 33. i_s - Ferrous metals 34. nfm - Metals nec 35. omf - Manufactures nec 36. fmp - Metal products 37. mvh - Motor vehicles and parts 38. ome - Machinery and equipment nec 39. ele - Electronic equipment 40. otn - Transport equipment nec 41. ely - Electricity 42. gdt - Gas manufacture, distribution 43. wtr - Water 44. cns - Construction 45. trd - Trade 46. otp - Transport nec 47. wtp - Sea transport 48. atp - Air transport 49. cmn - Communication 50. ofi - Financial services nec 51. isr - Insurance 52. dwe - Dwellings 53. obs - Business services nec 54. osg - PubAdmin/Defence/Health/Educat 55. ros - Recreation and other services

Figure 2. Simulated impact on real GDP (Rp 50 Trillion of cash transfers)

In all the simulations we did, the domestically-financed 50 trillion cash transfers reduce GDP. The size of the GDP decline varies according to whether it is financed through increasing value added tax rate or reducing fuel subsidy. As reducing fuel subsidy attenuates the distortion in the economy and its impact is not as widespread as increasing value added tax across the whole economy, the GDP decline of the transfer is roughly half of the GDP decline if the transfers is financed by increasing value added tax across the board. For example, the 50 trillion cash transfers distributed lump sum to the poorest 20% households will reduce GDP by 0.36% if financed by increasing value added tax rate and by 0.18% if financed by reducing fuel subsidy (Table 1).

The cost of the transfers to the economy (in the form of GDP decline) will be smaller the less-concentrated the distribution of the transfers among the poorest households. For example, if the cash transfers are distributed to the poorest 10% households (VAT financed), GDP will fall by 0.38%. However if the same amount of transfers are distributed to the poorest 50%, GDP will fall by only 0.33% (Table 1). This pattern is shown in Figure 2 where the size of the GDP decline is plotted against how widespread the transfer's beneficiary is.

The explanation of the pattern as illustrated in Figure 2 has to do with the spending patterns of the transfer's beneficiaries. If the transfers is more concentrated among the poorest, increase in demands will be dominantly necessities. These are mainly primary products that have relatively lower economy-wide (or backward linkage multiplier) effect to the rest of the economy. See Table 4 to confirm that primary food products and manufactured food products are commodities of which its supply expands as results of the cash transfers.

Source: Author's calculation

Note: Horizontal axis is the cumulative distribution of households starting from the poorest 10%, to the richest 10%.

Figure 3. Impact on Gini coefficient and poverty incidence

Another important finding from the macroeconomic perspective is that the cash transfers tend to be inflationary. Both consumer's price index and GDP price index rise quite significantly as a result of

the cash transfers. This to a large extent affects the level of Indonesian competitiveness in the world market creating real appreciation of exchange rate. As a result, Indonesian exports tend to fall and imports tend to rise, making Indonesia runs a current account deficit. The magnitude of the real exchange rate appreciation is noticeably higher if the transfers are fully supported by foreign financing. Standard economic theory of the “Dutch Disease” effect correctly predicts the real appreciation of the exchange rate like this.

In terms of reducing overall (or urban and rural) poverty, there is a clear benefit of focusing the transfers to the poorest of the poor. If all the 50 trillion rupiahs transfers are distributed uniformly among the poorest 10% nation-wide, its effect in reducing poverty incidence is highest (reducing nation-wide poverty incidence by as much as 6.08%, almost half of the current level of national poverty incidence). It should be noted too that the transfers that is financed by fuel subsidy give a slightly bigger poverty reduction than if financed by value added tax rise. However, because the 10% poorest households are predominantly rural, the bulk of the poverty reduction will be concentrated in rural areas. In fact, poverty incidence in urban area rises slightly. This happen firstly because only the minority of urban poor benefit from the transfers (if it is only given to the poorest 10% nation-wide), and secondly the urban poor lose their purchasing power due to the inflationary indirect impact of the spending of the rural poor (Table 2).

