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Fiscal Decentralisation and Inequality in Indonesia¹

The study examined the effect of fiscal decentralisation on both vertical and horizontal inequality in 32 provinces of Indonesia in the period from 2005 to 2014 using several fixed effects (FE) estimations. Moreover, we assessed the mediating role of institutional quality in explaining the nexus between fiscal decentralisation and inequality. To complement the econometrics results, we conducted several semi-structured interviews (SSIs) based on expert judgement and focus group discussions (FGDs) among relevant stakeholders. This analysis focussed on the intergovernmental transfer policy designed and implemented at the sub-national government level. Such qualitative analysis started in the last week of March 2019 and ended in the first week of July 2019. The quantitative findings showed that there was a robust, positive, and significant relationship between fiscal decentralisation and vertical inequality when democracy was taken into account. Meanwhile, fiscal decentralisation was negatively correlated with horizontal inequality when the estimation included social capital. In addition, fiscal decentralisation appears to have a marginal impact on horizontal inequality when both democracy and the crime rate are considered in the full sample analysis. However, when we excluded provinces located in Java Island, the impact of fiscal decentralisation on horizontal inequality became clear. Regarding the qualitative aspect, the fieldwork results were consistent with the quantitative findings.

Keywords: fiscal decentralisation, vertical inequality, horizontal inequality, institutional quality, sub-national government, mixed method, fixed effects, semi-structured interviews, focus group discussion, Indonesia

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ОРИГИНАЛЬНАЯ СТАТЬЯ

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Фискальная децентрализация и неравенство в Индонезии

Статья посвящена исследованию влияния фискальной децентрализации как на вертикальное, так и на горизонтальное неравенство в 32 провинциях Индонезии в период с 2005 г. по 2014 г. с использованием оценки с фиксированными эффектами. Связь между фискальной децентрализацией и неравенством объясняется посредством оценки качества институциональной среды. В качестве дополнения к результатам эконометрического анализа в 2019 г. было проведено несколько полуструктурированных интервью, основанных на экспертных оценках и обсуждениях в фокус-группах стейкхолдеров. Тема обсуждений — политика межбюджетных трансфертов, разработанная и реализованная на субнациональном уровне правительства. Количественные результаты показали, что существует прочная положительная и значимая взаимосвязь между фискальной децентрализацией и вертикальным неравенством при учете показателя «уровень демократии». Между тем, фискальная децентрализация отрицательно коррелировала с горизонтальным неравенством, если в оценку был включен социальный капитал. Кроме того, при полном анализе выборки с учетом показателей «уровень демократии» и «уровень преступности» фискальная децентрализация лишь незначительно влияет на горизонтальное неравенство. Однако при исключении из выборки провинций, расположенных на острове Ява, влияние фискальной децентрализации на горизонтальное неравенство становится очевидным. Результаты качественного анализа соответствуют результатам количественного анализа.

Ключевые слова: фискальная децентрализация, вертикальное неравенство, горизонтальное неравенство, качество институциональной среды, субнациональное правительство, смешанный метод, фиксированные эффекты, полуструктурированные интервью, обсуждение в фокус-группах, Индонезия

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1. Introduction

Over the past few decades, many central governments in developing countries have essentially delegated the political, administrative, and fiscal powers to their sub-national governments. In line with this argument, Garman et al. analysed that, at the beginning of the 2000s, more than 80 % of the 75 developing countries have implemented decentralisation policies [1]. Since then, the number of developing countries relying on decentralisation principles has increased rapidly, based on the countries' characteristics such as fiscal capacity, population, and colonial origins.

Considering the above, Faguet's report provided the critical reasons behind such a phenomenon [1]. For example, policymakers in Peru, Cambodia, Mexico, India and Tanzania revealed that decentralisation could increase community participation and democracy, as well as strengthen public accountability and government effectiveness. Moreover, it could decrease inequality in access. Meanwhile, in the different cases, such as in

Colombia, South Africa, and Ethiopia, policymakers considered decentralisation in the provision of public goods and services as a means to abate ethnic conflict, and or separatist movements.

Besides the economic crisis that occurred in the period 1998–1999, the development of decentralisation in Indonesia cannot be separated from the grievance motive stated in the literature of internal conflict. According to Murshed and Tadioeddin, it is related to the difference between aspirations and achievements [2]. During economic crisis, local population in some resource-rich regions outside the Java Island, such as Aceh, Riau, East Kalimantan, East Timor, and Papua, experienced frustration due to “relative deprivation”. More specifically, central governments have marginalised these territories in terms of development, as the regions have not received a fair return on their natural resources for a longer period. Thus, to defuse the conflict, central government initiated the so-called “special autonomy” status to those resource-rich regions. Some

of them chose to stay, while East Timor held a referendum and became independent.

Several scholars have tried analysing the nexus between fiscal decentralisation and inequality. For example, Sepulveda and Martinez-Vazquez found that the size of government played a critical role in the nexus between fiscal decentralisation and distributions of income in 56 countries [3]. However, given the role of government size, Lessmann stated that fiscal decentralisation was negatively and significantly correlated with income inequality in 54 countries [4]. In another study, Goerl and Seiferling showed that the decentralisation of redistributive spending appeared to have no significant impact on income inequality in 48 countries [5]. In Indonesia, Siddique et al. found that fiscal decentralisation gave a positive contribution to expenditure inequality [6].

From the above analysis, we can see that the effect of fiscal decentralisation on inequality is unreliable. In addition, current studies only explain a common measurement of vertical inequality, Gini coefficient, which refers to the population inequality. However, such measurement cannot capture the dimension of horizontal inequality, which refers to inequality between different ethno-social groups or regions [7]. In addition, none of the recent works can provide a clear explanation on the role of institutional quality in the nexus between fiscal decentralisation and inequality. Therefore, the main objective of our study is to fill these gaps.

