# Essays on Fiscal Decentralization:

## Evidence from developing countries with special focus on Indonesia

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# Essays on Fiscal Decentralization:
## Evidence from developing countries with special focus on Indonesia

# Essays over fiscale decentralisatie:
## resultaten van onderzoek in ontwikkelingslanden met de nadruk op Indonesië

Thesis

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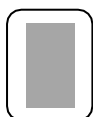Prof. S.M. Murshed

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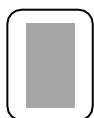Dr E. Papyrakis

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## ACRONYMS

APBD (Anggaran Pendapatan dan Belanja Daerah)

ATG (All the Ginis)

Bappeda (Badan Perencanaan Pembangunan Daerah)

Bappenas (Badan Perencanaan Pembangunan Nasional)

BPS (Badan Pusat Statistik)

CHT (*Cukai Hasil Tembakau*)

DAK (Dana Alokasi Khusus)

DAU (Dana Alokasi Umum)

DBH (Dana Bagi Hasil)

DESARTADA (Desain Besar Penataan Daerah)

DPOD (Dewan Pertimbangan Otonomi Daerah)

DSF (Decentralization Support Facility)

EPR (Ethnic Power Relations)

FE (Fixed Effect)

FGD (Focus-Group Discussion)

FITRA (Forum Indonesia untuk Transparansi Anggaran)

GDP (Gross Domestic Product)

GFS (Government Financial Statistics)

GLS (Generalized Least Square)

GMM (General Method of Moment)

GNI (Gross National Income)

GoI (Government of Indonesia)

GOLKAR (*Golongan Karya*)

GRDP (Gross Regional Domestic Product)

ICRG (International Country Risk Guide)

IMF (International Monetary Fund)

IPDN (Institut Pemerintahan Dalam Negeri)

IV (Instrumental Variable)

KPPOD (Komite Pemantauan Pelaksanaan Otonomi Daerah)

MoF (Ministry of Finance)

MoHA (Ministry of Home Affairs)

NGO (non-governmental organization)

OECD (Organization for Economic Co-operation and Development)

OLS (Ordinary Least Square)

PP (Peraturan Pemerintah)

RAI (Regional Authority Index)

RE (Random Effect)

SIPRI (Stockholm International Peace Research Institute)

SUSENAS (Survei Sosial Ekonomi Nasional)

UNDP (United Nations Development Programme)

V-DEM (Varieties of Democracy)

WDI (World Development Indicator)

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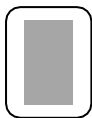
# ABSTRACT

This thesis aims to examine the determinants of regional proliferation in Indonesia and fiscal decentralization in developing countries. Additionally, it explains the mediating effect of institutional quality on the relationship between fiscal decentralization, growth, and inequality in developing countries.

In general, my thesis is divided into three parts. The first part contains the analysis of the drivers of regional proliferation (known as *pemekaran*) as a consequence of the implementation of decentralization in Indonesia. Here, a qualitative analysis of the motivation behind pemekaran in Indonesia is expected to complement the econometric results at cross-province level. Upon observation of the years between 2007 and 2014, I have found that institutional-quality indicators, proxied by the level of administrative approvals and social capital, are positively and significantly correlated with the number of regional-proliferation events. I have also discovered that intergovernmental fiscal transfers and income per capita cannot be a motive for regions in Indonesia to proliferate. In addition, there is a significant and positive association between ethnic fractionalization and the occurrence of regional proliferation in Indonesia. Meanwhile, the qualitative findings in West Java and Banten show that territorial coalitions do matter and that there are political, economic, and bureaucratic rent-seeking motives behind *pemekaran*.

While the first part focuses on several metrics of fiscal decentralization at the national level, the successive parts stress the macro dimension of the revenue and expenditure share, and the fiscal authority of sub-national governments at cross-country level. Drawing from the Government Financial Statistics (GFS) dataset and the Regional Authority Index (RAI), the second part explains the determinants of fiscal decentralization in developing countries. I argue that the different institutional settings of fiscal decentralization observed in developing countries depend on the quality of institutions. Specifically, policy-makers may have other incentives (e.g. political resistance and challenges) to alter the degrees of fiscal powers. My observation is based on a five-year average of periods between 1990 and 2014 in 56 developing countries. The findings show strong evidence of a nonlinear relationship between institutional quality and some metrics of fiscal decentralization. In this context, as democracy (polity), law and order, as well as fiscal decentralization are all evolving from low levels of

development, a further surge in the magnitude of these institutional quality variables will further abate the degrees of fiscal autonomy and expenditure decentralization, respectively.

Based on the results from the second part, the third part will discuss how fiscal decentralization affects growth and inequality in developing countries. In the former case (i.e. growth equation), based on observations in 46 developing countries from 1990 to 2014, findings show that growth depends on the level of fiscal authority and its interaction with institutions. Decentralization of revenue leads to higher economic growth through stronger law and order. Decentralization of expenditure has a positive effect on growth when coupled with high democracy and low corruption. The effect on growth of a shared-rule of fiscal powers is likely to be affected by democracy and quality of governance. Meanwhile, in the latter case (i.e. inequality equation), based on observations across 56 developing countries in the period 1990 to 2014, findings show that the kind of fiscal authority has a significant effect on distribution of income and ethnic inequality. This depends on whether developing countries reach the optimum level of institution and defense spending.

To sum up, this thesis shows that institutional quality plays a significant role as a driver of regional proliferation in Indonesia and fiscal decentralization in developing countries. Additionally, at the very least, process-based and outcome-based measures of institutional quality are very effective to reduce inequality and to enhance economic growth in developing countries. Hence, one may expect that such metrics can also be applied in other countries.
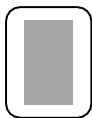
# SAMENVATTING

Dit proefschrift beschrijft onderzoek naar de determinanten van regionale proliferatie in Indonesië en fiscale decentralisatie in ontwikkelingslanden. Daarnaast geeft het een verklaring voor het mediërende effect van institutionele kwaliteit op het verband tussen fiscale decentralisatie, groei en ongelijkheid in ontwikkelingslanden.

Het proefschrift bestaat uit drie delen. Het eerste deel bevat de analyse van de stuwende krachten achter regionale proliferatie (*pemekaran* genaamd) als gevolg van de invoering van decentralisatie in Indonesië. Een kwalitatieve analyse van de motieven voor pemekaran in Indonesië dient om de econometrische resultaten op interprovinciaal niveau aan te vullen. Uit onderzoek naar de periode van 2007 tot 2014 blijkt dat indicatoren voor de institutionele kwaliteit, in de vorm van de hoeveelheid administratieve goedkeuringen en sociaal kapitaal, positief en significant samenhangen met het aantal gevallen van regionale proliferatie. Verder blijkt dat intergouvernementele fiscale overdrachten en inkomen per hoofd van de bevolking geen motief kunnen zijn voor regionale proliferatie in Indonesië. Daarnaast is er een significant positief verband tussen etnische versplintering en het optreden van regionale proliferatie in Indonesië. Tegelijkertijd blijkt uit de kwalitatieve resultaten in West-Java en Banten dat territoriale coalities er wel degelijk toe doen en dat er politieke, economische en bureaucratische motieven voor *pemekaran* zijn.

Terwijl het eerste deel gericht is op verschillende aspecten van fiscale decentralisatie op nationaal niveau, ligt in de volgende delen de nadruk op de macro-dimensie van het aandeel van inkomsten en uitgaven en op de fiscale autoriteit van de subnationale overheden op transnationaal niveau. Op basis van data in de Government Financial Statistics (GFS) en de Regional Authority Index (RAI) worden in het tweede deel de determinanten van fiscale decentralisatie in ontwikkelingslanden toegelicht. In dit proefschrift wordt betoogd dat de verschillende institutionele vormen van fiscale decentralisatie die in ontwikkelingslanden worden waargenomen afhankelijk zijn van de kwaliteit van de instellingen. In het bijzonder kunnen beleidsmakers andere motieven hebben (bijvoorbeeld politieke weerstand en uitdagingen) om de mate van fiscale bevoegdheden te veranderen. Deze waarneming is gebaseerd op een vijfjarig gemiddelde in de periode tussen 1990 en 2014 in 56 ontwikkelingslanden. De bevindingen wijzen duidelijk op een niet-lineair verband tussen institutionele kwaliteit en een aantal indicatoren van fiscale decentralisatie. Aangezien

democratie (staatsbestel), rechtsorde en fiscale decentralisatie alle evolueren vanuit een laag ontwikkelingsniveau, zal naarmate deze institutionele kwaliteitsvariabelen verder in omvang toenemen in deze context respectievelijk de mate van fiscale autonomie en de mate van uitgavendecentralisatie verder verminderen.

Op basis van de resultaten van het tweede deel wordt in het derde deel besproken hoe fiscale decentralisatie groei en ongelijkheid in ontwikkelingslanden beïnvloedt. Wat betreft de groeivergelijking blijkt uit de resultaten dat groei afhankelijk is van het niveau van de fiscale autoriteit en haar interactie met de instellingen. Deze bevinding is gebaseerd op waarnemingen in 46 ontwikkelingslanden van 1990 tot 2014. Decentralisatie van inkomsten leidt tot een hogere economische groei door een versterking van de rechtsorde. Decentralisatie van uitgaven heeft een positief effect op de groei wanneer er tegelijkertijd een hoge mate van democratie en weinig corruptie is. Het effect van een gedeelde fiscale macht op groei wordt waarschijnlijk beïnvloed door democratie en bestuurskwaliteit. Wat betreft de ongelijkheidsvergelijking blijkt uit waarnemingen in 56 ontwikkelingslanden in de periode 1990-2014 dat het soort fiscale autoriteit een significant effect heeft op inkomensverdeling en etnische ongelijkheid. Dit is afhankelijk van de vraag of ontwikkelingslanden het optimale niveau van institutionele en defensie-uitgaven bereiken.

Samenvattend blijkt uit dit proefschrift dat institutionele kwaliteit een belangrijke rol speelt als aanjager van regionale proliferatie in Indonesië en fiscale decentralisatie in ontwikkelingslanden. Bovendien zijn procesmatige en op uitkomsten gebaseerde maatstaven van institutionele kwaliteit zeer effectief om ongelijkheid te verminderen en economische groei in ontwikkelingslanden te bevorderen. Daarom is het te verwachten dat dergelijke indicatoren ook in andere landen kunnen worden toegepast.

# INTRODUCTION

Over the last several decades, many central governments have essentially devolved their political, administrative, and fiscal authorities to sub-national governments. According to data gathered by Garman et al. (2001, as cited in Sugiyanto et al., 2018), more than sixty developing countries analyzed had been implementing decentralization by the beginning of the millennium. Since then, the trend has only increased to involve all of the world's regions.

Based on the large number of developing countries implementing decentralization, Faguet (2014, as cited in Sugiyanto et al., 2018) sheds some light on the reason behind this phenomenon. Some policy-makers in Bolivia and Egypt view decentralization as a means of re-balancing the power between citizens and government in the hope that the effective participation by citizens in decision-making, the deepening of democracy, the satisfaction of collective necessities, and the level of socio-economic development will increase. Meanwhile, policy-makers in Peru, Cambodia, Mexico, and Tanzania emphasize reduction of inequality of access as the goal of decentralization, along with improving citizen participation and democracy, as well as strengthening public accountability and government effectiveness in public service delivery. On the other hand, some decentralization movements in Colombia and Ethiopia have been designed by their policy-makers to reduce ethnic conflicts, and/or separatist movements.

From the explanations above, it is clear that decentralization in developing countries is regarded as a panacea to improve economic efficiency, to increase resource mobilization and accountability, as well as to reduce inequality in their sub-national governments. However, some argue that it is almost impossible to achieve these objectives in developing countries (Bird & Vaillancourt, 1999). In addition to the problems of institutional capacity in local governments, the preferences of local citizens are sometimes not accommodated in the budget by their policy-makers. Political leaders may have thought that decentralization could provide people at grass roots level with a new kind of politics that would divert their attention from systems of patronage distribution (Manor, 1999). However, many politicians do not see decentralization as an alternative to patronage systems, but as a device to extend and to renew those systems. Indeed, there is evidence that decentralization tends to worsen economic

efficiency, inequality, and macroeconomic stability in developing countries (Prud'homme, 1995).

Moving from these debates, fiscal decentralization or decentralization in general can be differentiated into three types that refer to the degree of decision-making implemented independently by sub-national governments (Bird & Vaillancourt, 1999). First, delegation, whereby sub-national governments act as agents for the central government, and implement certain administrative, fiscal, and political functions on its behalf. Second, devolution, in which local governments have full authority to decide and to implement these functions. Third, deconcentration, which involves distribution of responsibilities from the central government to some sub-national administrative units. Martinez-Vazquez and McNab (2003) argue that the process of fiscal decentralization is closely related to either delegation or devolution of fiscal authority, including the decision-making power on the composition and the level of revenues and expenditures by sub-national governments. However, policy-makers in developing countries such as Vietnam, Ukraine, and regions of Central Asia prefer to conceptualize decentralization as a geographical deconcentration in delivering public goods and services (Martinez-Vazquez & McNab, 2003). Thus, a better assessment of decentralization in developing countries depends to some extent on the identification of these three varieties.

The evaluation of fiscal decentralization or decentralization in general also depends on the rationale for decentralization, which can be explained either through the bottom-up or the top-down approach (Bird & Vaillancourt, 1999). The bottom-up approach focuses on the improvement of institutional quality at the local level, in which the heterogeneity of preferences among different territorial units is very high, as emerges in India (Rao, 1999) and South Africa (Ahmad, 1999). Basically, both efficiency and redistribution functions among local governments cannot be optimally achieved if a central government does not delegate or devolve its power to sub-national governments, since they possess the knowledge related to the preferences of their citizens (Hayek, 1945). This delegation of power can enhance transparency and accountability among sub-national governments, as well as stimulate participation by local citizens, which then leads to more trust of government and results in increased government legitimacy and political stability (Bird & Vaillancourt, 1999). Those micro objectives at the sub-national level will contribute at the national level to an even greater improvement of welfare. In contrast, the top-down approach stresses the national policy agenda, as mentioned by Faguet (2014). Such is the case when a central government wants to delegate or to decentralize the fiscal authority to their sub-national governments in a

bid to obtain its allocative goals, as appears in China (Bahl, 1999), Indonesia (Shah, 1999), and Colombia (Bird & Fiszbein, 1999). In addition, there may even be a case where a central government uses decentralization as a means of shifting the burden of budget deficits to its sub-national governments with a hope to relax national political pressures (Bird & Vaillancourt, 1999).

Given the motivations for developing countries to decentralize, in general, a formal approach on how economists view fiscal decentralization has been traced by a public finance theorist. Musgrave (1959) points out that fiscal decentralization is a system that permits different groups living in various states to express different preferences on public services. Thus, he stresses the discretion of sub-national governments to formulate and implement policies that truly reflect the preferences of their residents. Since then, the popularity of fiscal decentralization has become a central discussion among many economists. Oates (1972) developed a decentralization theorem, which states that as local citizens have various preferences and different needs, a sub-national government's role in the provision of public goods and services becomes increasingly important to improve their welfare. Specifically, Oates (1999) states that local governments are much closer to local citizens since they have knowledge of local preferences that central governments do not possess. Thus, decentralization is needed to increase economic efficiency in the allocation of resources in public sectors.

Oates's theorem presented above assumes that no inter-jurisdictional spillover effects are associated with the public goods since the benefits of consuming these goods are limited to individuals within the jurisdiction. Here the distance between the provision level of public goods and the true preferences of local citizens can influence the potential benefits of decentralization. Moreover, a uniform level of provision of public goods tends to be inefficient, since each region has different socio-economic characteristics. In principle, public goods have two main properties, namely: non-rivalry and non-excludability (Musgrave, 1959). The non-rivalry assumption holds when the addition of individuals does not diminish the amount available to others, while the non-excludability property holds when no one can be excluded from its consumption. Here, Samuelson (1954) points out that the problem of non-excludability as a decentralized mechanism to obtain optimal public good provision is that it is very difficult to reveal users' true preferences due to the free-riding problem. Consequently, there is no market solution for public goods.