It is quite normal to expect that a cash transfers to a particular groups of households such as the poor will have a negative effect to the non-beneficiaries in a general equilibrium framework. Inflation triggered by the extra spending of the transfer’s beneficiaries are obviously felt by everyone, for example. The changing composition of sectoral production affects returns to and income from factors production ownership. This is felt widely by the rest of the economy disregarding whether they are the transfer’s beneficiaries. Figure 1 illustrates again this case when households can be grouped according to whether or not their welfare rise or fall after the cash transfers.

Figure 3 (fourth to sixth panel) illustrates the relationship between the poverty reduction and the distribution of transfers. Looking at rural and overall poverty only, it is clear that the size in the reduction of poverty is a decreasing function of the transfer’s distribution. The more we concentrate the cash transfer among the poorest, the larger the reduction in the poverty incidence. It means that the reduction in the poverty incidence will be lower if the transfers are more-widely distributed. However, it is not generally true for urban area. The size of the poverty reduction will be maximized if the cash transfers are distributed to (roughly) the poorest 30% in the economy (Figure 3, fourth panel) revealing a U-shaped pattern. The explanation lies in the way we structure the distribution of the transfers as we are progressing from giving it more widely to a larger number of households to more concentrated among the poorest. When we move (in the Figure) from right to left, first we are giving more cash to the households living below poverty line therefore the reduction in poverty increase as we move leftward. However, when it reaches to the point where the beneficiaries are only the poorest 30% (nation-wide), some households in urban areas (living under poverty line) are no longer beneficiaries because poor households are more concentrated in rural areas. Change in urban poverty then starts to increase again.

In general, cash transfers reduce inequality disregarding how it is financed and whether or not it is given to the poorest of the poor or distributed more sparsely to the entire population (Table 3 and

Figure 3, Panel 1 to 3). One thing that is very obvious is that the size of the reduction in inequality is noticeably the largest when it is financed by the reduction of fuel subsidy. For example, as can be seen from Table 3, distributing a 50 trillion rupiahs worth of cash transfers to the poorest 20% reduces Gini coefficient by 0.018 if financed by increasing VAT rate but it reduces it by 0.021 if financed by reducing fuel subsidy. The larger difference is in urban area (see Figure 3, panel 1). We understand that most beneficiaries of fuel subsidy are even the richest among the rich in the population. Reducing fuel subsidies and distributing it to the poor is undoubtedly among the most progressive actions. Not to mention with the finding from the simulation that it also costs the least to the economy (measured by the GDP reduction).

Comparing the inequality reduction in urban and rural areas, one should notice that the inequality reduction is a lot larger in rural areas than in urban areas. A natural explanation is because of a larger number of beneficiaries in rural areas than in urban areas for a given amount of cash transfers. Another explanation can be because of larger existing inequality at the first place. The gap between the poorest and the richest in urban areas is very large (supported by higher initial Gini coefficient). Giving a cash transfers to the poor in urban area, therefore, does not have a similar inequality-reduction effect as in rural areas.

4 CONCLUDING REMARKS

Cash transfers to the poor, especially if large enough, can cost economic growth if domestically financed. One strategy to reduce the cost of such transfers is to selectively use the type of domestic financing. Our simulation suggest that one priority would be to reduce distortionary subsidy particularly fuel subsidy for the case of Indonesia because it is still one of the dominant spending of the governments. Currently, it is a lot larger (roughly three times) than spending on social assistance.

Government should see that there is a benefit (in terms of larger poverty reduction) if the beneficiaries of the transfers is concentrated toward the poor minimizing the extent toward the non-poor. In other words, mistargetting of cash transfers can reduce the transfer's effectiveness in reducing poverty. This analysis provides an idea of how much the poverty-reduction loss of such mistargetting. However, this should be weighed against the fact that the more concentrated the distribution among the poorest, the larger the indirect-cost to the economy in terms of the GDP reduction due to the nature of the spending patterns of the poorest households.

Not only poverty, but inequality is also generally reduced by cash transfers. The reduction in inequality is much larger if such transfers are financed by the reduction of fuel subsidy. This confirms that existing fuel subsidy is generally regressive and reallocating them toward pro-poor government spending is much desirable policy option.

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