This paper examines the effect of fiscal decentralisation on both vertical and horizontal inequality in 32 provinces in the period from 2005 to 2014 by implementing several fixed effects (FE) estimations. In this context, we used Law No. 32/2004 on Local Governments and Law No. 33/2004 on Fiscal Balance between the Central Government and Local Governments as a basis for the analysis, since both regulations match the time-frame of our research. Additionally, we wanted to explore whether fiscal decentralisation is more effective for reducing both vertical and horizontal inequalities due to better implementation of institutional quality. To complement the econometric findings, we conducted several semi-structured interviews (SSIs) based on expert judgement and focus group discussions (FGDs) among relevant stakeholders on the role of institutional quality. This approach could largely explain how intergovernmental transfer policy is planned and implemented in the city of Depok and regency of Bekasi in West Java Province.

The next section presents literature review of fiscal decentralisation in Indonesia, as well as on the relationship between fiscal decentralisa-

tion and inequality. We then describe a new dataset and methodology that are closely related to the aspects of inequality in Indonesia. Before examining the conclusions, we explain the obtained econometric results based on several characteristics such as fiscal, institutional quality, and demography. This part is followed by a qualitative analysis of institutional quality of our case study.

2. Literature Review

The 2003 World Bank's report gives a historical overview of the development of decentralisation system in Indonesia [8]. Accordingly, the Indonesian government has implemented decentralisation under Law No. 1/1945. At that time, the Dutch were reluctant to give up their colonial possession and started to establish several Indonesian republics outside the Java Island (e.g. Republic of South Maluku). This situation lasted for less than a year, and Indonesia reverted to a unitary state. The issue of decentralisation came to the surface again with Law No. 5/1974. However, this law has not been implemented properly until 1992. In principle, this law assigned several affairs and each region had to prove to the central government that they were ready to conduct these affairs.

Finally, the economic crisis hit Indonesia in 1997; political and social instability continued in 1998. As a part of the reforms, the Government of Indonesia (GoI) was advised by the International Monetary Fund (IMF) and the World Bank to accelerate the decentralisation process [9]. Such a process led to the enactment of Law No. 22/1999 on Local Government and Law No. 25/1999 on the Fiscal Balance between the Central Government and the Local Governments that established Indonesia's administrative and fiscal decentralisation strategy.

After a two-year preparation, Indonesia officially entered a new era of decentralisation on 1 January 2001. Up to now, there has been a considerable number of amendments for both laws. For example, Law No. 22/1999 was replaced by Law No. 32/2004 and then by Law No. 23/2014. Additionally, Law No. 25/1999 was replaced by Law No. 33/2004 and currently the new amendment is still being revised by the House of Representatives. With most of the affairs delegated to the sub-national level, there has been a shift from highly centralised expenditure, dominated by the central budget (APBN, Anggaran Pendapatan Belanja Negara) to decentralised expenditures dominated by the district and provincial budget (APBD, Anggaran Pendapatan Belanja Daerah).

Before Indonesia embarked on a new era of decentralisation, the intergovernmental fiscal trans-

fers from the central government to the provincial and the district/city governments were made through a block grant concept, where the largest components were the subsidies for autonomous regions (SDO, Subsidi Daerah Otonom) and President Instruction (INPRES, Instruksi Presiden). On the one hand, the SDO was used to finance the salaries of civil servants and other current expenditures in the regions. On the other hand, the INPRES undertook expenditures for development in the regions.

From 2001 onwards, the GoI introduced general allocation fund (DAU, Dana Alokasi Umum), specific allocation fund (DAK, Dana Alokasi Khusus), and revenue sharing fund (DBH, Dana Bagi Hasil) based on natural resources and tax revenue. All of them are the components of the new intergovernmental fiscal transfer (Balancing Fund, Dana Perimbangan). Hence, the 2001 decentralisation was widely regarded as decentralisation of expenditure, as opposed to decentralisation of revenue, for the following reasons [10]: 1) the bulk of local governments' expenditures was mostly financed by the balancing fund; 2) the sub-national governments still had a limited local taxing power.

To date, the share of local own revenue in total local government revenue accounted for 10 % and 47 % in the budget of all districts/cities and provinces, respectively. Simultaneously, the share of balancing fund in total local government revenue accounted for 76 % and 32 %, respectively. Although sub-national governments received an annual increase in terms of the number of intergovernmental fiscal transfers from the central government, some researchers stated the efficiency in spending as a major issue. For example, the World Bank's findings showed that the largest expenditure for local government was for government administration, which constituted 38 % of total expenditure at the provincial level and 30 % at the district/city level [11]. In another study, Firman argued that sub-national governments have mostly used their intergovernmental fiscal transfers for employee expenditures such as salary and wages [12]. With little attention paid to public service expenditures (e.g. infrastructure, health, and education), such an approach could potentially deteriorate the development of sub-national governments in Indonesia.

Recently, many scholars have attempted to examine how fiscal decentralisation affects inequality. For example, in the period 1971–2000, Sepulveda and Martinez-Vazquez observed 56 countries to analyse the fiscal decentralisation–inequality nexus [3]. Concerned with the endogeneity issue, they implemented a generalised

two-stage least square procedure. The researchers found that government size played a significant role in the fiscal decentralisation – inequality nexus.