However, Tiebout (1956) challenges this argument. He states that when citizens have the option to choose the jurisdiction which provides them with the best net benefit, the demand of

consumers for local public goods can be revealed. In this case, homogeneous groups will be formed naturally, and their demand for certain public goods and services will be equal. Based on the work by Tiebout, the theory of club goods evolved, beginning with the work by Buchanan (1965), and followed by Cornes and Sandler (1996). In principle, not everyone in society has the same preferences, and participation is not universally voluntary. Thus, only members can receive the benefits from club goods. However, as the increased size of club membership reduces the cost of providing club goods, this may lead to congestion or crowding cost, a situation where one agent's consumption diminishes the quantity and/or quality of the goods available to others (Sandler, 2003). The critical point is that the provision of local public goods is closer to the characteristic of club goods. Hence, fiscal decentralization may achieve optimal provision of club goods.

Efficiency in the allocation of resources is one of the objectives of decentralization. The traditional argument of public finance theory also emphasizes macroeconomic stability and income redistribution. In the former (i.e. stability), both Gramlich (1993) and Spahn (1998) argue that macroeconomic stability cannot be achieved in decentralized systems if sub-national governments cannot contain shocks to the economy that should be symmetrically distributed among local citizens. Additionally, the same applies when decentralization leads to a less transparent assignment of responsibilities at all levels of government (Shah, 1999). Hence, based on these conditions, the stabilization of macroeconomic by sub-national governments is unlikely to be attained due to potential economic inefficiencies in local government expenditures.

Meanwhile, in the latter (i.e. redistribution), many sub-national governments should be involved in redistribution policies (Bahl et al., 2002). In this context, decentralized redistribution enhances the competition among local governments. This creates 'voting by the feet' incentives, whereby poor households move to jurisdictions that provide more generous redistribution schemes, while the rich shift to other jurisdictions with minimal tax and transfer schemes (Tiebout, 1956). However, one will argue that such fiscal mobility yields a zero-sum or even a negative-sum game that breeds new economic cost for all competing regions (Martinez-Vazquez & McNab, 2003). The loser regions will potentially spend more subsidy for poor households, while at the same time they will potentially receive less, or even lose tax revenues from the rich. Hence, from a dissenting point of view, central government should play a dominant role in redistribution if both redistributive policy and the preference of local people on public goods and services are uniform in all jurisdictions (Oates, 1972).

The rationales for and the traditional objectives of decentralization have led to the growth of empirical studies that seek to investigate the potential determinants of fiscal decentralization and its effect on economic growth and inequality. However, in general, scholarship focuses on either single-country analysis or cross-country studies, which mostly use either developed countries, notably OECD countries, or a combination of developing and developed countries as objects of analysis.[1] In addition, even if there are cross-country studies available, these studies tend to focus mainly on the impact of political decentralization, while the fiscal dimension of decentralization has received considerably less attention.[2] Thus, this study will offer a fresh exploration of the literature on the determinants of fiscal decentralization and the relationship between fiscal decentralization, growth, and inequality in developing countries.

Furthermore, one of the key challenges facing cross-country research in the area is the quality of data on fiscal decentralization. Most scholars use the Government Financial Statistics (GFS) dataset provided by the International Monetary Fund (IMF).[3] Although GFS has consistent definitions across countries over time, it ignores the degree of central governments' control over local revenues and expenditures. These measurement errors mean that the degree of fiscal decentralization tends to be overestimated. In addition, the GFS aggregates all sub-national governments into a single group, which does not take into account the number of sub-national governments within the country, the types of intergovernmental transfers, and the differences of revenue and expenditure among sub-national governments.[4]

In line with the measurement of fiscal decentralization indicators, the concept of inequality proposed by several scholars has also been subject to measurement problems.[5] The most common measure of inequality is the Gini coefficient, which can be defined in terms of income or consumption, and either for individuals or households. According to Tadjoeddin et

[1] For the case of economic growth, see Thornton (2007); Rodriguez-Pose and Ezcurra (2011); Baskaran and Feld (2013); Gemmell et al. (2013). For the case of inequality, see Sepulveda and Martinez-Vazquez (2011); Sacchi and Salotti (2014). For the case of the determinant of fiscal decentralization, Arzaghi and Henderson (2005) as well as Bodman and Hodge (2010).

[2] For the case of economic growth, see Iimi (2005). For the case of inequality, see Cavusoglu and Dincer (2015).

[3] For the case of determinant of fiscal decentralization, see Arzaghi and Henderson (2005). For the case of economic growth, see Gemmell et al. (2013). For the case of inequality, see Sepulveda and Martinez-Vazquez (2011).

[4] Most studies empirically examine fiscal decentralization as the local share of total government expenditure since it represents the authority of local government to make decisions related to types of expenditure (Davoodi & Zou, 1998). Others use the revenue structure of sub-national governments (Ebel & Yilmaz, 2002a), since local governments must be given the authority to exercise 'own-source' taxation, and that has important implications for the outcome of the fiscal decentralization process. In this research, since the data were largely discontinued after 2001, the GFS dataset will be supplemented by the RAI dataset.

[5] For example, Sepulveda and Martinez-Vazquez (2011) use the Gini Coefficient obtained from the World Income Inequality Database.

al. (2016), the Gini coefficient is a common measurement of vertical inequality, which they refer to as inequality in a population. However, it cannot capture horizontal inequality, which refers to inequality between different ethno-social groups or regions.

To address all of these limitations, I will deconstruct the Regional Authority Index (RAI) compiled by Hooghe et al. (2016) and create a new proxy of fiscal decentralization indicator.[6] Here, fiscal decentralization sums the score of fiscal autonomy and borrowing autonomy across all tiers of government. To my knowledge, the RAI dataset has been used by Bartolini and Santolini (2013), Carreras (2016), and Tranchant (2016) to measure the effect of decentralization on governance, inequality, and conflict, respectively. As a proxy for horizontal inequality, I propose using ethnic group political inequality, based on the Ethnic Power Relations (EPR) dataset (Vogt et al., 2015). This dataset has been used by several scholars mainly for conflict studies. With this growing availability of relevant data, the proposed research will make a timely contribution to the current literature.

Moving from measurement issues, most studies do not explicitly address the endogeneity issue. The debate mostly centers on whether decentralization refers to the cause of certain outcomes, or constitutes the effect of inequality or economic growth. In general, the direction of causation is at least debatable. The potential problem of endogeneity is likely to be a concern in a pure cross-country analysis. In the case of the determinant of fiscal decentralization and its effect on growth and inequality, most studies simply rely on simple pooled estimations, fixed effects, and random effects.[7] The instrumental variable (IV) technique might be appropriate, but finding the right instrument to tackle the reverse causality issue can be problematic.[8] To deal with this problem, I use the lagged values of endogenous explanatory variables in a static and a dynamic panel data analysis.

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[6] The Regional Autonomy Index (RAI) sums the score for self-rule and shared-rule. Self-rule is measured as the sum of five indicators: institutional depth, policy scope, fiscal autonomy, borrowing autonomy and representation. Shared-rule is measured as the sum of five indicators: law making, executive control, fiscal control, borrowing control, and constitutional reform. My understanding of the fiscal decentralization indicator in the dataset revolves around the degree of decision-making implemented independently by sub-national governments (self-rule) and the capacity of sub-national governments to determine the central government's decision-making (shared-rule).

[7] For the case of economic growth, see Davoodi and Zou (1998); Woller and Phillips (1998); and Rodriguez-Pose and Ezcurra (2011). For the case of inequality, see Goerl and Seiferling (2014). For the case of determinant of fiscal decentralization, see Panizza (1999); Arzaghi and Henderson (2005).

[8] For example, Sepulveda and Martinez-Vazquez (2011) use openness in trade as a proxy to mitigate the endogeneity issue in the relationship between fiscal decentralization and inequality. However, this variable constitutes a control variable of income inequality.

Moreover, the role of institutional quality on fiscal decentralization, growth, and inequality has largely been ignored by several scholars in their research.[9] In this study, institutions play a significant part in forming two hypotheses. On the one hand, they can be a determinant of fiscal decentralization. On the other hand, coupled with this type of decentralization, they have an intermediate effect on both growth and inequality (see Figure 1.1). In the former (i.e. a determinant), given other factors such as income per capita, size of country, number of population, as well as ethnic fractionalization, my argument is based on the premise that fiscal decentralization or decentralization in general can be more effective in a country if central government delegates specific and important responsibilities to sub-national governments through a clear and strong constitution (Manor, 1999). For example, India delegates specific powers to the central government, the state government, and others concurrently (Hankla, 2008). This may also be the case with constitutions in the more established democracies and institutions of Western Europe whereby authority is shared among different levels of government (Norton, 1991). Such a cooperative approach involves policy formulation and implementation between the central and sub-national governments.

**Figure 1.1 Two Hypotheses on Institutional Quality**
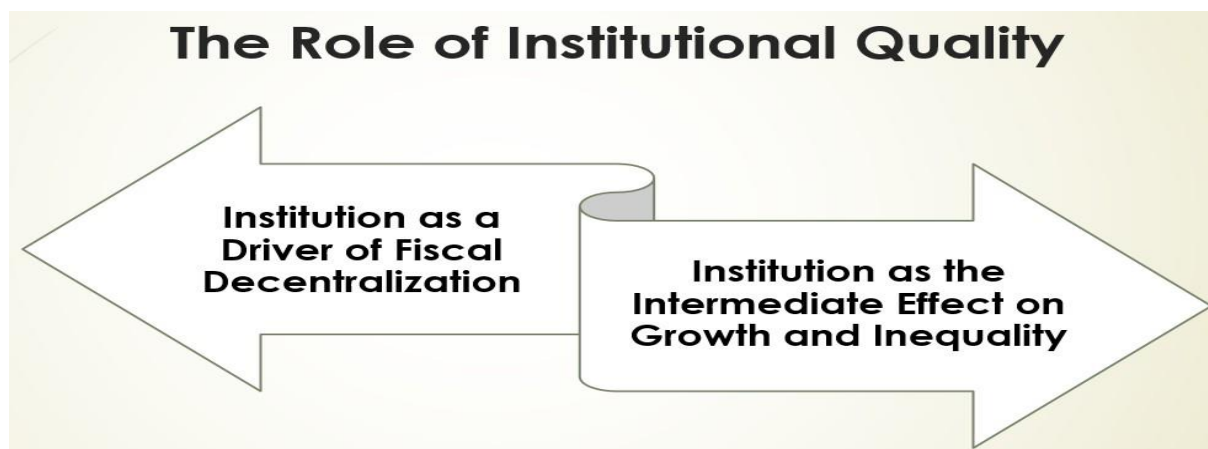


In addition to constitution, the effectiveness of fiscal decentralization or decentralization in general depends on the powers of sub-national governments to levy taxes. According to Oates (1972), officials of sub-national governments will not have the incentive to overspend, since they have the authority to change both the priorities and size of the sub-national government. In the absence of sub-national taxing authority, unconditional intergovernmental fiscal transfers by central governments are also needed to ensure that sub-national governments

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[9] For cases of the determinants of fiscal decentralization, see Panizza (1999); Arzaghi and Henderson (2005); Canavire-Bacarreza et al. (2016); Jametti and Joanis (2016); as well as Bodman and Hodge (2010). For the case of economic growth, see Thornton (2007); and Bodman (2008). For the case of inequality, see Goerl and Seiferling (2014).

implement their priorities (Manor, 1999). Aside from revenue powers, a strong rule of law is required to guarantee that sub-national governments have discretion over expenditures since they have the information and knowledge to match priorities to the preferences of their citizens. But in terms of revenue and expenditure, fiscally independent sub-national governments cannot run their functions properly if they have a problem with administrative capacity (Manor, 1999). Hence, good governance quality is a vital for effective decentralization.

Quality of government or governance is measured by the output/outcome based metrics of an institution (Rothstein & Teorell, 2008; Murshed et al., 2015). But, such a concept is somehow deficient if it does not correspond to the input/process based measures of an institution. Hence, Rothstein and Teorell (2008) propose a form of democracy that reflects electoral regimes. In this context, decentralization can be implemented effectively if officials in sub-national institutions are democratically elected; in this case fair elections can provide an incentive for responsiveness to their local electorate (Hankla, 2008). This will in turn lead the democratically elected leaders to deliver the quality of government that local citizens desire (Bird & Vaillancourt, 1999).[10]

About the latter (i.e. the intermediate effect), my hypothesis is that the potential benefits of fiscal decentralization or decentralization in general on the efficiency of allocation of resources and income redistribution depend on institutional quality. In this context, instead of the top-down (i.e. supply-driven) approach, I argue that the bottom-up (i.e. demand-driven) approach to redistribution schemes as well as to public goods and services may facilitate decentralization reforms in developing countries aimed at achieving these objectives. For example, based on experiments with social investment funds, Glaessner et al. (1994) showed that a number of Latin American countries performed well in redistribution and efficiency since they involved a high number of stakeholders within sub-national governments. Their operations were transparent and correctly targeted to low-income groups.

The Latin American experience can be an entry point to explain the intermediate effect of political accountability. In principle, both the interjurisdictional competition *à la* Tiebout (1956) and heterogeneity preferences *à la* Oates (1972) -- that play a significant role through which fiscal decentralization is expected to increase efficiency in allocation and hinder the capability of central government to suppress inequality -- are related to the political incentives

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[10] Aside from electoral competitiveness, a stable party system at the sub-national level can breed governance quality in terms of government stability at all levels of government. In the past, India could be a good case study (see Hankla, 2008).

of local officials, which should be matched with those of the majority of voters. In order to equitably distribute taxes and transfers as well as to deliver public goods and services according to their preferences, local officials can use 'voice' mechanism that ensures they are democratically elected and are responsive to their constituents. An empirical study conducted by Enikolopov and Zhuravskaya (2007) in 75 developing countries shows that fiscal decentralization can enhance efficiency and distribution if local government officials are not appointed by the central government. In Bolivia, a similar result was also found in Faguet's (2014) analysis, where these benefits of decentralization occur through the voice of local citizens.

From these examples, it is clear that accountability can serve as a control of behavior of local policy-makers, which confirms that their resources are spent efficiently and the beneficiaries of redistribution schemes are chosen properly. There is also a potential scenario that fiscal decentralization can hamper efficiency and distribution, ultimately effecting economic growth and inequality, even if they are democratically elected. Such a condition takes place when local government positions are captured by local elites (Bardhan & Mookherjee, 2000). This phenomenon creates several problems related to the high costs of providing goods and services, the redirection of benefits to unintended groups, and corruption. Hence, strengthening the accountability of local officials is one of the prerequisites to guarantee optimal efficiency and distribution. However, increasing fiscal authority without improving the capacity and competency of local officers, political responsibility, and a strong constitution to establish the division of powers between the central and sub-national governments can be detrimental factors in growth-promoting and inequality-reducing policies.

Based on several clarifications above, I conceptualize the role of institutional quality by using the concepts of Murshed et al. (2015), and Rothstein and Teorell (2008). They view institutions as either process/input based or outcome/output based.[11] According to Murshed et al. (2015), process-based quality is related to the degree of democracy or autocracy, whereby the outcome of institutional quality can be quantified by quality of governance. Another explanation comes from Rothstein and Teorell (2008). According to them, government as an institution regulates the relation to its citizens in two dimensions: the input side is related to access to public authority (i.e. democracy), while the output side corresponds to the way in

[11] Another scholar, Zhuang et al. (2010) provides a brief description of how institutions can be linked with democracy and governance. He briefly, *à la* North, argues that influence of all actors and sectors in society can be applied in a larger context. For example, in the determination of policy, its implementation and outcomes. These are the entry points for governance and democracy.

which authority is exercised (i.e. government quality or governance). Thus, my contribution in this research is to examine the role of institutional quality as the determinant of fiscal decentralization and to explore the mediating role of institutional quality on the relationship between fiscal decentralization, growth, and inequality.