During the same observation period as Sepulveda and Martinez-Vazquez did, Sacchi and Salotti implemented various fixed effects (FE) techniques in 23 OECD countries [13]. The findings showed that tax expenditure did not significantly impact inequality. However, there was a positive association between tax revenue and income inequality. As opposed to Sacchi and Salotti's object of analysis, Bojanic studied 11 countries in the Americas over the period 1972–2012 [14]. Armed with Government Financial Statistics (GFS), he found that decentralisation had a minimal impact on inequality.

In another study, during the period from 1980 to 2010, Goerl and Seiferling implemented fixed effects (FE) model in 48 countries [5]. They found that there was no significant impact of decentralisation of redistributive spending on income inequality. In addition, there was a hump-shaped relationship between total expenditure decentralisation and income inequality. In contrast, Lessmann discovered that fiscal decentralisation was negatively correlated with regional inequality [4].

To sum up, the role of institutional quality and horizontal inequality is often neglected in the aforementioned empirical estimates. Therefore, our study will contribute to the literature focussed on fiscal decentralisation and inequality.

3. Methodological Approach

In this study, we obtained the data on our dependent variables, expenditure Gini and group Gini indexes based on ethnicity for the period 2005–2014, from the National Socio-Economic Survey (SUSENAS, Survei Sosial Ekonomi Nasional) and the last decadal census at inter-regional level in Indonesia, which were conducted by our statistical agency (BPS, Badan Pusat Statistik). Similarly, for the control variables, we incorporated the number of population and GRDP (Gross Regional Domestic Product) per capita over the period 2005–2014 from SUSENAS. Such data come from the aggregate number of population and GRDP per capita in districts and cities within one province in Indonesia.

Meanwhile, for the variable of interest, we obtained annual data on the share of intergovernmental fiscal transfers from the annual Local Budget (APBD, Anggaran Pendapatan dan Belanja Daerah) at the inter-regional level, which is compiled by the Ministry of Finance (MoF). According

Table 1
Summary statistics of inequality estimates

Variables	Observation	Mean	Std. Deviation	Min	Max
Gini ^{*1}	320	0.35	0.04	0.26	0.46
Group Gini ^{*2}	320	0.65	0.26	0.04	0.95
Fiscal dependency ^{*3}	319	0.76	0.1	0.43	0.96
Fiscal discretion ^{*3}	319	0.7	0.09	0.4	0.87
Democracy ^{*4}	192	67	6	52.6	83.9
Social capital ^{*4}	128	54.5	5.48	38	63.16
Crime rate ^{*4}	256	18	10.11	1.3	55.7
GRDP per capita ^{*4} (log)	320	9.46	0.9	7.68	11.8
Population ^{*4} (log)	320	15.2	1	13.44	17.64

^{*1} BPS — Badan Pusat Statistik (the Indonesia Statistical Agency).

^{*2} For further explanation of the formula, please see Stewart, F., Brown, G. & Mancini, L. (2005). Why Horizontal Inequalities Matter: Some Implications for Measurement. Retrieved from: <https://assets.publishing.service.gov.uk/media/57a08c95e5274a31e00012e4/wp19.pdf> (Date of access: 12.8.2019).

^{*3} MoF — Ministry of Finance.

^{*4} BPS — Badan Pusat Statistik (the Indonesia Statistical Agency).

Source: Authors' calculation.

to Law No. 32/2004, both DAU and DBH are categorised as block grants, which gives each local government complete discretion in spending. Meanwhile, DAK is described as a specific transfer, meaning that the central government regulates the use of the fund to meet the national priorities at the local level; there is a matching grant of ten percent every time local government receives such transfer.

We also measured institutional quality by applying the concept from Rothstein and Teorell [15]. Accordingly, the quality of institution can be assessed in terms of input and output levels. In the former, we consider incorporating the democracy index related to the access to government power. However, this is not a sufficient criterion to explain government quality at the macro (e.g. country) level [15]. In our study, the democracy index is a composite index from civil freedom, political rights, and democratic institution, which equal zero (0) if regions belong to the authoritarian regime and one hundred (100) if regions have full experience in democracy. Data on democracy are obtained from BPS and are available for the period from 2009 to 2014.

In addition to the input level, we also measured institutional quality at the output level. At first, we used the crime rate associated with the term of "law and order" since it reflects the quality of law enforcement and the capacity of law enforcement in preventing and punishing criminals [1]. Thus, both law and order are one of the dimensions in government quality at the macro level [15]. In this study, data on crime rate are related to the number of crime scenes or events at the province level and are compiled by BPS every year from 2007 to 2014.

Another aspect of institutional quality at the output level is social capital. According to Grootaert and van Bastelaer, such an indicator can measure government quality at the micro (e.g. communities) level [16]. In this study, social capital variable is a composite index including trust and tolerance, participation in groups and network, as well as reciprocity and collective action. The index equals zero (0) if regions have no social capital at all and one hundred (100) if regions are characterised by an abundance of social capital. The social capital data were obtained from BPS and are available for 2007, 2009, 2012, and 2014.

Overall, Table 1 presents the summary statistics of inequality estimates in Indonesia. On average, expenditure Gini index in Indonesia is relatively moderate; however, the indicator of horizontal inequality is very high. Moreover, the average value of fiscal dependency and fiscal discretion of each province in Indonesia is still relatively high, despite having a modest level of democracy and security, as well as a low level of social capital. In addition, the level of income per capita and number of population on average is quite high.