Apart from quality of institution, another contribution of this thesis is to examine the role of military expenditure in the fiscal decentralization–inequality nexus. The study conducted by Sepulveda and Martinez-Vazquez (2011) shows that the size of general government expenditures plays an important role in the relationship between fiscal decentralization and inequality. As defense spending constitutes a considerable proportion of these, I believe that it creates the tragedy of the commons, particularly when the scope of conflict mitigation is shared across jurisdictions and is financed through a common pool of resources.

In addition to augmenting the existing literature, one of the important contributions of this thesis is, by applying a case study in Indonesia, to seek a connection between local government proliferation (*pemekaran*) and the country's overall decentralization policies. Indonesia's decentralization project, begun in 1999, is implemented through two major policies, namely: regional autonomy and regional proliferation. *Pemekaran* can be viewed as a form of regional autonomy. As a result, a new autonomous region has fiscal, administrative, and political autonomy. My econometric results in this case study will be supplemented by the qualitative method, whereby I conduct interviews and FGD with multiple stakeholders at national, provincial, and local levels regarding the process of local government formation as stated on PP No. 78/2007 and Law No. 23/2014.[12] In addition, their rent seeking behavior will be investigated to capture the nuances of political economy motives.[13]

The main objectives of the thesis are thus, first, to investigate the determinants of regional proliferation and fiscal decentralization; second, to explain the direct and mediating effect of institutional quality on the relationship between fiscal decentralization, growth, and inequality; and third, to clarify the role of military expenditure in the fiscal decentralization– inequality nexus.

Following these objectives, the main sets of research questions addressed are the following:

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[12] The selection criteria on local government will be further elaborated in the methodology section in Essay 1.

[13] For political motives, one might argue that *pemekaran* creates new opportunities to have new leaders and members of local parliaments. Moreover, opportunities for new echelons may open in the new regions, particularly for bureaucrats who have no position in the parent regions.

1. What are the drivers of regional proliferation in Indonesia? To what extent can intergovernmental fiscal transfers and institutional quality play a significant role in driving *pemekaran*?

2. What are the determinants of fiscal decentralization in developing countries? To what extent does institutional quality drive fiscal decentralization in developing countries?

3. To what extent can institutional quality explain the fiscal decentralization–growth and fiscal decentralization–inequality nexuses in developing countries?

4. To what extent can military expenditure elucidate the nexus between fiscal decentralization and inequality in developing countries?

These questions are addressed in three parts. The first part of the thesis (corresponding to chapter 2) will describe a case study in Indonesia to investigate the drivers of regional proliferation as a consequence of the implementation of decentralization in Indonesia. Here, a qualitative analysis on the motivation behind *pemekaran* in Indonesia is expected to complement econometric results at cross-province level. In the second part (corresponding to chapter 3), I will conduct analysis related to the determinants of fiscal decentralization in developing countries. This part will explain the significance of the role of institutional quality in driving fiscal decentralization in developing countries. Based on the result from the second part, the third part will consist of two essays (corresponding to chapters 4 and 5), which are devoted to describing the effect of fiscal decentralization on growth and inequality in developing countries. Here, I will discuss the contribution of institutional quality, as well as military expenditures, as intermediate effects.

# CONCLUSION

This thesis deals with several main issues. First, I examine the factors that drive territorial splits (*pemekaran*) in Indonesia and fiscal decentralization in developing countries. I also investigate the effects of fiscal decentralization on growth and inequality in developing countries. Second, to tackle the drawbacks of GFS-style measures, I introduce a new metrics of fiscal decentralization based on the fiscal authority of sub-national governments. Similarly, to gauge inequality between different ethno-social groups or regions, I utilize several measures of ethnic group political inequality. Last, in the analysis I focus on the crucial importance of institutional quality, in terms of process and outcome, and military expenditure. This thesis is divided into three parts. The first part is devoted to analysis of several factors that contribute to *pemekaran* and to assessment of whether institutional quality can play a significant role in the number of regional-proliferation events in Indonesia. The quantitative findings show that institutional quality indicators, gauged by social capital and level of administrative approvals, are significantly and positively correlated with the number of *pemekaran* events in Indonesia. Furthermore, neither fiscal transfer nor income can be a strong motive for regions in Indonesia to split. The qualitative findings in West Java and Banten corroborate the quantitative results, that fiscal issues do not provide a significant motive for creating new districts or cities. Instead, administrative requirements as stated in both PP No. 78/2007 and Law No. 23/2014, and collective action *à la* Grootaert and van Bastelaer (2001), do exist in the territorial splits process. Additionally, there is evidence of political, economic, and bureaucratic rent-seeking motives. While quality of institution is an important factor causing regions of Indonesia to proliferate, in my case study the qualitative findings cannot confirm that ethnic fractionalization is a driver of *pemekaran*. Therefore, whether this result is applicable either to other regions or to developing countries remains a topic for future research

The second part examines the role of institutional quality as a driver of fiscal decentralization in developing countries. Specifically, as policy-makers at either side of the range of median institutional quality may be susceptible to other incentives to alter the direction of policy away from decentralization, the institutional quality–fiscal decentralization nexus can be nonlinear. In this context, the relationship can be well explained in terms of the input or process-based (i.e. democracy) and the output or outcome-based (i.e. law and order)

measures of institutional quality. As democracy (polity), law and order, as well as degrees of fiscal decentralization, all arise from low levels of development, a further increase in the levels of these variables of institutional quality will further reduce the degrees of fiscal autonomy and expenditure decentralization, respectively. Important to note is that my study implies that the design, nature, and extent of decentralization do not depend solely on whether policy-makers can accommodate political partisans and obstacles. Aside from fiscal crisis, some officials in sub-national governments may have the incentive to spend their budget inefficiently. Moreover, corrupt officials in central governments may resist decentralization because they want to increase their degrees of rent-seeking at the sub-national level. Whether this finding can be generalized to a single country analysis or other cross-regional studies within developing countries (e.g. ASEAN and MENA countries) is a question for future research. However, at least in a large sample of developing countries, quality of institution determines variety of fiscal authority.

The third part explains the effects of fiscal decentralization on growth and inequality in developing countries. In the growth equation, varieties of fiscal decentralization and growth can be best described in terms of process-based and outcome-based measures of institutional quality. Assigning more revenue collection to sub-national governments (i.e. revenue decentralization) can promote growth through a better level of law and order. In addition, one source of efficiency is associated with the willingness of local governments to diversify spending in line with the preferences of local citizens. Hence, expenditure decentralization has a positive effect on growth, subject to a better implementation of electoral and liberal democracy and the ability of sub-national governments to control the risk of corruption. Another interesting result is the effect of shared-rule on growth. Increasing the level of co-sharing has a negative effect on growth in lower levels of governance (i.e. government and bureaucratic) quality and non-democracy settings. However, shared-rule makes a positive contribution to growth through a greater degree of law and order, as well quality of bureaucracy. My study presents a crucial implication, that the negative effect of fiscal decentralization on growth should not be used to endorse support of centralized government systems. In fact, policy makers at both sub-national and central government levels should find a way to improve political accountability, as well as managerial and administrative capacity in their countries in order to minimize the potentially negative impact of decentralization on growth.

Regarding the inequality equation, I find that different institutional settings of fiscal decentralization in developing countries can significantly contribute to distribution of income

and to ethnic inequality. On the one hand, when sub-national governments in these countries independently implement their revenue and expenditure responsibilities, as well taxing and borrowing policies, these all have a positive effect on vertical inequality. However, developing countries can actually improve the distribution of income if they reach a certain degree of democracy, bureaucratic quality, and military expenditure. The situation is totally different when central and sub-national governments take a cooperative approach to redistribution issues, as this has a negative effect on vertical inequality. Such an association can, to some extent, be explained through the channels of military expenditure, and law and order. On the other hand, the degree of regional authority plays a significant role in reducing horizontal inequality. In this context, sub-national governments can either carry out taxing and borrowing policies independently, or share such policies with the central government. Reduction of horizontal inequality can be achieved either through better implementation of democracy for self-rule, or a stronger rule of law for shared-rule. Additionally, the implementation of self-rule in developing countries requires an optimal degree of defense spending to more effectively reduce ethnic inequality. Thus, my study provides an important contribution regarding the links between varieties of fiscal authority and inequality.

All in all, whether the findings of this thesis in relation to Indonesia and developing countries are considered conventional or bizarre, this study is a work in progress. To some extent, the results suggest that institutional quality can be a driver for a region to proliferate, and can determine fiscal decentralization. Institutional quality also plays a significant role in the fiscal authority–growth nexus. Together with military spending, it can have an intermediate effect on inequality.

APPENDICES

## A1.1 Detailed List of FGDs

| No | Activities | Date and Location | Participants |
|---|---|---|---|
| 1 | FGD with national-government stakeholders | 3 June 2019, 17.00 – 18.30 Room 2.21 at University of National, Jakarta | 1 person from Directorate of Regional Autonomy (MoHA), 1 person from Directorate of Balancing Fund (MoF), and 2 persons from Directorate of Regional Autonomy (Bappenas) |
| 2 | FGD with national-watchdog members | 28 May 2019, 18.30 – 19.30 Room 3.11 at University of National, Jakarta | 2 persons from Committee for Monitoring Regional Autonomy (KPPOD), and 2 persons from Indonesia Forum for Budget Transparency (FITRA) |
| 3 | FGD with bureaucrats in District of Ciamis | 7 May 2019, 08.30 – 10.00 Bappeda Office at District of Ciamis | 2 persons from Local Secretariat (Setda), 2 persons from Local Development Planning Unit (Bappeda), and 1 person from Local Finance Unit (Keuda) |
| 4 | FGD with bureaucrats in District of Tangerang | 13 June 2019, 13.00 – 14.30 Bappeda Office at District of Tangerang | 1 person from Local Secretariat (Setda), 3 persons from Local Development Planning Unit (Bappeda), and 1 person from Local Finance Unit (Keuda) |
| 5 | FGD with bureaucrats in District of Pangandaran | 29 April 2019, 16.30 – 18.00 Bappeda Office at District of Pangandaran | 2 persons from Local Secretariat (Setda), 2 persons from Local Development Planning Unit (Bappeda), and 1 person from Local Finance Unit (Keuda) |
| 6 | FGD with bureaucrats in City of South Tangerang | 11 June 2019, 11.30 – 13.00 Bappeda Office at City of South Tangerang | 1 person from Local Secretariat (Setda), 2 persons from Local Development Planning Unit (Bappeda), and 1 person from Local Finance Unit (Keuda) |

## A1.2 FGDs Guidelines

1.    LIST OF QUESTIONS FOR FGD WITH NATIONAL GOVERNMENT STAKEHOLDERS (JAKARTA)

| **FGD DESCRIPTION** |
|---|
| This FGD is part of my research investigating the determinants of regional proliferation in Indonesia. I use a sequential explanatory strategy, |

characterized by collection and analysis of quantitative data in the first phase of research, followed by collection and analysis of qualitative data in the second phase, built on the results of the quantitative analysis.

During the first phase of research, I already conducted a negative binomial regression analysis whereby the dependent variable, regional proliferation, is treated as event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the degree of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation covers the years 2007 to 2014 in 32 provinces.

## REGIONAL PROLIFERATION POLICY IN INDONESIA

1. As we already knew, regional proliferation is one of the regional arrangement policies in Indonesia. How did the central government design a regional proliferation policy in Indonesia as a part of the Indonesian fiscal decentralization policy?

2. Regional proliferation in my case study is regulated comprehensively by Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation from 2007 to 2014 takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the differences between the regional proliferation policy of the current administration (Joko Widodo) and that of SBY's administration?

## CLARIFICATION OF QUANTITATIVE RESULTS

1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate, but ethnic fractionalization and institutions do affect the extent of regional proliferation in Indonesia. Based on your experience and insight, would you confirm this finding? How can this be explained?

2. LIST OF QUESTIONS FOR FGD WITH NATIONAL WATCHDOG (JAKARTA)

## FGD DESCRIPTION

This FGD is part of my research that investigates the determinants of regional proliferation in Indonesia. I use a sequential explanatory

strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis.

During the first phase of research, I already conducted a negative binomial regression analysis in which the dependent variable, regional proliferation, is treated as an event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the extent of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation covers the years 2007 to 2014 in 32 provinces.

## REGIONAL PROLIFERATION POLICY IN INDONESIA

1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. What is the National Watchdog's view on the Central Government's design of the regional proliferation policy in Indonesia as a part of the Indonesian fiscal decentralization policy?

2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. Our period of observation is from 2007 to 2014, taking place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the differences between the regional proliferation policy of the current administration (Joko Widodo) and that of SBY's administration?

## CLARIFICATION ON QUANTITATIVE RESULTS

1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate, but ethnic fractionalization and institutions do matter for the extent of regional proliferation in Indonesia. Based on your experience and insight, would you confirm this finding? How can this be explained?

3.    LIST OF QUESTIONS FOR FGD WITH PROVINCIAL GOVERNMENT OFFICERS (WEST JAVA AND BANTEN)

## FGD DESCRIPTION

This FGD is part of my research that investigates the determinants of regional proliferation in Indonesia. I use a sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis.

During the first phase of research, I already conducted a negative binomial regression analysis where the dependent variable, regional proliferation, is treated as event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the number of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation is from 2007 to 2014 in 32 provinces.

## REGIONAL PROLIFERATION POLICY IN INDONESIA

1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How does the Provincial Government's view on the Central Government's design of the regional proliferation policy in Indonesia as a part of Indonesian fiscal decentralization policy?

2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and that of SBY's administration?

## CLARIFICATION ON QUANTITATIVE RESULTS

1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate. While ethnic fractionalization and institutions do matter for the number of regional proliferation in Indonesia. Based on your experience and insight, would you confirm this finding? How could this be explained?

4. LIST OF QUESTIONS FOR FGD WITH LOCAL GOVERNMENT OFFICERS IN PARENT REGIONS (DISTRICT OF CIAMIS AND DISTRICT OF TANGERANG)

| FGD DESCRIPTION |
|---|
| This FGD is part of my research that investigates the determinant of regional proliferation in Indonesia. I use sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis. |
| During the first phase of research, I already conducted a negative binomial regression analysis where the dependent variable, regional proliferation, is treated as event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the number of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation is from 2007 to 2014 in 32 provinces. |
| **REGIONAL PROLIFERATION POLICY IN INDONESIA** |
| 1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How does the Parent Regions' view on the Central Government's of regional proliferation policy in Indonesia as a part of Indonesian fiscal decentralization policy? |
| 2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and SBY's administration? |
| **CLARIFICATION ON QUANTITATIVE RESULTS** |
| 1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate. While ethnic fractionalization and institutions do matter for the number of regional proliferation in Indonesia. Based on your experience and insight, would you confirm this finding? How could this be explained? |

5. LIST OF QUESTIONS FOR FGD WITH LOCAL GOVERNMENT OFFICERS IN NEW AUTONOMOUS REGIONS (DISTRICT OF PANGANDARAN AND CITY OF SOUTH TANGERANG)

| |
|---|
| **FGD DESCRIPTION** |
| This FGD is part of my research that investigates the determinant of regional proliferation in Indonesia. I use sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis. |
| During the first phase of research, I already conducted a negative binomial regression analysis where the dependent variable, regional proliferation, is treated as event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the number of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation is from 2007 to 2014 in 32 provinces. |
| **REGIONAL PROLIFERATION POLICY IN INDONESIA** |
| 1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How does the New Autonomous Regions' view on the Central Government's design of the regional proliferation policy in Indonesia as a part of Indonesian fiscal decentralization policy? |
| 2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and SBY's administration? |
| **CLARIFICATION ON QUANTITATIVE RESULTS** |
| 1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate. While ethnic |

fractionalization and institutions do matter for the number of regional proliferation in Indonesia. Based on your experience and insight, would you confirm this finding? How could this be explained?