In this study, we implemented a sequential explanatory strategy. The collection and analysis of quantitative data in the first phase are followed by the qualitative part in the second phase, based on the results from the quantitative analysis [1]. The following benchmark model in cross-province level will be used as follows:

$$INEQ_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 Ins_{it} + \beta_3 (FD_{it} \times Ins_{it}) + \beta_4 X_{it} + \varepsilon_{it}. \quad (1)$$

where β_0 corresponds to the constant term, the subscript i denotes the province, t denotes the obser-

vation period (from 2005 to 2014), and ε is the corresponding disturbance term. Our dependent variables ($INEQ_{it}$) are expenditure Gini and group Gini indexes [17] that can capture vertical and horizontal inequality, respectively. One of the main interests throughout the paper lies in the coefficient β_1 , which measures the impact of fiscal decentralisation (FD_{it}) on regional proliferation. Here we used two indicators to gauge fiscal decentralisation at the sub-national level in a single-country analysis, as follows [18]: 1) Fiscal dependency ratio, which is the share of total balancing fund over total revenue, and 2) Fiscal discretion, which is the sum of general allocation fund (DAU) and revenue sharing fund (DBH) over total revenue. In this context, Ebel and Yilmaz stated that fiscal dependency and discretion ratio could be a method to capture fiscal imbalances and measure the extent of discretionary power of spending of local government, respectively [18].

Besides fiscal decentralisation, our next variable of interest is related to institutional quality. In this context, we wanted to capture the direct (Ins_{it}) and indirect effects ($FD_{it} \times Ins_{it}$) of institutional quality on inequality as stated in the coefficient β_2 and β_3 , respectively. Few empirical studies have pointed out the important role of institutional quality in inequality [3, 20]. However, none of them has analysed the indirect effect. This is partly due to the problem of measurement on institutional quality. Rothstein and Teorell stated that institutional quality can be best described on the input and output sides [15]. The former is related to the access to public authority (i.e. democracy), while the latter corresponds to the way in which authority is exercised (i.e. government quality or governance).

Since there are no reliable data on the Indonesian inter-regional measures of institutional quality, we used crime rate, democracy index, and social capital at the province level as proxy indicators. Thus, it is expected that those indicators can capture some dimensions of institutional quality at input and output levels. Meanwhile, X_{it} is a vector of control variables that are assumed to have an influence on inequality. Such variables are based on our theoretical framework and existing literature on fiscal decentralisation and inequality in many countries such as GRDP per capita and population [3, 5, 19, 21].

To sum up, following Siddique et al. [6], we hypothesise that the implementation of fiscal decentralisation in Indonesia will increase both expenditure Gini and group Gini indexes. Just like Sepulveda and Martinez-Vazquez [3], we also expect that democracy is positively correlated with vertical and horizontal inequality, hence, its mediating effect ($FD_{it} \times Dem_{it}$) will be negative. Meanwhile, we believe that social capital and law and order are both negatively correlated with expenditure Gini and group Gini indexes. Consequently, their interactive variables (i.e. $FD_{it} \times Soscap_{it}$; $FD_{it} \times Crime_{it}$) will be positive.

The above econometric analysis will be followed by fieldwork analysis through the implementation of several semi-structured interviews (SSIs) based on expert judgement and focus group discussions (FGDs) that began in the last week of March 2019 and ended on the first week of July 2019. Largely, the role of quality institution can be explained by looking at how intergovernmental fiscal transfer policy is planned and implemented at the districts/cities and provincial levels. To apply SSIs and FGDs, the respondents' consent to give information was crucial. Such information was divided into 2 (two) parts that included several open questions to the relevant stakeholders. In this context, the first part focusses the planning aspect, while the second part includes the implementation aspect, as follows:

(i). Are district/city and provincial governments involved in determining the allocation of intergovernmental fiscal transfers? How do district/city, provincial, and central government officials perceive transparency in the allocation process? What is the role of provincial government concerning transparency and elite capture in the allocation process?

(ii). Does the current intergovernmental fiscal transfer policy give rise to the "fear factor" for sub-national governments to execute their budget? To what extent are district/city and provincial governments able and willing to manage intergovernmental fiscal transfers? Does the current intergovernmental fiscal transfer remain insufficient for local governments to implement their delegated responsibilities?

Based on the aforementioned survey, the validation of the model is conducted in the following ways:

(i). Focus Group Discussions (FGDs)

This method is common in social research to collect general information from different perspectives [1]. Such information could be a means to obtain specific information when we conduct semi-structured interviews. In our research, we have conducted four FGDs. One FGD was focussed on stakeholders at the national level, as we invited the bureaucrats in central government (e.g. Ministry of Finance, Ministry of Home Affairs, and Ministry of Planning and Development) and the member of the National Parliament (Dewan

Perwakilan Rakyat — DPR). Other three (3) FGDs focussed on stakeholders at the provincial and district/city levels, as we involved local government apparatus such as Local Secretary (SETDA, Sekretaris Daerah), Local Development and Planning Agency (BAPPEDA, Badan Perencanaan Pembangunan Daerah), Local Government Unit Agencies (SKPD, Satuan Kerja dan Perangkat Daerah), and the member of the Local Parliament (Dewan Perwakilan Rakyat Daerah — DPRD).

(ii). Expert Judgement

According to Moleong, expert judgement is an interview approach that utilises researchers/observers' judgement to re-check the preliminary qualitative findings based on FGDs and econometric results [1]. Instead of unstructured interview, we chose to collect and assess any historical information and personal opinion in a practical manner through semi-structured interviews. In this study, we discussed the issue with experts/observers involved at the national level, namely: 1) Expert/observer on fiscal decentralisation; 2) Expert/observer on inequality; 3) Expert/observer on institutional quality. Those experts/observers have an academic background (e.g. University of Indonesia and Padjajaran University) and come from the relevant national organisations such as Committee for Implementation and Monitoring of Regional Autonomy (KPPOD, Komite Pemantauan Pelaksanaan Otonomi Daerah) and Indonesia Forum for Transparency (FITRA, Forum Indonesia untuk Transparansi). The academicians focussed on fiscal decentralisation and inequality aspect, while the latter provided inputs on the institutional quality aspect.

Moving to the case study, the selection sample of qualitative methods was based on two purposive arguments. First, Ministry of Finance stated that West Java province has low fiscal capacity. Second, the inter-regional measure of fiscal dependency and discretion ratio in West Java accounted for 70 % and 65 % of its total revenue, respectively. Since West Java consists of 27 districts/cities, we did not collect qualitative information from all districts due to time and cost constraints. Instead, we focussed on the stakeholders in the city of Depok and regency of Bekasi, as Ministry of Finance categorised them as having high and low fiscal capacity, respectively. In addition, the economic profiles of these regions differ from each other. While the former is closely related to the growth in manufacture and services sector, the regency of Bekasi is associated with the resource-rich region. Therefore, such profiles establish the analytical difference between the dynamic of institutional quality.

4. Results

We aimed to examine how fiscal decentralisation indicators, represented by fiscal dependency and discretion ratio, affects inequality, measured by expenditure Gini and group Gini indexes. Based on estimations obtained in the period 2005–2014, we have 108–319 observations that cover 32 provinces.

We started to analyse the nexus between fiscal decentralisation and vertical inequality with the basic panel of fixed effects (FE) estimations with standard error-correcting method. Such a method can resolve the issue of heteroscedasticity. We also considered the issue of cross-sectional dependence due to spatial effects and unobserved common factors [23]. The previous testparm analysis indicated that it is necessary to use both province and year FE when estimating expenditure Gini index. In principle, we used year FE to control time-variant unobserved characteristics. Simultaneously, province FE can control province-specific time-invariant in the regression.

In the standard FE model, we can see that the nexus between fiscal decentralisation and vertical inequality can be best explained through democracy when the provinces in Java Island are excluded from the analysis. Here, both fiscal decentralisation indicators are positively and significantly correlated with expenditure Gini index. Such result is similar to Bojanic's study, where he revealed a positive association between expenditure decentralisation and income Gini index when the equation excluded the U.S. and Canada. In addition, similar to Sepulveda and Martinez-Vazquez's findings, democracy is significantly and positively correlated with vertical inequality.

Pertaining to the indirect effect of democracy on inequality, there is a negative and significant correlation between the interactive variable, democracy and fiscal decentralisation, and inequality. Such finding suggests that democracy plays an important role in the fiscal decentralisation–vertical inequality nexus. In addition, as Sepulveda and Martinez-Vazquez stated in their study, there is a positive and significant correlation between population and expenditure Gini index.

Since institution and fiscal decentralisation are endogenous [5, 23], we have to solve the endogeneity issue using the appropriate estimation that considers the unobserved country-specific effect, autocorrelation, and short panel dataset. Thus, we implemented a two-step system generalised method of moments (GMM) to obtain the finite-sample corrected two-step covariance matrix [24]. In addition, we could not perform and estimate a two-step GMM on social capital in the rela-

Table 2
Panel regression between fiscal decentralisation and vertical inequality

Exp. variables	Dep. variable: expenditure Gini index								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	FE	FE	FE	Sys GMM	FE	FE	FE	FE	Sys GMM
Fiscal dep	-0.02 (0.03)	0.31 (0.3)	0.62** (0.3)	0.6* (0.31)	-0.05 (0.08)	-0.13 (0.34)	-0.04 (0.03)	-0.06 (0.11)	0.02 (0.14)
Fiscal dis									
Dem		0.003 (0.003)	0.01* (0.004)	0.01* (0.003)					
Soc.cap					0.001 (0.001)	-1 e ⁻⁰⁴ (0.01)			
Crime							0.001 (0.001)	4 e ⁻⁰⁴ (0.004)	0.002 (0.01)
Fiscal dep × dem		-0.004 (0.004)	-0.01* (0.005)	-0.01** (0.004)					
Fiscal dep × soc.cap					-0.001 (0.001)	5 e ⁻⁰⁴ (0.01)			
Fiscal dep × crime							-0.003 (0.001)	-0.002 (0.005)	-0.003 (0.01)
Fiscal dis × dem									
Fiscal dis × soc.cap									
Fiscal dis × crime									
GRDP pc (log)		0.006 (0.01)	0.002 (0.02)	0.01* (0.005)	-0.003 (0.002)	-0.002 (0.03)	0.004 (0.003)	0.002 (0.02)	0.01* (0.005)
Pop (log)		0.12 (0.1)	0.18* (0.11)	0.001 (0.005)	0.15 (0.07)	0.19 (0.14)	0.1 (0.06)	0.14 (0.12)	-0.001 (0.006)
Observation	319	192	162	192	128	108	256	216	256
Groups	32	32	27	32	32	27	32	27	32
Instruments	—	—	—	22	—	—	—	—	30
Lag	—	—	—	2	—	—	—	—	2
AR (1)	—	—	—	0.002	—	—	—	—	0.001
AR (2)	—	—	—	1	—	—	—	—	0.36
Hansen test	—	—	—	0.47	—	—	—	—	0.14
R-squared within	0.62	0.51	0.5	—	0.6	0.56	0.63	0.62	—