## A1.3 The Detailed List of SSIs

| No | Activities | Date and Location | Informant |
|---|---|---|---|
| 1 | Interview with former member of National Parliament, Commission II | 4 July 2019, 18.30 – 20.00 Hotel Hilton, Yogyakarta | Zarkasih Noer |
| 2 | Interview with current member of National Parliament, Commission II | 13 July 2019, 20.00 – 22.00 National Parliament Office, Jakarta | Agun Gunanjar |
| 3 | Interview with bureaucrat at West Java Province | 16 May 2019, 11.00 – 13.00 The Administrative Government Unit Office, Bandung | Kusnanto |
| 4 | Interview with academician at West Java Province | 10 May 2019, 08.30 – 11.30 IPDN Office, Bandung | Sadu Wasistiono |
| 5 | Interview with bureaucrat at Banten Province | 14 June 2019, 17.00 – 18.00 Local Secretary Office, Banten | An unnamed source |
| 6 | Interview with academician at Banten Province | 14 June 2019, 14.00 – 15.30 Tirtayasa University Office, Banten | Indra Suhendar |
| 7 | Interview with chairman of local parliament at District of Ciamis | 8 May 2019, 09.00 – 10.30 Local Parliament Office, Ciamis | Nanang |
| 8 | Interview with bureaucrat at District of Ciamis | 8 May 2019, 11.30 – 13.00 Local Secretary Office, Ciamis | Saepuddin |
| 9 | Interview with local-watchdog member at District of Ciamis | 29 April 2019, 16.00 – 18.00 *Bina Pandu Mandiri* Office, Ciamis | Eka |
| 10 | Interview with local-watchdog member at District of Tangerang | 11 June 2019, 18.30 – 20.00 *GERAM* Office, Tangerang | Alamsyah |
| 11 | Interview with local-watchdog member at District of Pangandaran | 8 May 2019, 17.00 – 18.30 *GMBI* Office, Pangandaran | Nandang |
| 12 | Interview with current head of village at | 30 April 2019, 09.00 – 10.45 | An unnamed source |

| | | | |
|---|---|---|---|
| | District of Pangandaran | House, Cimerak | |
| 13 | Interview with current head of village at District of Pangandaran | 30 April 2019, 14.00 – 15.30 House, Ciparanti | An unnamed source |
| 14 | Interview with local-watchdog member at City of South Tangerang | 13 June 2019, 16.00 – 17.30 *GARDA* Office, South Tangerang | Fikri |
| 15 | Interview with bureaucrat at City of South Tangerang | 18 June 2019, 09.00 – 11.00 Local Government Unit Office, South Tangerang | Abdul Rojak |
| 16 | Interview with current head of village at City of South Tangerang | 15 June 2019, 09.00 – 10.30 Office, Ciputat | Unnamed source |
| 17 | Interview with current head of village at City of South Tangerang | 15 June 2019, 13.00 – 14.30 Office, Serpong | Unnamed source |

## A1.4 Interview Guidelines

1.    LIST OF QUESTIONS FOR INTERVIEW WITH NATIONAL STAKEHOLDERS (JAKARTA)

| **IDENTITY** |
|---|
| NAME : POSITION : |
| **INTERVIEW DESCRIPTION** |
| This interview is part of my research that investigates the determinant of regional proliferation in Indonesia. I use a sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, is built on the results of the quantitative analysis. During the first phase of research, I already conducted a negative binomial regression analysis where the dependent variable, regional proliferation, is treated as event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the extent of regional proliferation in Indonesia. In the analysis, I also considered several motives |

of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation is from 2007 to 2014 in 32 provinces.

| **REGIONAL PROLIFERATION POLICY IN INDONESIA** |
| --- |
| 1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How does the National Parliament view the Central Government's design of the regional proliferation policy in Indonesia as a part of Indonesian fiscal decentralization policy? <br><br> 2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and SBY's administration? |
| **CLARIFICATION ON QUANTITATIVE RESULTS** |
| 1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate, but ethnic fractionalization and institutions do matter for the extent of regional proliferation in Indonesia. Do you confirm this finding? And do you think that proliferation in Indonesia is viewed as a means *per se* to boost local economic development and public services in new autonomous regions? <br><br> 2. On institutional quality, what is the role of members of the National Parliament in the decision-making process of granting a region to proliferate? As far as you know, is there any involvement of other actors (e.g. local elites, local businessmen, provincial elites, national elites, and political parties) on regional proliferation in Indonesia? If so, what is the role of those actors? How and why are such actors involved in regional proliferation in Indonesia? |

2.      LIST OF QUESTIONS FOR INTERVIEW WITH PROVINCIAL STAKEHOLDERS (WEST JAVA AND BANTEN)

| **IDENTITY** |
| --- |

| NAME : |
| --- |
| POSITION : |

**INTERVIEW DESCRIPTION**

This interview is part of my research that investigates the determinant of regional proliferation in Indonesia. I use a sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis.

During the first phase of research, I already conducted a negative binomial regression analysis whereby the dependent variable, regional proliferation, is treated as an event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the extent of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation covers the period 2007 to 2014 in 32 provinces.

**REGIONAL PROLIFERATION POLICY IN INDONESIA**

1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How does the Provincial Stakeholders' view on the Central Government's design of the regional proliferation policy in Indonesia as a part of Indonesian fiscal decentralization policy?

2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and SBY's administration?

**CLARIFICATION ON QUANTITATIVE RESULTS**

1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate, but ethnic fractionalization and institutions do matter for the number of regional proliferation in Indonesia. I knew that in West Java and Banten Province,

District of Ciamis and District of Tangerang had been proliferated into the District of Pangandaran and the City of South Tangerang, respectively. As far as you know, what drives these new autonomous regions to proliferate? Do you think that such proliferation is viewed as a means *per se* to boost local economic development and public services in the new autonomous region?

2. On institutional quality, what and how are members of the Provincial Parliament and Provincial Government involved in the decision-making process of granting a region to proliferate? As far as you know, is there any involvement of other actors (e.g. local elites, local businessmen, provincial elites, national elites, and political party) on regional proliferation in your region? If so, what is the role of those actors? How and why are such actors involved in the regional proliferation in your region?

3.     LIST OF QUESTIONS FOR INTERVIEW WITH PARENT REGIONS (DISTRICT OF CIAMIS AND DISTRICT OF TANGERANG)

| **IDENTITY** |
| --- |
| NAME : <br> POSITION : |
| **INTERVIEW DESCRIPTION** |
| This interview is part of my research that investigates the determinants of regional proliferation in Indonesia. I use a sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis. <br><br> During the first phase of research, I already conducted a negative binomial regression analysis whereby the dependent variable, regional proliferation, is treated as an event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the extent of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation covers the period 2007 to 2014 in 32 provinces. |
| **REGIONAL PROLIFERATION POLICY IN INDONESIA** |

1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How do stakeholders in Parent Regions view the Central Government's design of the regional proliferation policy in Indonesia as a part of the Indonesian fiscal decentralization policy?

2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and that of SBY's administration?

**CLARIFICATION ON QUANTITATIVE RESULTS**

1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate, but ethnic fractionalization and institutions do matter for the extent of regional proliferation in Indonesia. I knew that the District of Ciamis and the District of Tangerang had been proliferated into the District of Pangandaran and the City of South Tangerang, respectively. As far as you know, what drives these new autonomous regions to proliferate from your region? Do you think that proliferation in your region is viewed as a means *per se* to boost local economic development and public services in the new autonomous region?

2. On institutional quality, how are members of Local Parliament and Local Government in the Parent Region involved in the decision-making process of granting a region to proliferate? As far as you know, is there any involvement of other actors (e.g. local elites, local businessmen, provincial elites, national elites, and political party) on regional proliferation in your region? If so, what is the role of those actors? How and why are such actors involved in the regional proliferation in your region?

4. LIST OF QUESTIONS FOR INTERVIEWS WITH NEW AUTONOMOUS REGIONS (DISTRICT OF PANGANDARAN AND CITY OF SOUTH TANGERANG)

**IDENTITY**

NAME :

| |
|---|
| POSITION : |

| |
|---|
| **INTERVIEW DESCRIPTION** |
| This interview is part of my research that investigates the determinants of regional proliferation in Indonesia. I use a sequential explanatory strategy, characterized by the collection and analysis of quantitative data in a first phase of research, followed by the collection and analysis of qualitative data in a second phase, built on the results of the quantitative analysis.

During the first phase of research, I already conducted a negative binomial regression analysis whereby the dependent variable, regional proliferation, is treated as an event. Specifically, I want to estimate whether institutional quality indicators, proxied by social capital, democracy, and crime rates, have a significant effect on the extent of regional proliferation in Indonesia. In the analysis, I also considered several motives of regional proliferation such as fiscal incentive (the share of intergovernmental transfers), income (GRDP per capita), population, area, and ethnic fractionalization. My period of observation is from 2007 to 2014 in 32 provinces. |
| **REGIONAL PROLIFERATION POLICY IN INDONESIA** |
| 1. As we already knew, regional proliferation is one of the policies to implement decentralization in Indonesia. How do stakeholders in the New Autonomous Regions view the Central Government's design of the regional proliferation policy in Indonesia as a part of the Indonesian fiscal decentralization policy?

2. Regional proliferation in my case study is regulated comprehensively according to Government Ordinance No. 78/2007, which is derived from Law No. 32/2004 on Local Government. In addition, our period of observation is from 2007 to 2014, which takes place during Soesilo Bambang Yudhoyono's (SBY) administration. Can you explain the difference between the regional proliferation policy of the current administration (Joko Widodo) and that of SBY's administration? |
| **CLARIFICATION ON QUANTITATIVE RESULTS** |
| 1. My quantitative results show that fiscal incentive and income cannot be a motive for regions in Indonesia to proliferate, but ethnic fractionalization and institutions do matter for the number of regional proliferation in Indonesia. I knew that District of Ciamis and District of Tangerang had been proliferated into District of Pangandaran and City of South Tangerang, respectively. As far as you know, what drives |

District of Pangandaran and City of South Tangerang to proliferate from District of Ciamis and District of Tangerang, respectively? Do you think that proliferation in your region is viewed as a means *per se* to boost local economic development and public services?

2. On institutional quality, how are members of Local Parliament in the Parent Region involved in the decision-making process of granting a region to proliferate? As far as you know, is there any involvement of other actors (e.g. local elites, local businessmen, provincial elites, national elites, and political party) on regional proliferation in your region? If so, what is the role of those actors? How and why are such actors involved in the regional proliferation in your region?

**A3.1 List of Developing Countries in Essay II**

| No | Country | Region | Income Group | No | Country | Region | Income Group |
|---|---|---|---|---|---|---|---|
| 1 | Afghanistan | South Asia | Low income | 29 | India | South Asia | Lower middle income |
| 2 | Albania | Europe & Central Asia | Upper middle income | 30 | Indonesia | East Asia & Pacific | Lower middle income |
| 3 | Algeria | Middle East & North Africa | Upper middle income | 31 | Jordan | Middle East & North Africa | Upper middle income |
| 4 | Angola | Sub-Saharan Africa | Lower middle income | 31 | Kazakhstan | Europe & Central Asia | Upper middle income |
| 5 | Argentina | Latin America & Caribbean | Upper middle income | 33 | Kyrgyz Republic | Europe & Central Asia | Lower middle income |
| 6 | Armenia | Europe & Central Asia | Lower middle income | 34 | Lebanon | Middle East & North Africa | Upper middle income |
| 7 | Bangladesh | South Asia | Lower middle income | 35 | Malaysia | East Asia & Pacific | Upper middle income |
| 8 | Belarus | Europe & Central Asia | Upper middle income | 36 | Morocco | Middle East & North Africa | Lower middle income |
| 9 | Bolivia | Latin America & Caribbean | Lower middle income | 37 | Nigeria | Sub-Saharan Africa | Lower middle income |
| 10 | Brazil | Latin America & Caribbean | Upper middle income | 38 | Pakistan | South Asia | Lower middle income |
| 11 | Bulgaria | Europe & Central Asia | Upper middle income | 39 | Paraguay | Latin America & Caribbean | Upper middle income |
| 12 | Cameroon | Sub-Saharan Africa | Lower middle income | 40 | Peru | Latin America & Caribbean | Upper middle income |
| 13 | China | East Asia & Pacific | Upper middle income | 41 | Philippines | East Asia & Pacific | Lower middle income |
| 14 | Colombia | Latin America & Caribbean | Upper middle income | 42 | Romania | Europe & Central Asia | Upper middle income |
| 15 | Costa Rica | Latin America & Caribbean | Upper middle income | 43 | Senegal | Sub-Saharan Africa | Low income |
| 16 | Côte d'Ivoire | Sub-Saharan Africa | Lower middle income | 44 | South Africa | Sub-Saharan Africa | Upper middle income |
| 17 | Cuba | Latin America & Caribbean | Upper middle income | 45 | Sri Lanka | South Asia | Lower middle income |
| 18 | Dominica | Latin America & Caribbean | Upper middle income | 46 | Sudan | Sub-Saharan Africa | Lower middle income |
| 19 | Dominican Rep. | Latin America & Caribbean | Upper middle income | 47 | Tajikistan | Europe & Central Asia | Lower middle income |
| 20 | Ecuador | Latin America & Caribbean | Upper middle income | 48 | Tanzania | Sub-Saharan Africa | Low income |
| 21 | Egypt, Arab Rep. | Middle East & North Africa | Lower middle income | 49 | Thailand | East Asia & Pacific | Upper middle income |
| 22 | El Salvador | Latin America & Caribbean | Lower middle income | 50 | Tunisia | Middle East & North Africa | Lower middle income |
| 23 | Ethiopia | Sub-Saharan Africa | Low income | 51 | Turkey | Europe & Central Asia | Upper middle income |
| 24 | Georgia | Europe & Central Asia | Upper middle income | 52 | Turkmenistan | Europe & Central Asia | Upper middle income |
| 25 | Ghana | Sub-Saharan Africa | Lower middle income | 53 | Ukraine | Europe & Central Asia | Lower middle income |
| 26 | Guatemala | Latin America & Caribbean | Lower middle income | 54 | Uzbekistan | Europe & Central Asia | Lower middle income |
| 27 | Guinea | Sub-Saharan Africa | Low income | 55 | Venezuela, RB | Latin America & Caribbean | Lower middle income |

| 28 | Honduras | Latin America & Caribbean | Lower middle income | 56 | Vietnam | East Asia & Pacific | Lower middle income |

## Appendix A4.1 List of Developing Countries in Essay III

| No | Country | Region | Income Group | No | Country | Region | Income Group |
|---|---|---|---|---|---|---|---|
| 1 | Afghanistan | South Asia | Low income | 27 | Kyrgyz Republic | Europe & Central Asia | Lower middle income |
| 2 | Albania | Europe & Central Asia | Upper middle income | 28 | Lebanon | Middle East & North Africa | Upper middle income |
| 3 | Algeria | Middle East & North Africa | Upper middle income | 29 | Malaysia | East Asia & Pacific | Upper middle income |
| 4 | Argentina | Latin America & Caribbean | Upper middle income | 30 | Morocco | Middle East & North Africa | Lower middle income |
| 5 | Armenia | Europe & Central Asia | Lower middle income | 31 | Nigeria | Sub-Saharan Africa | Lower middle income |
| 6 | Bangladesh | South Asia | Lower middle income | 32 | Pakistan | South Asia | Lower middle income |
| 7 | Belarus | Europe & Central Asia | Upper middle income | 33 | Peru | Latin America & Caribbean | Upper middle income |
| 8 | Bolivia | Latin America & Caribbean | Lower middle income | 34 | Philippines | East Asia & Pacific | Lower middle income |
| 9 | Brazil | Latin America & Caribbean | Upper middle income | 35 | Romania | Europe & Central Asia | Upper middle income |
| 10 | Bulgaria | Europe & Central Asia | Upper middle income | 36 | Senegal | Sub-Saharan Africa | Low income |
| 11 | Cameroon | Sub-Saharan Africa | Lower middle income | 37 | Sri Lanka | South Asia | Lower middle income |
| 12 | China | East Asia & Pacific | Upper middle income | 38 | Sudan | Sub-Saharan Africa | Lower middle income |
| 13 | Colombia | Latin America & Caribbean | Upper middle income | 39 | Tanzania | Sub-Saharan Africa | Low income |
| 14 | Costa Rica | Latin America & Caribbean | Upper middle income | 40 | Thailand | East Asia & Pacific | Upper middle income |
| 15 | Côte d'Ivoire | Sub-Saharan Africa | Lower middle income | 41 | Tunisia | Middle East & North Africa | Lower middle income |
| 16 | Dominica | Latin America & Caribbean | Upper middle income | 42 | Turkey | Europe & Central Asia | Upper middle income |
| 17 | Ecuador | Latin America & Caribbean | Upper middle income | 43 | Ukraine | Europe & Central Asia | Lower middle income |
| 18 | Egypt, Arab Rep. | Middle East & North Africa | Lower middle income | 44 | Uzbekistan | Europe & Central Asia | Lower middle income |
| 19 | El Salvador | Latin America & Caribbean | Lower middle income | 45 | Venezuela, RB | Latin America & Caribbean | Lower middle income |
| 20 | Ethiopia | Sub-Saharan Africa | Low income | 46 | Vietnam | East Asia & Pacific | Lower middle income |
| 21 | Georgia | Europe & Central Asia | Upper middle income | | | | |
| 22 | Ghana | Sub-Saharan Africa | Lower middle income | | | | |
| 23 | Honduras | Latin America & Caribbean | Lower middle income | | | | |
| 24 | India | South Asia | Lower middle income | | | | |

| 25 | Indonesia | East Asia & Pacific | Lower middle income | | | | |
|----|-----------|---------------------|---------------------|---|---|---|---|
| 26 | Kazakhstan | Europe & Central Asia | Upper middle income | | | | |

**Appendix A4.2 Summary on the Fiscal Decentralization–Growth Nexus**

| Author (year) | Sample | Period | Findings |
|---|---|---|---|
| Cross-Country Analysis: Mixed Sample Countries | | | |
| Davoodi and Zou (1998) | 19 developed countries and 27 developing countries | 1970 – 1989 | Developed countries: no significant relationship; Developing countries and world sample: negative and significant |
| Woller and Phillips (1998) | 23 less developed countries | 1974 – 1991 | No significant relationship |
| Iimi (2005) | 7 low income countries, 10 lower middle income countries, 12 upper middle income countries, and 22 high income countries | 1997 – 2001 | Positive and significant |
| Cross-Country Analysis: OECD Countries | | | |
| Thiessen (2001) | 22 high income OECD countries and 4 advanced middle income countries | 1975 – 1995 | Negative and significant; hump-shaped relationship |
| Thornton (2007) | 19 OECD countries | 1980 – 2000 | No significant relationship |
| Bodman (2008) | 18 OECD countries | 1981 – 1998 | No significant relationship |
| Rodriguez-Pose and Ezcurra (2011) | 21 OECD countries | 1990 – 2005 | Negative and significant |
| Baskaran and Feld (2013) | 23 OECD countries | 1975 – 2008 | Negative and insignificant for GFS-style measure; Negative and significant for OECD-style measure |
| Gemmell et al. (2013) | 23 OECD countries | 1972 – 2005 | Negative and significant for spending indicator; Positive and significant for revenue indicator |
| Filippetti and Sacchi (2016) | 21 OECD countries | 1970 – 2010 | Positive and significant |
| Single Country Analysis: Developed Countries | | | |
| Xie et al. (1999) | USA | 1949 – 1994 | Negative and significant |
| Akai and Sakata (2002) | USA | 1988 – 1996 | Positive and significant |
| Stansel (2005) | 314 U.S. metropolitan areas | 1960 – 1990 | Positive and significant |
| Carrion-i-Silvestre et al. (2008) | Spain | 1964 – 2000 | Negative and significant |
| Single Country Analysis: Developing Countries | | | |
| Lin and Liu (2000) | China | 1970 – 1993 | Positive and significant |
| Jin and Zou (2005) | China | 1979 – 1993 | Positive and significant |
| Faridi (2011) | Pakistan | 1972 – 2009 | Positive and significant |

| Yushkov (2015) | Russia | 2005 – 2012 | Negative and significant |

**Appendix A4.3 Summary of Methodology in Literature Review**

| Author (year) | Econometric Technique | Dependent Variable | Fiscal Decentralization Indicator |
|---|---|---|---|
| Cross-Country Analysis: Mixed Sample Countries | | | |
| Davoodi and Zou (1998) | Fixed Effect | Five-Year and Ten-Year Averages of Per Capita GDP Growth | Sub-national share of total government spending |
| Woller and Phillips (1998) | Fixed Effect | Annual, Three-Year and Five-Year Averages of Per Capita GDP Growth | Ratio of local government revenue in total government revenue, ratio of local government revenue less grant-in-aid in total government revenue, ratio of local government expenditure in total government expenditure, ratio of local government expenditure in total government expenditure less defense and social security expenditure |
| Iimi (2005) | IV | Five-Year averages of Per Capita GDP Growth | Local share of total government expenditure |
| Cross-Country Analysis: OECD Countries | | | |
| Thiessen (2001) | OLS and pooled OLS | The rate of growth of real GDP | Share of sub-national government expenditures in total government expenditures, share of local government's own source revenue and its change in total government revenue |
| Thornton (2007) | OLS | Annual averages of Per Capita GDP Growth | Ratio of own local government tax revenue and its square |
| Bodman (2008) | OLS and pooled OLS | The change in the natural log of real GDP per capita | Sub-national own tax revenue, sub-national own and shared taxes and total sub-national tax revenue as the share of general government (GG) tax revenue, and total sub-national expenditure and lending, minus loan repayments, as a percentage of consolidated general |

| | | | government expenditure, without social security and European Union payments |
|---|---|---|---|
| Rodriguez-Pose and Ezcurra (2011) | Pooled OLS | Five-Year averages of Per Capita GDP Growth | Sub-national revenue and expenditure share in total government revenue and expenditure |
| Baskaran and Feld (2013) | Fixed Effect and IV fixed effect | Growth rate of real gross domestic product (GDP) per capita | Sub-national tax revenues divided by total government tax revenue and sub-national expenditures as share of total government expenditure |
| Gemmell et al. (2013) | IV pooled OLS | Growth rate of GDP | Sub-national revenue and expenditure share in total government revenue and expenditure, ratio of own revenue (the ratio of sub-national revenue minus grants from other governments in consolidated general government revenue), autonomous own revenue (the ratio of own tax revenue plus non-tax and capital revenue in consolidated general government revenue), and autonomous shared own revenue (the ratio of own tax revenue plus shared tax revenue and non-tax and capital revenue in consolidated general government revenue) |
| Filippetti and Sacchi (2016) | System GMM | Log difference in real per capita GDP over five-year period | Share of own local tax revenues in total general government tax revenues, share of property taxes collected at the local level in total general government tax revenues, share of income taxes collected at the local level in total general government tax revenues |
| Single Country Analysis: Developed Countries | | | |
| Xie et al. (1999) | OLS | Per capita GDP growth rate | Average tax rate and shares in government spending at different levels |
| Akai and Sakata | OLS | Average annual | Ratio of local government |

| | | | |
|---|---|---|---|
| (2002) | | growth rate of per capita gross state product | revenue to combined state and local government revenue, ratio of local government expenditure in combined state and local government expenditure, local government's own revenue share in its total government revenue, and mean of all revenue and expenditure indicators mentioned above |
| Stansel (2005) | OLS | Growth in log of population and growth in log of real per capita money income | Number of general-purpose governments (county and sub-county) per 100,000 residents and number of public school systems per 100,000 residents |
| Carrion-i-Silvestre et al. (2008) | Pooled OLS, IV Pooled OLS, GMM | Annual variation in logarithm of either gross domestic product (GDP) per capita or gross value added (GVA) per capita | Share of local government revenue in the sum of total government revenues, share of local government expenditures in the sum of total government expenditures, net intergovernmental transfers, share of local health investment in the sum of total government health investments |
| Single Country Analysis: Developing Countries | | | |
| Lin and Liu (2000) | Fixed Effect | Growth rate of real per capita GDP | Marginal retention rate (changes in the rate at which revenue increments are retained by provincial governments) of locally collected budgetary revenue and average retention rate of locally collected budgetary revenue |
| Jin and Zou (2005) | Fixed Effect | Real GDP growth rate | Share of local government revenue in the sum of total government revenues, share of local government expenditures in the sum of total government expenditures, net intergovernmental transfers |
| Faridi (2011) | OLS | GDP | Ratio of sub – national government expenditures |

| | | | and revenue in total government expenditure and revenue |
|---|---|---|---|
| Yushkov (2015) | Fixed effect | Growth rate of Gross Regional Product (GRP) | Ratio of sub–national government expenditures and revenue in total government expenditure and revenue, share of total intergovernmental transfer in total revenue, share of own tax revenue in total revenue |

**Appendix A4.4 Summary of Control Variables in Literature Review**

| Author (year) | Control Variables |
|---|---|
| Cross-Country Analysis: Mixed Sample Countries | |
| Davoodi and Zou (1998) | Average growth rate of population, initial level of human capital, initial per capita GDP, average real investment share of GDP, and average tax share of GDP |
| Woller and Phillips (1998) | Trade openness, sum of total foreign bank assets and liabilities divided by GDP, inflation rate based on GDP deflator, variance of inflation, index of political repression, index of civil liberty, value of real exchange rate, log difference of domestic credit |
| Iimi (2005) | Average growth rate of population, initial level of human capital, initial GDP, average real investment share of GDP, political freedom, dummy for income countries group and average tax share of GDP |
| Cross-Country Analysis: OECD Countries | |
| Thiessen (2001) | Annual change of unemployment rate, annual fiscal balance as share of GDP, annual inflation rate, growth rate of gross fixed capital formation deflated by producer price index, annual rate of labor force growth, annual rate of population growth, average annual gross investment share of GDP, annual secondary school enrolment ratio, annual total factor productivity, and several dummy variables |
| Thornton (2007) | Average investment rate, initial level of human capital, initial level of per capita GDP, dummy variable for unitary government structures, and average population growth rate |
| Bodman (2008) | Average years of schooling, general government final consumption expenditure as percentage of GDP, vertical fiscal imbalance, standard deviation of domestic credit growth, and measure of political freedom |
| Rodriguez-Pose and Ezcurra (2011) | Initial GDP per capita, level of physical and human capital, measured respectively as net capital stock per |

| | unit of GDP and average years of schooling of total population aged 15 years and over, average population growth rate, degree of trade openness, share of total public expenditure in national GDP |
|---|---|
| Baskaran and Feld (2013) | Lag of GDP per capita, investment share of GDP, percentage of secondary school enrollment, population growth rate, tax to GDP ratio, inflation rate, trade openness, annual labor productivity growth rate, dummy for country |
| Gemmell et al. (2013) | Investment rate, employment growth, and ratio of general government revenue to GDP |
| Filippetti and Sacchi (2016) | Population growth, urbanization, unemployment rate, log of the tertiary school enrolment rate, degree of openness, gross fixed capital formation growth, logarithm of real per capita GDP at the beginning of that period, national political party in office, circumstance of being a federal country, type of local government election, public sector's fragmentation to control for number of participating sub-national governments, degree of regional authority |
| Single Country Analysis: Developed Countries | |
| Xie *et al.* (1999) | Size of labour force, investment rate, measure of external shock (price index of energy products), two measures of openness of economy (ratio of foreign trade volume over GDP and average tariff rate), inflation rate, gini coefficient |
| Akai and Sakata (2002) | Percentage of high school graduates in total population aged 18–24 years in 1992, average annual growth rate of state population, share of seats in state legislature held by Democrats in 1992, gini coefficient, state's share of total US patents issued in 1992, trade openness, dummy for state's location in the southern region |
| Stansel (2005) | 1950–1960 growth in log of population, log of 1960 population, 1959 real per capita money income, 1960 unemployment rate, 1960 manufacturing sector share of total employment, 1960 percentage of population (age 25 and older) with 16 or more years of school, forty-eight state dummy variables |
| Carrion-i-Silvestre et al. (2008) | Annual change in natural logarithm of labor force, change in natural logarithm of human capita, change in natural logarithm of private and public capital stock |
| Single Country Analysis: Developing Countries | |
| Lin and Liu (2000) | Percentage of production teams in rural areas that adopted HRS, moving average of real per capita GDP in preceding 3 years, percentage of rural population, total population, ratio of state's real procurement price index for farm products to real price index of manufacture goods in rural area, Share of Non-SOEs' |

| | output in total industrial output, growth rate of per capita fixed asset investment |
|---|---|
| Jin and Zou (2005) | Investment rate, labor force growth rate, level of openness and lagged rate of provincial inflation |
| Faridi (2011) | Trade openness, annual inflation rate, literacy rate, total fixed investment, one-lagged period of GDP |
| Yushkov (2015) | Trade openness, population growth rate, investment rate, natural logarithm of three-year lagged values of GRP, inflation based on CPI, share of total natural resource production, proxy of human capital |

## A5.1 List of Developing Countries in Essay IV

| No | Country | Region | Income Group | No | Country | Region | Income Group |
|---|---|---|---|---|---|---|---|
| 1 | Afghanistan | South Asia | Low income | 29 | India | South Asia | Lower middle income |
| 2 | Albania | Europe & Central Asia | Upper middle income | 30 | Indonesia | East Asia & Pacific | Lower middle income |
| 3 | Algeria | Middle East & North Africa | Upper middle income | 31 | Jordan | Middle East & North Africa | Upper middle income |
| 4 | Angola | Sub-Saharan Africa | Lower middle income | 31 | Kazakhstan | Europe & Central Asia | Upper middle income |
| 5 | Argentina | Latin America & Caribbean | Upper middle income | 33 | Kyrgyz Republic | Europe & Central Asia | Lower middle income |
| 6 | Armenia | Europe & Central Asia | Lower middle income | 34 | Lebanon | Middle East & North Africa | Upper middle income |
| 7 | Bangladesh | South Asia | Lower middle income | 35 | Malaysia | East Asia & Pacific | Upper middle income |
| 8 | Belarus | Europe & Central Asia | Upper middle income | 36 | Morocco | Middle East & North Africa | Lower middle income |
| 9 | Bolivia | Latin America & Caribbean | Lower middle income | 37 | Nigeria | Sub-Saharan Africa | Lower middle income |
| 10 | Brazil | Latin America & Caribbean | Upper middle income | 38 | Pakistan | South Asia | Lower middle income |
| 11 | Bulgaria | Europe & Central Asia | Upper middle income | 39 | Paraguay | Latin America & Caribbean | Upper middle income |
| 12 | Cameroon | Sub-Saharan Africa | Lower middle income | 40 | Peru | Latin America & Caribbean | Upper middle income |
| 13 | China | East Asia & Pacific | Upper middle income | 41 | Philippines | East Asia & Pacific | Lower middle income |
| 14 | Colombia | Latin America & Caribbean | Upper middle income | 42 | Romania | Europe & Central Asia | Upper middle income |
| 15 | Costa Rica | Latin America & Caribbean | Upper middle income | 43 | Senegal | Sub-Saharan Africa | Low income |
| 16 | Côte d'Ivoire | Sub-Saharan Africa | Lower middle income | 44 | South Africa | Sub-Saharan Africa | Upper middle income |
| 17 | Cuba | Latin America & Caribbean | Upper middle income | 45 | Sri Lanka | South Asia | Lower middle income |
| 18 | Dominica | Latin America & Caribbean | Upper middle income | 46 | Sudan | Sub-Saharan Africa | Lower middle income |
| 19 | Dominican Rep. | Latin America & Caribbean | Upper middle income | 47 | Tajikistan | Europe & Central Asia | Lower middle income |
| 20 | Ecuador | Latin America & Caribbean | Upper middle income | 48 | Tanzania | Sub-Saharan Africa | Low income |
| 21 | Egypt, Arab Rep. | Middle East & North Africa | Lower middle income | 49 | Thailand | East Asia & Pacific | Upper middle income |
| 22 | El Salvador | Latin America & Caribbean | Lower middle income | 50 | Tunisia | Middle East & North Africa | Lower middle income |
| 23 | Ethiopia | Sub-Saharan Africa | Low income | 51 | Turkey | Europe & Central Asia | Upper middle income |
| 24 | Georgia | Europe & Central Asia | Upper middle income | 52 | Turkmenistan | Europe & Central Asia | Upper middle income |
| 25 | Ghana | Sub-Saharan Africa | Lower middle income | 53 | Ukraine | Europe & Central Asia | Lower middle income |
| 26 | Guatemala | Latin America & Caribbean | Lower middle income | 54 | Uzbekistan | Europe & Central Asia | Lower middle income |
| 27 | Guinea | Sub-Saharan Africa | Low income | 55 | Venezuela, RB | Latin America & Caribbean | Lower middle income |

| 28 | Honduras | Latin America & Caribbean | Lower middle income | 56 | Vietnam | East Asia & Pacific | Lower middle income |
|---|---|---|---|---|---|---|---|