Continuation of the Table 2

Exp. variables	Dep. variable: expenditure Gini index								
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	FE	FE	FE	Sys GMM	FE	FE	FE	FE	Sys GMM
Fiscal dep									
Fiscal dis	-0.01 (0.03)	0.28 (0.31)	0.61* (0.32)	0.8** (0.37)	-0.1 (0.11)	-0.2 (0.34)	-0.08 (0.06)	-0.13 (0.12)	0.04 (0.11)
Dem		0.003 (0.003)	0.006* (0.004)	0.01** (0.003)					
Soc.cap					7 e ⁻⁰⁵ (7 e ⁻⁰⁴)	-7 e ⁻⁰⁴ (0.04)			
Crime							-0.002 (0.002)	-0.003 (0.004)	0.004 (0.005)
Fiscal dep × dem									

Continuation of the Table next page

Continuation of the Table 2

Exp. variables	Dep. variable: expenditure Gini index								
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	FE	FE	FE	Sys GMM	FE	FE	FE	FE	Sys GMM
Fiscal dep × soc.cap									
Fiscal dep × crime									
Fiscal dis × dem		−0.004 (0.004)	−0.009 (0.005)	−0.01** (0.005)					
Fiscal dis × soc.cap					7 e ^{−06} (0.001)	0.001 (0.01)			
Fiscal dis × crime							0.001 (0.003)	0.003 (0.005)	−0.006 (0.007)
GRDP pc (log)		0.01 (0.005)	0.006 (0.02)	0.01* (0.005)	−8 e ^{−04} (0.03)	7 e ^{−04} (0.03)	0.003 (0.004)	2 e ^{−04} (0.02)	0.01** (0.004)
Pop (log)		0.13 (0.1)	0.19* (0.11)	0.002 (0.005)	0.14 (0.1)	0.2 (0.14)	0.1 (0.04)	0.12 (0.12)	−1 e ^{−06} (0.004)
Observation	319	192	162	192	128	108	256	216	256
Groups	32	32	27	32	32	27	32	27	32
Instruments	—	—	—	22	—	—	—	—	30
Lag	—	—	—	2	—	—	—	—	2
AR (1)	—	—	—	0.002	—	—	—	—	0.001
AR (2)	—	—	—	0.96	—	—	—	—	0.28
Hansen test	—	—	—	0.6	—	—	—	—	0.14
R-squared within	0.62	0.5	0.5	—	0.6	0.57	0.63	0.62	—

Notes to Table 2: The number of parentheses represents the robust standard error where *** = significant at 1 percent level, ** = significant at 5 percent level, and * = significant at 10 percent level. In equations (3), (6), (8), (12), (15), and (17), we excluded provinces located on Java island. In the GMM method, as an instrument variable we used the natural logarithm of distance, which is the size of the province divided by the number of local governments. Full results are available upon request.

Source: Authors' calculation.

tionship between fiscal decentralisation and vertical inequality due to limited observation.

In Table 2, a robustness check on two-step system GMM yields even better results than the basic FE model in terms of size and magnitude. The finding confirms the previous estimation that fiscal decentralisation indicators, democracy, and their interactive variables are positively and significantly correlated with expenditure Gini index. In addition, income per capita, which was insignificant in the previous estimation, is positively correlated with vertical inequality. Such finding confirms Sepulveda and Martinez-Vazquez's and Sacchi and Salotti's result.

Regarding the relationship between fiscal decentralisation and horizontal inequality, the time FE test suggested that only province FE used in the standard FE model. Based on a full sample of provinces, Table 3 shows that both fiscal decentralisation indicators are negatively correlated with horizontal inequality. Moreover, there is a negative and significant relationship between social capital and horizontal inequality. Similar to Stewart's study where she believed that unequal access of social capital led to persistence of horizontal inequality [25], there might be an indication that so-

cial capital in Indonesia is asymmetric. In this context, group members may have stronger contacts within their own group than across groups. In addition, social capital plays a major role in the relationship between fiscal decentralisation and horizontal inequality since there is a positive and significant correlation between the interactive variable, fiscal discretion and social capital, and group Gini index.

When we excluded provinces located in Java Island from the estimation, we revealed that both fiscal decentralisation indicators are negatively and significantly correlated with group Gini index. Additionally, the crime rate, which reflects law and order, is negatively and significantly correlated with horizontal inequality. Such a finding is similar to Sonora's results [26]. Accordingly, improvements in legal systems could reduce inequality in the Latin American and other countries worldwide.

Considering democracy estimation, we discovered that both fiscal decentralisation indicators are positively and significantly correlated with group Gini. In addition, there is a positive and significant relationship between democracy and group Gini index, while its interactive variable

Table 3
Panel regression between fiscal decentralisation and horizontal inequality

Exp. Variables	Dep. variable: group Gini index								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	FE	FE	FE	Sys GMM	FE	FE	FE	FE	Sys GMM
Fiscal dep	0.05 (0.04)	0.9 (0.6)	1.4** (0.6)	-0.11 (0.16)	-0.24* (0.12)	-0.14 (0.6)	-0.21 (0.21)	-0.4** (0.17)	0.09 (0.11)
Fiscal dis									
Dem		0.008 (0.005)	0.01** (0.005)	-9 e ⁻⁰⁴ (0.001)					
Soc.cap					-0.01** (4 e ⁻⁰⁴)	-0.01 (0.008)			
Crime							-0.02 (0.01)	-0.03*** (0.01)	0.01 (0.01)
Fiscal dep × dem		-0.01 (0.006)	-0.01** (0.007)	0.001 (0.002)					
Fiscal dep × soc.cap					0.01** (7 e ⁻⁰⁴)	0.01 (0.01)			
Fiscal dep × crime							0.02 (0.01)	0.03*** (0.01)	-0.01 (0.01)
Fiscal dis × dem									
Fiscal dis × soc.cap									
Fiscal dis × crime									
GRDP pc (log)		0.002 (0.001)	0.001 (0.01)	-6 e ⁻⁰⁴ (0.004)	0.01** (6 e ⁻⁰⁴)	0.01 (0.01)	0.004 (0.004)	0.01 (0.01)	-0.003 (0.006)
Pop (log)		0.1 (0.003)	0.09 (0.1)	-0.01* (0.002)	0.03 (0.01)	0.05 (0.17)	0.08 (0.08)	0.03 (0.14)	-0.005 (0.003)
Observation	319	192	162	192	128	108	256	216	256
Groups	32	32	27	32	32	27	32	27	32
Instruments	—	—	—	22	—	—	—	—	30
Lag	—	—	—	2	—	—	—	—	2
AR (1)	—	—	—	0.01	—	—	—	—	0.01
AR (2)	—	—	—	0.6	—	—	—	—	0.52
Hansen test	—	—	—	0.69	—	—	—	—	0.49
R-squared within	0.01	0.09	0.14	—	0.06	0.07	0.09	0.14	—

Continuation of the Table 3

Exp. Variables	Dep. variable: group Gini index								
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	FE	FE	FE	Sys GMM	FE	FE	FE	FE	Sys GMM
Fiscal dep									
Fiscal dis	0.07 (0.04)	0.95 (0.7)	1.57** (0.67)	-0.22 (0.25)	-0.4* (0.05)	-0.36 (0.69)	-0.23 (0.18)	-0.38* (0.22)	0.11 (0.12)
Dem		0.01 (0.006)	0.01** (0.006)	-0.002 (0.002)					
Soc.cap					-0.008* (7 e ⁻⁰⁴)	-0.008 (0.008)			
Crime							-0.02 (0.008)	-0.02** (0.01)	0.007 (0.007)
Fiscal dep × dem									
Fiscal dep × soc.cap									
Fiscal dep × crime									

Continuation of the Table 3

Fiscal dis × dem		−0.01 (0.01)	−0.02* (0.01)	0.003 (0.003)					
Fiscal dis × soc.cap					0.01** (9 e ^{−04})	0.01 (0.01)			
Fiscal dis × crime							0.02 (0.01)	0.03** (0.01)	−0.01 (0.01)
GRDP pc (log)		−0.003 (0.005)	−0.007 (0.01)	7 e ^{−04} (0.004)	0.007 (0.003)	0.004 (0.01)	−0.001 (0.001)	−6 e ^{−04} (0.01)	−3 e ^{−04} (0.002)
Pop (log)		0.1* (0.01)	0.12 (0.11)	−0.006** (0.003)	0.04 (0.03)	0.08 (0.18)	0.1 (0.05)	0.07 (0.15)	0.07 (0.15)
Observation	319	192	162	192	128	108	256	216	256
Groups	32	32	27	32	32	27	32	27	32
Instruments	—	—	—	22	—	—	—	—	30
Lag	—	—	—	2	—	—	—	—	2
AR (1)	—	—	—	0.01	—	—	—	—	0.01
AR (2)	—	—	—	0.6	—	—	—	—	0.47
Hansen test	—	—	—	0.62	—	—	—	—	0.82
R-squared within	0.01	0.11	0.17	—	0.07	0.09	0.08	0.11	—

Notes: The number of parentheses represents the robust standard error where *** = significant at 1 percent level, ** = significant at 5 percent level, and * = significant at 10 percent level. In equations (3), (6), (8), (12), (15), and (17), we excluded provinces located in Java Island. In the GMM method, as an instrument variable, we used the natural logarithm of distance, which is the size of the province divided by the number of local governments. Full results are available upon request.

Source: Authors' calculation.

with fiscal decentralisation indicators produces a negative and significant effect on horizontal inequality. Such condition is similar to the results from the expenditure inequality equation. For the sake of robustness check, following the previous estimation of vertical inequality, we conducted a two-step system GMM. However, both fiscal decentralisation indicators lost their size and magnitude when democracy and crime rate were taken into account.

5. Discussion

Based on the quantitative results, it is obvious that institutional quality plays an important role in the nexus between fiscal decentralisation and inequality. Considering this argument, our fieldwork results indicated several problems on how the current intergovernmental fiscal transfer policy was designed and implemented at the sub-national government level. These issues could worsen the development of a local government.

Considering the planning aspect, Law No. 32/2004 on Local Government states that central government should involve every sub-national government in designing intergovernmental fiscal transfer policy since they have sufficient knowledge and information on the preferences of local people. In fact, our FGD at the local government level confirmed that the central government through Ministry of Finance (MoF) continued to adopt the so-called "top-down" approach in the

allocation of such transfer. During FGD at Bekasi and Depok, both Suherly, a senior employee from Local Secretary in Bekasi, and Masikin, an employee from Local Development and Planning Unit in Depok, stated "In designing the allocation, the central government did not emphasise the need and capacity of local government."¹ This argument was later denied by one participant from FGD at the national level. Gustaf, a senior rank official from Ministry of Official, pointed out the following: "We always implemented a "bottom-up" approach in intergovernmental fiscal transfer policy in an appropriate manner that included the allocation."² While he claimed that local governments were involved in designing such a policy, our expert judgement from the national organisation indicated the nuance of "top-down" approach, as all of them highlighted the lack of transparency in the allocation process.

Based on the above analyses, there is a possibility that the democratic process of designing intergovernmental fiscal transfer policy depends more on certain elites, as mentioned by Scheve and Stasavage [27]. In this context, besides the potential economic rent-seeking within the inner circle of the MoF, every government level

¹ FGD with local government stakeholders in Bekasi and Depok on 27 March 2019 and 18 April 2019, respectively.