## A5.2 Full Regression on *Exclude*, Fiscal Decentralization, Institutional Quality, and Military Expenditure

| Exp. variables | (1) RE | (2) FE | (3) System GMM | (4) RE | (5) FE | (6) System GMM | (7) RE | (8) FE | (9) System GMM | (10) RE | (11) FE | (12) System GMM | (13) RE | (14) FE | (15) System GMM | (16) RE | (17) FE | (18) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Dep. Variable: Share of excluded population to powerful ethno-politically group (log)** | | | | | | | | | | | |
| | | | | | | **A. Variable of Interest: Revenue Share, Institution, and Military Spending** | | | | | | | | | | | | |
| Rev | -0.008 (0.04) | 0.13 (0.10) | 0.02 (0.05) | 0.04 (0.04) | 0.15* (0.09) | 0.02 (0.03) | 0.03 (0.03) | 0.10* (0.05) | 0.009 (0.06) | -0.04 (0.06) | -0.09 (0.07) | 0.01 (0.07) | -0.08 (0.08) | -0.17** (0.07) | 0.05 (0.10) | -0.05 (0.05) | -0.05 (0.05) | 0.02 (0.04) |
| Dem (polity) | -0.005 (0.12) | 0.35 (0.30) | -0.08 (0.12) | | | | | | | | | | | | | | | |
| Elecdem | | | | 2.26 (2.24) | 7.07** (3.54) | -1.37 (2.23) | | | | | | | | | | | | |
| Pardem | | | | | | | 3.51 (3.11) | 9.47** (3.99) | -0.89 (1.30) | | | | | | | | | |
| Cor | | | | | | | | | | 0.29 (0.37) | -0.12 (0.32) | -0.05 (0.35) | | | | | | |
| Lo | | | | | | | | | | | | | -0.27 (0.29) | -0.72** (0.32) | 0.20 (0.33) | | | |
| Bq | | | | | | | | | | | | | | | | 0.19 (0.40) | 0.20 (0.29) | -0.02 (0.27) |
| Milex | -0.11 (0.18) | 0.20 (0.24) | 0.13 (0.25) | 0.06 (0.17) | 0.35 (0.28) | 0.13 (0.31) | 0.09 (0.17) | 0.30 (0.22) | 0.02 (0.59) | -0.18 (0.24) | -0.30 (0.27) | 0.007 (0.25) | -0.12 (0.21) | -0.37* (0.20) | 0.03 (0.24) | -0.16 (0.23) | -0.27 (0.26) | 0.08 (0.17) |
| Rev x Dem | -0.003 (0.006) | -0.02 (0.01) | 0.003 (0.005) | | | | | | | | | | | | | | | |
| Rev x Elecdem | | | | -0.11 (0.09) | -0.27** (0.13) | 0.04 (0.07) | | | | | | | | | | | | |
| Rev x Pardem | | | | | | | -0.16 (0.11) | -0.34** (0.14) | 0.04 (0.15) | | | | | | | | | |
| Rev x Cor | | | | | | | | | | 0.002 (0.02) | 0.01 (0.02) | -0.002 (0.01) | | | | | | |
| Rev x Lo | | | | | | | | | | | | | 0.01 (0.01) | 0.03** (0.01) | -0.01 (0.02) | | | |
| Rev x Bq | | | | | | | | | | | | | | | | 0.007 (0.02) | -0.006 (0.01) | $6\,e^{-5}$ (0.007) |
| Rev x Milex | 0.008 (0.008) | -0.008 (0.01) | -0.007 (0.01) | $7\,e^{-4}$ (0.006) | -0.02 (0.01) | -0.008 (0.01) | $4\,e^{-4}$ (0.006) | -0.01 (0.009) | -0.003 (0.01) | 0.01 (0.01) | 0.02 (0.01) | -0.002 (0.01) | 0.01 (0.01) | 0.02** (0.006) | -0.004 (0.01) | 0.01 (0.01) | 0.02 (0.01) | -0.006 (0.01) |
| Observation | 86 | 86 | 44 | 87 | 87 | 45 | 87 | 87 | 45 | 79 | 79 | 41 | 79 | 79 | 41 | 79 | 79 | 41 |
| Groups | 33 | 33 | 25 | 33 | 33 | 25 | 33 | 33 | 25 | 29 | 29 | 23 | 29 | 29 | 23 | 29 | 29 | 23 |

| Exp. variables | (19) RE | (20) FE | (21) System GMM | (22) RE | (23) FE | (24) System GMM | (25) RE | (26) FE | (27) System GMM | (28) RE | (29) FE | (30) System GMM | (31) RE | (32) FE | (33) System GMM | (34) RE | (35) FE | (36) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Dep. Variable: Share of excluded population to powerful ethno-politically group (log)** | | | | | | | | | | | |
| | | | | | | **B. Variable of Interest: Expenditure Share, Institution, and Military Spending** | | | | | | | | | | | | |
| Exp | -0.03 | 0.04 | $9\,e^{-4}$ | -0.01 | 0.02 | 0.008 | -0.005 | 0.03 | 0.01 | -0.03 | -0.08 | 0.03 | -0.04 | -0.12** | 0.08 | -0.06 | -0.07 | 0.04 |

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (0.03) | (0.05) | (0.04) | (0.03) | (0.04) | (0.03) | (0.03) | (0.04) | (0.03) | (0.05) | (0.06) | (0.05) | (0.05) | (0.06) | (0.07) | (0.05) | (0.05) | (0.06) |
| Dem (polity) | -0.09 (0.08) | 0.07 (0.12) | -0.03 (0.12) | | | | | | | | | | | | | | | |
| Elecdem | | | | -0.41 (0.90) | 1.90 (2.13) | -0.45 (0.85) | | | | | | | | | | | | |
| Pardem | | | | | | | -0.19 (1.21) | 3.42 (3.60) | -0.35 (1.31) | | | | | | | | | |
| Cor | | | | | | | | | | 0.20 (0.37) | -0.32 (0.26) | 0.04 (0.24) | | | | | | |
| Lo | | | | | | | | | | | | | -0.10 (0.18) | -0.45 (0.28) | 0.21 (0.22) | | | |
| Bq | | | | | | | | | | | | | | | | -0.08 (0.35) | -0.24 (0.29) | 0.11 (0.27) |
| Milex | -0.13 (0.17) | -0.04 (0.11) | 0.01 (0.14) | -0.06 (0.17) | -0.03 (0.13) | 0.03 (0.11) | -0.03 (0.17) | 0.006 (0.11) | 0.03 (0.11) | -0.13 (0.22) | -0.25 (0.24) | 0.04 (0.14) | -0.02 (0.17) | -0.24 (0.17) | 0.17 (0.40) | -0.14 (0.23) | -0.32 (0.27) | 0.07 (0.14) |
| Exp x Dem | 0.001 (0.003) | -0.008 (0.007) | 0.002 (0.004) | | | | | | | | | | | | | | | |
| Exp x Elecdem | | | | -0.002 (0.04) | -0.08 (0.08) | 0.02 (0.04) | | | | | | | | | | | | |
| Exp x Pardem | | | | | | | -0.02 (0.05) | -0.13 (0.13) | 0.02 (0.06) | | | | | | | | | |
| Exp x Cor | | | | | | | | | | 0.006 (0.02) | 0.02 (0.02) | -0.004 (0.01) | | | | | | |
| Exp x Lo | | | | | | | | | | | | | 0.005 (0.01) | 0.02* (0.01) | -0.01 (0.02) | | | |
| Exp x Bq | | | | | | | | | | | | | | | | 0.02 (0.02) | 0.02 (0.02) | -0.008 (0.01) |
| Exp x Milex | 0.01 (0.009) | 0.006 (0.007) | -0.002 (0.008) | 0.007 (0.009) | 0.004 (0.007) | -0.004 (0.006) | 0.006 (0.009) | 0.004 (0.006) | -0.004 (0.006) | 0.01 (0.009) | 0.02 (0.009) | -0.004 (0.009) | 0.01 (0.009) | 0.01** (0.006) | -0.01 (0.01) | 0.01 (0.009) | 0.02* (0.009) | -0.01 (0.01) |
| Observation | 86 | 86 | 44 | 87 | 87 | 45 | 87 | 87 | 45 | 79 | 79 | 41 | 79 | 79 | 41 | 79 | 79 | 41 |
| Groups | 33 | 33 | 25 | 33 | 33 | 25 | 33 | 33 | 25 | 29 | 29 | 23 | 29 | 29 | 23 | 29 | 29 | 23 |

**Dep. Variable: Share of excluded population to powerful ethno-politically group (log)**

| Exp. variables | (37) | (38) | (39) | (40) | (41) | (42) | (43) | (44) | (45) | (46) | (47) | (48) | (49) | (50) | (51) | (52) | (53) | (54) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |

**C. Variable of Interest: Fiscal Autonomy, Institution, and Military Spending**

| | (37) | (38) | (39) | (40) | (41) | (42) | (43) | (44) | (45) | (46) | (47) | (48) | (49) | (50) | (51) | (52) | (53) | (54) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fisauto | 0.74 (0.47) | 0.89* (0.49) | 0.50 (0.52) | 0.13 (0.32) | 0.32 (0.35) | -0.01 (0.89) | 0.11 (0.29) | 0.30 (0.30) | -0.01 (0.76) | -0.02 (0.29) | 0.92* (0.40) | -0.05 (0.19) | 0.02 (0.14) | 0.30 (0.18) | 0.001 (1.06) | -0.04 (0.23) | 0.16 (0.24) | -2.15 (3.14) |
| Dem (polity) | 0.04 (0.13) | -0.02 (0.14) | 0.008 (0.13) | | | | | | | | | | | | | | | |
| Elecdem | | | | -0.40 (1.42) | -0.98 (1.41) | 0.48 (2.16) | | | | | | | | | | | | |
| Pardem | | | | | | | -0.91 (1.82) | -1.65 (1.79) | 0.04 (3.12) | | | | | | | | | |
| Cor | | | | | | | | | | -0.003 (0.36) | 0.33 (0.37) | -0.16 (0.36) | | | | | | |
| Lo | | | | | | | | | | | | | -0.18* (0.10) | -0.18 (0.12) | -0.12 (0.97) | | | |
| Bq | | | | | | | | | | | | | | | | -0.10 | -0.16 | 0.63 |

| Exp. variables | (55) RE | (56) FE | (57) System GMM | (58) RE | (59) FE | (60) System GMM | (61) RE | (62) FE | (63) System GMM | (64) RE | (65) FE | (66) System GMM | (67) RE | (68) FE | (69) System GMM | (70) RE | (71) FE | (72) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | (0.13) | (0.15) | (1.38) |
| Milex | 0.02 (0.06) | 0.06 (0.07) | 0.04 (0.27) | 0.02 (0.06) | 0.06 (0.08) | -0.09 (0.30) | 0.01 (0.06) | 0.06 (0.08) | -0.12 (0.61) | 0.14 (0.22) | 0.15 (0.12) | -0.10 (0.24) | 0.01 (0.05) | 0.09 (0.07) | -0.18 (0.91) | 0.009 (0.05) | 0.07 (0.07) | -0.62 (0.95) |
| Fisauto x Dem | -0.07 (0.06) | -0.07 (0.05) | -0.08 (0.10) | | | | | | | | | | | | | | | |
| Fisauto x Elecdem | | | | 0.03 (0.46) | 0.09 (0.44) | -0.49 (0.61) | | | | | | | | | | | | |
| Fisauto x Pardem | | | | | | | 0.12 (0.62) | 0.22 (0.56) | -0.31 (1.07) | | | | | | | | | |
| Fisauto x Cor | | | | | | | | | | 0.006 (0.009) | -0.002 (0.008) | 0.003 (0.006) | | | | | | |
| Fisauto x Lo | | | | | | | | | | | | | 0.03 (0.03) | 0.01 (0.04) | -0.25 (0.40) | | | |
| Fisauto x Bq | | | | | | | | | | | | | | | | 0.06 (0.06) | 0.07 (0.06) | 0.41 (0.98) |
| Fisauto x Milex | 0.02 (0.05) | 0.02 (0.04) | $7 e^{-4}$ (0.17) | 0.04 (0.06) | 0.03 (0.05) | 0.12 (0.28) | 0.04 (0.06) | 0.03 (0.05) | 0.06 (0.27) | 0.04 (0.09) | -0.07 (0.08) | 0.01 (0.08) | 0.05 (0.06) | 0.03 (0.07) | 0.31 (0.35) | 0.05 (0.06) | 0.03 (0.05) | 0.56 (0.67) |
| Observation | 107 | 107 | 81 | 107 | 107 | 81 | 107 | 107 | 81 | 56 | 56 | 31 | 107 | 107 | 81 | 107 | 107 | 81 |
| Groups | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 20 | 20 | 16 | 24 | 24 | 24 | 24 | 24 | 24 |
| **Dep. Variable: Share of excluded population to powerful ethno-politically group (log)** | | | | | | | | | | | | | | | | | | |
| | (55) | (56) | (57) | (58) | (59) | (60) | (61) | (62) | (63) | (64) | (65) | (66) | (67) | (68) | (69) | (70) | (71) | (72) |
| Exp. variables | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |
| **D. Variable of Interest: Fiscal Control, Institution, and Military Spending** | | | | | | | | | | | | | | | | | | |
| Fiscon | -7.59 (10.89) | -31.08* (18.27) | -13.11 (18.56) | 6.68 (11.17) | 4.22 (20.94) | 7.92 (38.00) | 4.47 (9.17) | 2.68 (17.95) | -2.27 (22.66) | -9.14 (6.99) | -12.73 (9.72) | 6.30 (15.15) | -7.32 (5.44) | -6.39 (6.37) | -10.90 (13.32) | -21.65 (16.21) | -19.12 (15.43) | -7.65 (16.40) |
| Dem (polity) | 1.37 (1.00) | 0.28 (0.98) | -1.08 (1.35) | | | | | | | | | | | | | | | |
| Elecdem | | | | 5.27 (10.84) | 4.83 (12.60) | -7.99 (21.15) | | | | | | | | | | | | |
| Pardem | | | | | | | 1.05 (13.46) | -0.13 (15.33) | -13.79 (26.44) | | | | | | | | | |
| Cor | | | | | | | | | | -1.81 (1.90) | -2.16 (1.55) | 5.79 (8.61) | | | | | | |
| Lo | | | | | | | | | | | | | -1.92 (1.25) | -2.08 (1.29) | -6.70 (5.71) | | | |
| Bq | | | | | | | | | | | | | | | | -0.30 (1.90) | -0.26 (2.15) | 3.45 (6.89) |
| Milex | 1.10 (1.18) | 1.47 (1.17) | -1.88 (3.09) | 0.93 (1.09) | 1.32 (1.13) | -2.98 (2.70) | 0.82 (1.05) | 1.23 (1.12) | -3.13 (2.96) | 1.87 (1.33) | 2.57* (1.48) | -4.59 (6.83) | 1.19 (1.30) | 1.86 (1.32) | 7.31 (9.54) | 0.83 (1.08) | 1.31 (1.13) | -1.19 (3.03) |
| Fiscon x Dem | 0.10 (1.45) | 2.53 (2.05) | 0.49 (12.58) | | | | | | | | | | | | | | | |
| Fiscon x Elecdem | | | | -18.12 (17.23) | -16.63 (25.93) | -18.78 (40.84) | | | | | | | | | | | | |
| Fiscon x Pardem | | | | | | | -23.23 (21.64) | -23.91 (33.27) | -11.18 (36.54) | | | | | | | | | |
| Fiscon x Cor | | | | | | | | | | 1.71 (1.92) | 4.27* (2.35) | -7.34 (7.66) | | | | | | |
| Fiscon x Lo | | | | | | | | | | | | | 0.23 | -1.95 | 5.93 | | | |