² FGD with national government stakeholders in Jakarta on 15 May 2019.

might try influencing the MoF's decision to gain or even to raise allocations to the prospective/captured regions. Though in the process of FGD with the national stakeholders such claim was denied, our expert from the national organisation proved that there were several interventions, as multiple stakeholders tried to influence the allocation.¹ Some action required the so-called "direct intervention" where the head of a local government directly visited the central government. Even some Mayor dan Regent instructed their head of the local government unit (SKPD) to accompany and lobby the allocation process. In addition, since fiscal transfer involved the political process and support from multiple government stakeholders, members of the Local and National Parliament could capture such a process in an attempt to maintain and increase the number of existing and potential voters at the election. Even local executives had an economic rent-seeking motive, since their influence on the allocation process could determine the scale of development projects in their region. Moreover, there was a possibility that the local government apparatus had a bureaucratic rent-seeking motive since intergovernmental fiscal transfer served as a means for job promotion.

In line with the democracy capture and rent-seeking motive, every provincial government should play a critical role in solving such problems. According to Law No. 32/2004 on Local Government, they should address the issue of relative deprivation, particularly related to intergovernmental fiscal transfer. In this context, the discrepancy between aspirations of the district/city governments and the central government's expectations should be minimised. In fact, our FGD with local government stakeholders stated that the provincial government tended to worsen the elite capture and rent-seeking phenomenon in the process of location and allocation determination. Such claims were later denied during FGD with the provincial stakeholders, where both Suheni, an employee of the Local Development Planning unit, and Nanang, an employee of the Local Secretary, stated the following: "We always served the best interest of local people within our districts/cities. The accusations of rent-seeking and elite capture at the provincial level were completely irrelevant."²

The problems occurring at the planning level seriously affect the implementation level. Based on FGD results at the local and provincial levels,

the implementation of intergovernmental fiscal transfer is regulated by technical guidance. Such "partial" decentralisation à la Faguet and Poschl indicates where local governments in Indonesia do not have decision-making autonomy [28]. Since the guidance was established by central government, the problems of implementation of such transfer occurred at the sub-national government level. During our FGD at the local and provincial levels, the interviewees stated that such technical guidance was too rigid to be implemented since the arrangement process did not involve sub-national government stakeholders. Moreover, central government was always late in issuing such guidances. Since local government officials are afraid of making mistakes and breaking the rules, the current policy provides the so-called «fear factor» for local governments to limit their spending.

Finally, the phenomenon of democracy capture and rent-seeking motive behind intergovernmental fiscal transfer creates another problem at the implementation level where, according to Law No. 32/2004, every local government must conduct obligatory affairs related and unrelated to basic public services, along with some optional affairs. In this context, during our FGD with Bekasi stakeholders, they stated that the number of intergovernmental fiscal transfers they received was not sufficient to implement those affairs. However, our FGD with Depok stakeholders revealed that they often received an allocation that exceeded their capacity to implement their affairs. Regarding this paradox, our experts believed that it happened due to the problem at the planning level, as there were political and economic motives behind intergovernmental fiscal transfer.³

6. Conclusion

The study presents new data the relationship between fiscal decentralisation and inequality in Indonesia. We applied several FE estimations to examine whether fiscal decentralisation, represented by fiscal dependency and discretion ratio, has some effect on inequality, measured by expenditure Gini and group Gini indexes. We also analysed whether institutional quality plays a mediating role in the nexus between fiscal decentralisation and inequality. To complement the quantitative results, we used qualitative methods and conducted several SSIs based on expert judgement and FGDs where multiple government stakeholders assessed how intergovernmental fiscal transfer

¹ Expert judgement of Hartanto from KPPOD and Edi from FITRA in Jakarta on 11 June 2019 and 20 June 2019, respectively.

² FGD with provincial government stakeholders in Bandung on 30 April 2019.

³ Expert judgement of Suhendar from Tirtayasa University in Banten on 26 June 2019 and Komaruddin from Padjajaran University in Bandung on 04 July 2019, respectively.

policy in Indonesia is designed and implemented at the local government level.

The main result of the empirical examination is the identification of a robust, positive, and significant relationship between fiscal decentralisation and vertical quality when democracy is taken into account. Meanwhile, fiscal decentralisation is negatively correlated with horizontal inequality when estimation includes social capital. However, such finding is not robust as it cannot solve the endogeneity problem. In addition, fiscal decentralisation appears to have a marginal impact on horizontal inequality when both democracy and crime rate are considered in the full sample analysis. However, when we exclude provinces located in Java Island, the impact of fiscal decentralisation on horizontal inequality becomes clear. For example, both fiscal decentralisation indicators are positively correlated with group Gini index when democracy is taken into account. In contrast, the opposite result occurs when the crime rate is taken into account.

Our quantitative findings are somewhat consistent with the fieldwork results where institu-

tional quality does matter in explaining the nexus between fiscal decentralisation and inequality. Here, the political and economic motives that constitute democracy capture and rent-seeking behaviour could influence the intergovernmental fiscal transfer policy in Indonesia. Those factors are crucial in explaining why Indonesian fiscal decentralisation is positively correlated with vertical inequality and has a marginal impact on horizontal inequality, respectively.

To summarise, the central government should focus on improving managerial and administrative capacity of bureaucrats at every government level. However, such an approach requires collective action and commitment that involve multiple government stakeholders. Besides the improvement of bureaucratic quality, to effectively implement fiscal decentralisation policy, law and order are needed to reduce the effect of democratic capture and rent-seeking on other development aspects such as growth and poverty. Therefore, our crucial and detailed analysis study can be the basis for future research.

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