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | (0.78) | (1.18) | (5.37) | | | |
| Fiscon x Bq | | | | | | | | | | | | | | | | 4.15 (3.78) | 3.06 (3.08) | -1.30 (15.03) |
| Fiscon x Milex | -2.68 (2.74) | -5.67 (4.92) | 3.01 (14.57) | -3.98 (3.34) | -7.69 (6.00) | -0.56 (7.79) | -4.01 (3.29) | -7.65 (5.96) | 0.76 (6.46) | -3.94 (3.57) | -10.90 (7.02) | 5.52 (5.40) | -2.73 (2.39) | -7.16 (4.65) | -7.93 (9.93) | -0.24 (2.34) | -4.86 (5.16) | 4.03 (7.65) |
| Observation | 116 | 116 | 90 | 116 | 116 | 90 | 116 | 116 | 90 | 110 | 110 | 86 | 110 | 110 | 86 | 110 | 110 | 86 |
| Groups | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |

Notes: The GMM models pass autocorrelation and validity tests. Number of parentheses are robust standard error. Asterisk as follows: *** = significant at 1 percent level; ** = significant at 5 percent level; * = significant at 10 percent level. Other explanatory variables in each equation as follows: (1) Natural logarithm of GDP per capita; (2) Population growth rate; (3) Openness in Trade. In case of GMM, first lag of dependent variable is an explanatory variable. Full results available upon request.

## A5.3 Full Regression on *Disc*, Fiscal Decentralization, Institutional Quality, and Military Expenditure

| Exp. variables | Dep. Variable: Percentage of discriminated in population | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |
| | A. Variable of Interest: Revenue Share, Institution, and Military Spending | | | | | | | | | | | | | | | | | |
| Rev | -0.14 (0.26) | -0.43 (0.30) | 0.008 (0.45) | -0.08 (0.48) | -0.74 (0.74) | -0.19 (0.33) | -0.001 (0.41) | -0.50 (0.47) | -0.08 (0.31) | 0.97 (0.62) | 1.64** (0.69) | 0.59 (0.46) | 2.15 (1.86) | 2.46 (1.67) | 1.62 (1.32) | 1.09 (0.76) | 1.64*** (0.49) | 1.49 (2.06) |
| Dem (polity) | -4.40*** (0.99) | -5.24*** (0.50) | -1.51 (1.98) | | | | | | | | | | | | | | | |
| Elecdem | | | | -72.9** (37.74) | -107.9** (41.98) | -23.72 (28.39) | | | | | | | | | | | | |
| Pardem | | | | | | | -119.75** (57.61) | -182*** (43.02) | -60.04 (76) | | | | | | | | | |
| Cor | | | | | | | | | | 4.83 (3.42) | -0.32 (2.58) | 7.72 (5.38) | | | | | | |
| Lo | | | | | | | | | | | | | 3.48 (6.75) | 2.73 (7.02) | 1.18 (8.15) | | | |
| Bq | | | | | | | | | | | | | | | | 5.86 (6.40) | 11.75*** (3.18) | 24.22 (39.47) |
| Milex | 4.25* (2.44) | 2.87* (1.64) | 6.10 (7.90) | 6.23* (3.36) | 3.99 (4.23) | 4.89 (13.09 | 6.32* (3.46) | 4.76 (3.45) | 8.21 (7.57) | 8.76* (4.94) | 5.83 (4.98) | 7.07* (3.89) | 11.37** (4.68) | 8.63 (6) | 12.33 (12.54) | 9.82** (4.95) | 6.07 (3.81) | 10 (7.27) |
| Rev x Dem | 0.08 (0.06) | 0.12*** (0.04) | 0.04 (0.07) | | | | | | | | | | | | | | | |
| Rev x Elecdem | | | | 1.49*** (1.05) | 2.53* (1.30) | 0.76 (2.65) | | | | | | | | | | | | |
| Rev x Pardem | | | | | | | 2.47 (1.59) | 4.34*** (1.37) | 1.85 (2.46) | | | | | | | | | |
| Rev x Cor | | | | | | | | | | -0.13* (0.08) | -0.16* (0.08) | -0.15 (0.22) | | | | | | |
| Rev x Lo | | | | | | | | | | | | | -0.28 (0.35) | -0.18 (0.26) | -0.24 (0.18) | | | |
| Rev x Bq | | | | | | | | | | | | | | | | -0.27 (0.18) | -0.55** (0.22) | -0.69 (0.90) |
| Rev x Milex | -0.10 | -0.08 | -0.15 | -0.17* | -0.12 | -0.09 | -0.18* | -0.16* | -0.18 | -0.21 | -0.26 | -0.14* | -0.34** | -0.44** | -0.34 | -0.24 | -0.30** | -0.20 |

| Exp. variables | (19) RE | (20) FE | (21) System GMM | (22) RE | (23) FE | (24) System GMM | (25) RE | (26) FE | (27) System GMM | (28) RE | (29) FE | (30) System GMM | (31) RE | (32) FE | (33) System GMM | (34) RE | (35) FE | (36) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (0.07) | (0.06) | (0.19) | (0.10) | (0.10) | (0.35) | (0.10) | (0.09) | (0.24) | (0.14) | (0.17) | (0.22) | (0.17) | (0.20) | (0.33) | (0.15) | (0.13) | (0.16) |
| Observation | 42 | 42 | 24 | 42 | 42 | 24 | 42 | 42 | 24 | 40 | 40 | 23 | 40 | 40 | 23 | 40 | 40 | 23 |
| Groups | 17 | 17 | 13 | 17 | 17 | 13 | 17 | 17 | 13 | 16 | 16 | 12 | 16 | 16 | 12 | 16 | 16 | 12 |

**Dep. Variable: Percentage of discriminated in population**

**B. Variable of Interest: Expenditure Share, Institution, and Military Spending**

| Exp. variables | (19) RE | (20) FE | (21) System GMM | (22) RE | (23) FE | (24) System GMM | (25) RE | (26) FE | (27) System GMM | (28) RE | (29) FE | (30) System GMM | (31) RE | (32) FE | (33) System GMM | (34) RE | (35) FE | (36) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exp | -0.25 (0.27) | -0.39 (0.31) | 0.17 (1.01) | -0.28 (0.51) | -1.04 (0.82) | -2.65 (2.67) | -0.19 (0.45) | -0.58 (0.51) | 0.42 (1.67) | 0.85 (0.65) | 1.52* (0.76) | 0.60 (0.48) | 1.07 (1.64) | 1.64 (2.14) | 0.69 (1.35) | 0.93 (0.76) | 1.53*** (0.41) | 1.37 (1.67) |
| Dem (polity) | -4.26*** (1.13) | -4.97*** (0.46) | -0.47 (4.74) | | | | | | | | | | | | | | | |
| Elecdem | | | | -72.92* (40.75) | -115.7*** (40.61) | -151.56 (139.36) | | | | | | | | | | | | |
| Pardem | | | | | | | -117.4* (66) | -179*** (40.60) | 33.20 (232) | | | | | | | | | |
| Cor | | | | | | | | | | 5.09 (3.60) | -0.65 (3.01) | 6.76 (6.05) | | | | | | |
| Lo | | | | | | | | | | | | | 0.33 (5.87) | -0.90 (7.46) | 0.05 (6.87) | | | |
| Bq | | | | | | | | | | | | | | | | 9.26 (7.60) | 15.31*** (2.76) | 20.70 (34.82) |
| Milex | 2.71 (2.53) | 1.22 (1.37) | 6.31 (12.10) | 3.92 (3.69) | -0.40 (3.98) | -4.38 (4.42) | 3.76 (3.82) | 0.39 (2.94) | 8.37 (13) | 7.37 (4.45) | 5.00 (4.50) | 7.35 (4.82) | 9.07** (4.04) | 5.68 (5.92) | 7.97 (12.86) | 7.87* (4.38) | 5.38 (3.46) | 9.30 (7.31) |
| Exp x Dem | 0.07 (0.10) | 0.13** (0.05) | 0.005 (0.19) | | | | | | | | | | | | | | | |
| Exp x Elecdem | | | | 1.61 (1.46) | 3.02** (1.34) | 8.33 (8.92) | | | | | | | | | | | | |
| Exp x Pardem | | | | | | | 2.52 (2.26) | 4.49*** (1.27) | -1.82 (10.95) | | | | | | | | | |
| Exp x Cor | | | | | | | | | | -0.15** (0.08) | -0.13 (0.09) | -0.12 (0.19) | | | | | | |
| Exp x Lo | | | | | | | | | | | | | -0.04 (0.28) | 0.04 (0.36) | -0.07 (0.15) | | | |
| Exp x Bq | | | | | | | | | | | | | | | | -0.45* (0.26) | -0.65*** (0.15) | -0.64 (0.79) |
| Exp x Milex | -0.05 (0.07) | -0.08 (0.08) | -0.14 (0.23) | -0.10 (0.09) | -0.04 (0.12) | -0.08 (0.08) | -0.11 (0.09) | -0.11 (0.10) | -0.14 (0.18) | -0.17 (0.12) | -0.27 (0.19) | -0.16 (0.10) | -0.26* (0.16) | -0.40 (0.24) | -0.21 (0.37) | -0.16 (0.14) | -0.28** (0.11) | -0.19 (0.15) |
| Observation | 42 | 42 | 24 | 42 | 42 | 24 | 42 | 42 | 24 | 40 | 40 | 23 | 40 | 40 | 23 | 40 | 40 | 23 |
| Groups | 17 | 17 | 13 | 17 | 17 | 13 | 17 | 17 | 13 | 16 | 16 | 12 | 16 | 16 | 12 | 16 | 16 | 12 |

**Dep. Variable: Percentage of discriminated in population**

**C. Variable of Interest: Fiscal Autonomy, Institution, and Military Spending**

| Exp. variables | (37) RE | (38) FE | (39) System GMM | (40) RE | (41) FE | (42) System GMM | (43) RE | (44) FE | (45) System GMM | (46) RE | (47) FE | (48) System GMM | (49) RE | (50) FE | (51) System GMM | (52) RE | (53) FE | (54) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fisauto | -0.26*** (0.06) | -0.27*** (0.04) | 0.18 (0.94) | 0.08 (0.20) | 0.06 (0.09) | 0.05 (0.23) | 0.15 (0.20) | 0.12 (0.08) | 0.11 (0.22) | 8.41 (8.16) | 0.80 (0.04) | 0.06 (0.04) | -16.63* (9.38) | -0.11 (0.09) | 0.81 (0.89) | -10.94** (5.77) | -0.11*** (0.02) | 1.22* (0.70) |
| Dem (polity) | -0.04*** (0.02) | -0.02 (0.03) | -0.009 (0.23) | | | | | | | | | | | | | | | |

| Exp. variables | (55) RE | (56) FE | (57) System GMM | (58) RE | (59) FE | (60) System GMM | (61) RE | (62) FE | (63) System GMM | (64) RE | (65) FE | (66) System GMM | (67) RE | (68) FE | (69) System GMM | (70) RE | (71) FE | (72) System GMM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Elecdem | | | | -1.16* (0.64) | -0.64 (0.59) | 0.53 (1.24) | | | | | | | | | | | | |
| Pardem | | | | | | | -1.85 (1.23) | -1.52* (0.78) | 0.48 (1.04) | | | | | | | | | |
| Cor | | | | | | | | | | 8.56** (4.43) | 0.08 (0.01) | 0.78 (11.77) | | | | | | |
| Lo | | | | | | | | | | | | | -7.36 (6.17) | 0.002 (0.06) | -0.08 (0.62) | | | |
| Bq | | | | | | | | | | | | | | | | -6.21 (4.97) | 0.007 (0.02) | 1.89 (1.28) |
| Milex | 0.04 (0.05) | 0.04 (0.05) | 0.03 (0.34) | 0.05 (0.07) | -0.07 (0.10) | -0.09 (0.25) | $6\,e^{-4}$ (0.06) | -0.13 (0.10) | -0.03 (0.09) | -13.60 (13.26) | 0.16 (0.08) | -0.20 (0.04) | -4.95 (5.68) | -0.09* (0.05) | 0.32 (0.40) | -5.72 (6.59) | -0.10** (0.03) | -0.12 (0.16) |
| Fisauto x Dem | 0.05*** (0.004) | 0.04*** (0.003) | -0.02 (0.14) | | | | | | | | | | | | | | | |
| Fisauto x Elecdem | | | | 0.36*** (0.09) | 0.22 (0.17) | -0.10 (0.69) | | | | | | | | | | | | |
| Fisauto x Pardem | | | | | | | 0.43*** (0.14) | 0.37 (0.21) | -0.35 (1.07) | | | | | | | | | |
| Fisauto x Cor | | | | | | | | | | -0.44 (0.29) | 0.007 ($3\,e^{-4}$) | -0.002 (0.01) | | | | | | |
| Fisauto x Lo | | | | | | | | | | | | | 3.23 (2.29) | 0.005 (0.02) | -0.10 (0.20) | | | |
| Fisauto x Bq | | | | | | | | | | | | | | | | 2.27 (1.58) | 0.01* (0.006) | -0.61* (0.35) |
| Fisauto x Milex | 0.04*** (0.002) | 0.04*** (0.003) | -0.05 (0.04) | 0.005 (0.02) | 0.008 (0.01) | -0.03 (0.06) | 0.01 (0.02) | 0.01 (0.01) | -0.04 (0.04) | 3.73 (3.21) | 0.04 (0.02) | -0.13 (0.06) | 1.32 (1.40) | 0.09*** (0.009) | -0.15 (0.15) | 1.70 (1.63) | 0.08*** (0.01) | -0.03 (0.07) |
| Observation | 34 | 34 | 22 | 34 | 34 | 22 | 34 | 34 | 22 | 18 | 18 | 10 | 29 | 29 | 19 | 29 | 29 | 19 |
| Groups | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 9 | 8 | 8 | 5 | 10 | 10 | 7 | 10 | 10 | 7 |
| **Dep. Variable: Percentage of discriminated in population** | | | | | | | | | | | | | | | | | | |
| | (55) | (56) | (57) | (58) | (59) | (60) | (61) | (62) | (63) | (64) | (65) | (66) | (67) | (68) | (69) | (70) | (71) | (72) |
| Exp. variables | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |
| **D. Variable of Interest: Fiscal Control, Institution, and Military Spending** | | | | | | | | | | | | | | | | | | |
| Fiscon | -5.34*** (2.00) | -0.13*** (0.004) | -0.52 (5.83) | -3.67* (2.03) | -0.16* (0.09) | -0.05 (1.23) | -3.46* (2.02) | -0.12 (0.18) | 0.11 (14.25) | -7.06* (3.81) | -0.60 (0.14) | -0.09 (0.14) | -10.77*** (3.96) | -0.04 (0.19) | -0.11 (1.89) | -7.21** (3.79) | -0.16 (1.12) | 0.11 (2.71) |
| Dem (polity) | -0.01* (0.07) | 0.01 (0.006) | -0.08 (0.24) | | | | | | | | | | | | | | | |
| Elecdem | | | | 0.16 (0.14) | 0.18 (0.13) | -0.21 (0.20) | | | | | | | | | | | | |
| Pardem | | | | | | | 0.24 (0.22) | 0.30 (0.22) | -1.25 (40.77) | | | | | | | | | |
| Cor | | | | | | | | | | 0.009** (0.004) | -0.005 (0.02) | 0.50** (0.17) | | | | | | |
| Lo | | | | | | | | | | | | | -0.002 (0.008) | -0.003 (0.008) | -0.29 (0.45) | | | |
| Bq | | | | | | | | | | | | | | | | -0.009 (0.01) | 0.02 (0.01) | 3.44 (4.66) |
| Milex | 0.11** (0.05) | 0.06 (0.03) | -0.03 (0.08) | 0.18 (0.14) | 0.02 (0.08) | 0.05 (0.05) | 0.17 (0.14) | -0.01 (0.09) | 0.02 (1.25) | -0.01 (0.02) | -0.04 (0.03) | -0.31 (0.27) | -0.06** (0.03) | -0.08** (0.03) | 1.40 (2.16) | 0.01 (0.03) | -0.03 (0.04) | -1.33 (4.16) |

| Exp. variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscon x Dem | 0.30*** (0.01) | 0.28*** (0.03) | 0.06 (0.75) | | | | | | | | | | | | | | | |
| Fiscon x Elecdem | | | | 1.72*** (0.32) | 1.47** (0.56) | -3.51*** (0.93) | | | | | | | | | | | | |
| Fiscon x Pardem | | | | | | | 1.78*** (0.48) | 1.52* (0.80) | -0.65 (11.13) | | | | | | | | | |
| Fiscon x Cor | | | | | | | | | | 0.15*** (0.006) | 0.13*** (0.02) | 0.02 (0.11) | | | | | | |
| Fiscon x Lo | | | | | | | | | | | | | 0.55*** (0.13) | 0.55*** (0.08) | -1.71 (2.54) | | | |
| Fiscon x Bq | | | | | | | | | | | | | | | | 0.24*** (0.03) | 0.22*** (0.04) | -2.13 (5.35) |
| Fiscon x Milex | 0.25*** (0.02) | 0.24*** (0.03) | 0.02 (0.71) | -0.03 (0.07) | -0.009 (0.04) | 0.21 (0.11) | -0.02 (0.08) | 0.007 (0.04) | -0.08 (5.75) | 0.38*** (0.02) | 0.36*** (0.04) | 0.39 (0.75) | 0.93*** (0.08) | 0.90*** (0.04) | -0.05 (1.18) | 0.41*** (0.04) | 0.31*** (0.06) | -2.55 (4.17) |
| Observation | 34 | 34 | 22 | 34 | 34 | 22 | 34 | 34 | 22 | 29 | 29 | 19 | 29 | 29 | 19 | 29 | 29 | 19 |
| Groups | 12 | 12 | 9 | 12 | 12 | 9 | 12 | 12 | 9 | 10 | 10 | 7 | 10 | 10 | 7 | 10 | 10 | 7 |

Notes: The GMM models pass autocorrelation and validity tests. Number of parentheses are robust standard error. Asterisk as follows: *** = significant at 1 percent level; ** = significant at 5 percent level; * = significant at 10 percent level. Other explanatory variables as follows: (1) Natural logarithm of GDP per capita; (2) Population growth rate; (3) Openness in Trade. In case of GMM, first lag of dependent variable included as explanatory variable. Full results available upon request.

## A5.4 Full Regression on *Power*, Fiscal Decentralization, Institutional Quality, and Military Expenditure

| Exp. variables | Dep. Variable: Percentage of powerless in population | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |
| | A. Variable of Interest: Revenue Share, Institution, and Military Spending | | | | | | | | | | | | | | | | | |
| Rev | 0.05 (0.31) | 0.67 (0.47) | 0.49 (0.55) | 0.29 (0.33) | 1.00** (0.47) | 0.40 (1.36) | 0.17 (0.25) | 0.74*** (0.29) | 0.26 (1.39) | -0.58 (0.42) | -0.65 (0.54) | 0.48 (0.62) | -1.28* (0.78) | -1.93** (0.97) | -0.64 (1.25) | -0.93* (0.56) | -1.15 (0.74) | 0.47 (0.36) |
| Dem (polity) | 1.47 (1.41) | 4.77** (2.10) | 0.26 (1.54) | | | | | | | | | | | | | | | |
| Elecdem | | | | 24.81 (15.63) | 64.94*** (21.98) | 28.66 (27.39) | | | | | | | | | | | | |
| Pardem | | | | | | | 40.28* (22.27) | 104.54*** (29.88) | 42.43 (55.24) | | | | | | | | | |
| Cor | | | | | | | | | | 6.13 (4.67) | 9.52 (7.33) | 3.39 (4.47) | | | | | | |
| Lo | | | | | | | | | | | | | -5.85* (3.61) | -9.50** (4.20) | -4.91 (10.95) | | | |
| Bq | | | | | | | | | | | | | | | | 4.28 (5.22) | 7.17 (7.62) | -1.71 (4.42) |
| Milex | -1.44 (1.97) | -1.58 (2.44) | -0.23 (2.55) | -0.47 (1.80) | 0.65 (1.96) | 0.44 (2.87) | -0.27 (1.75) | 0.94 (1.84) | 0.31 (2.82) | -2.97 (2.46) | -3.32 (3.10) | -0.18 (3.48) | -0.81 (2.06) | -2.99 (3.14) | 1.37 (5.12) | -2.31 (2.03) | -4.62* (2.72) | -0.44 (3.32) |
| Rev x Dem | -0.09 (0.07) | -0.21** (0.11) | -0.07 (0.05) | | | | | | | | | | | | | | | |
| Rev x Elecdem | | | | -1.45* (0.84) | -2.85*** (1.13) | -1.17 (0.92) | | | | | | | | | | | | |

| Exp. Variables | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rev x Pardem | | | | | | -2.09* (1.14) | -4.16*** (1.47) | -1.61 (1.60) | | | | | | | | | |
| Rev x Cor | | | | | | | | | -0.05 (0.11) | -0.14 (0.17) | -0.23 (0.17) | | | | | | |
| Rev x Lo | | | | | | | | | | | | 0.19* (0.11) | 0.31*** (0.10) | 0.19 (0.32) | | | |
| Rev x Bq | | | | | | | | | | | | | | | 0.14 (0.15) | 0.18 (0.22) | -0.23 (0.15) |
| Rev x Milex | 0.17 (0.13) | 0.16 (0.15) | -0.02 (0.14) | 0.12 (0.10) | 0.04 (0.11) | 0.04 (0.32) | 0.11 (0.10) | 0.05 (0.11) | 0.05 (0.32) | 0.23 (0.17) | 0.30 (0.23) | -0.008 (0.11) | 020 (0.16) | 0.28 (0.24) | -0.03 (0.20) | 0.22 (0.14) | 0.29 (0.18) | -0.005 (0.11) |
| Observation | 125 | 125 | 73 | 126 | 126 | 74 | 126 | 126 | 74 | 109 | 109 | 65 | 109 | 109 | 65 | 109 | 109 | 65 |
| Groups | 44 | 44 | 34 | 44 | 44 | 34 | 44 | 44 | 34 | 37 | 37 | 30 | 37 | 37 | 30 | 37 | 37 | 30 |

| | Dep. Variable: Percentage of powerless in population | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Exp. Variables** | (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) | (27) | (28) | (29) | (30) | (31) | (32) | (33) | (34) | (35) | (36) |
| | **RE** | **FE** | **System GMM** | **RE** | **FE** | **System GMM** | **RE** | **FE** | **System GMM** | **RE** | **FE** | **System GMM** | **RE** | **FE** | **System GMM** | **RE** | **FE** | **System GMM** |
| | **B.** Variable of Interest: Expenditure Share, Institution, and Military Spending | | | | | | | | | | | | | | | | | |
| Exp | -0.14 (0.29) | 0.38 (0.42) | 0.22 (0.34) | -0.04 (0.31) | 0.63 (0.50) | 0.39 (0.68) | -0.08 (0.25) | 0.47 (0.36) | 0.39 (0.60) | -0.72* (0.42) | -1.05* (0.54) | 0.32 (0.74) | -1.20 (0.82) | -2.15** (1.04) | -0.70 (1.56) | -1.15** (0.56) | -1.42** (0.69) | -0.03 (0.61) |
| Dem (polity) | 0.79 (1.22) | 3.61* (1.87) | -0.04 (1.28) | | | | | | | | | | | | | | | |
| Elecdem | | | | 9.81 (14.22) | 48.05* (25.56) | 16.33 (36.07) | | | | | | | | | | | | |
| Pardem | | | | | | | 20.77 (20.62) | 87.31** (38.25) | 30.62 (49.95) | | | | | | | | | |
| Cor | | | | | | | | | | 5.36 (4.55) | 8.32 (6.83) | 3.72 (6.15) | | | | | | |
| Lo | | | | | | | | | | | | | -4.27 (3.19) | -7.73* (4.11) | -4.55 (12.94) | | | |
| Bq | | | | | | | | | | | | | | | | 3.71 (5.89) | 6.74 (8.09) | -10.15 (9.07) |
| Milex | -1.70 (1.91) | -2.00 (2.31) | -0.77 (2.08) | -1.04 (1.77) | -0.08 (1.88) | 0.06 (2.18) | -0.69 (1.66) | 0.65 (1.76) | 0.57 (1.62) | -2.92 (2.10) | -3.94 (2.43) | -0.05 (4.05) | -0.73 (1.64) | -3.38 (2.46) | 1.38 (5.36) | -2.79 (1.89) | -5.21** (2.47) | 0.24 (2.23) |
| Exp x Dem | -0.07 (0.06) | -0.18* (0.10) | -0.04 (0.05) | | | | | | | | | | | | | | | |
| Exp x Elecdem | | | | -0.95 (0.78) | -2.45* (1.24) | -0.78 (1.52) | | | | | | | | | | | | |
| Exp x Pardem | | | | | | | -1.47 (1.14) | -3.87** (1.77) | -1.36 (1.82) | | | | | | | | | |
| Exp x Cor | | | | | | | | | | -0.02 (0.12) | -0.12 (0.18) | -0.20 (0.21) | | | | | | |
| Exp x Lo | | | | | | | | | | | | | 0.15 (0.10) | 0.25*** (0.10) | 0.20 (0.44) | | | |
| Exp x Bq | | | | | | | | | | | | | | | | 0.19 (0.18) | 0.19 (0.25) | 0.004 (0.24) |
| Exp x Milex | 0.20 (0.14) | 0.23 (0.16) | 0.03 (0.10) | 0.15 (0.11) | 0.11 (0.11) | -0.007 (0.13) | 0.14 (0.11) | 0.10 (0.10) | -0.02 (0.10) | 0.25 (0.17) | 0.39* (0.24) | 0.02 (0.15) | 0.22 (0.16) | 0.37 (0.25) | -0.04 (0.18) | 0.27* (0.15) | 0.36* (0.18) | -0.001 (0.16) |
| Observation | 125 | 125 | 73 | 126 | 126 | 74 | 126 | 126 | 74 | 109 | 109 | 65 | 109 | 109 | 65 | 109 | 109 | 65 |
| Groups | 44 | 44 | 34 | 44 | 44 | 34 | 44 | 44 | 34 | 37 | 37 | 30 | 37 | 37 | 30 | 37 | 37 | 30 |

| Exp. variables | Dep. Variable: Percentage of powerless in population | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (37) | (38) | (39) | (40) | (41) | (42) | (43) | (44) | (45) | (46) | (47) | (48) | (49) | (50) | (51) | (52) | (53) | (54) |
| | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |
| **C. Variable of Interest: Fiscal Autonomy, Institution, and Military Spending** | | | | | | | | | | | | | | | | | | |
| Fisauto | 4.29 (4.32) | 6.92 (4.43) | -7.99 (12.22) | -2.37 (3.88) | 0.46 (3.18) | -7.89 (10.24) | -2.50 (3.21) | 0.07 (2.41) | -9.36 (7.19) | -0.41 (0.98) | 1.86 (1.79) | -1.88 (11.04) | -1.79 (1.39) | 0.16 (1.38) | 2.47 (16.22) | -4.51** (2.29) | -4.31** (2.08) | -6.60 (5.91) |
| Dem (polity) | 1.31 (1.76) | 1.23 (1.89) | -0.72 (2.79) | | | | | | | | | | | | | | | |
| Elecdem | | | | 1.29 (20.55) | 0.35 (20.51) | -14.00 (20.21) | | | | | | | | | | | | |
| Pardem | | | | | | | -7.97 (22.88) | -12.05 (20.78) | -35.46* (20.89) | | | | | | | | | |
| Cor | | | | | | | | | | -1.12 (2.85) | -0.46 (3.21) | 3.40 (10.51) | | | | | | |
| Lo | | | | | | | | | | | | | -3.07** (1.50) | -3.19* (1.78) | -0.48 (13.72) | | | |
| Bq | | | | | | | | | | | | | | | | -3.42* (2.58) | -5.09 (3.22) | 6.10 (10.19) |
| Milex | -0.21 (1.17) | 0.97 (1.44) | -6.80 (7.89) | -0.14 (0.96) | 1.00 (1.29) | -1.98 (4.64) | -0.21 (0.93) | 0.94 (1.26) | -8.38 (7.12) | 0.68 (2.43) | -0.006 (1.96) | -3.00 (8.40) | 0.01 (1.15) | 1.77 (1.44) | -3.32 (15.31) | -0.20 (0.89) | 1.38 (1.18) | -7.64 (7.90) |
| Fisauto x Dem | -0.63 (0.69) | -0.82 (0.75) | 0.33 (1.50) | | | | | | | | | | | | | | | |
| Fisauto x Elecdem | | | | 3.04 (7.34) | 1.05 (6.79) | 8.12 (11.17) | | | | | | | | | | | | |
| Fisauto x Pardem | | | | | | | 5.91 (9.01) | 3.89 (8.06) | 8.50 (13.48) | | | | | | | | | |
| Fisauto x Cor | | | | | | | | | | 0.11 (0.10) | 0.05 (0.10) | 0.06 (0.40) | | | | | | |
| Fisauto x Lo | | | | | | | | | | | | | 0.66 (0.43) | 0.51 (0.42) | -2.62 (8.03) | | | |
| Fisauto x Bq | | | | | | | | | | | | | | | | 1.84** (0.95) | 2.38** (1.09) | -0.24 (2.83) |
| Fisauto x Milex | 0.53 (0.46) | 0.41 (0.56) | 2.50 (2.33) | 0.63 (0.47) | 0.38 (0.57) | 1.68 (2.18) | 0.61 (0.47) | 0.36 (0.54) | 2.85 (2.25) | 0.38 (0.65) | 0.21 (0.63) | 1.02 (4.38) | 0.40 (0.49) | 0.15 (0.62) | 2.62 (5.24) | 0.61 (0.43) | 0.34 (0.44) | 3.03 (2.84) |
| Observation | 115 | 115 | 89 | 115 | 115 | 89 | 115 | 115 | 89 | 59 | 59 | 36 | 110 | 110 | 86 | 110 | 110 | 86 |
| Groups | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 19 | 19 | 16 | 24 | 24 | 24 | 24 | 24 | 24 |

| Exp. variables | Dep. Variable: Percentage of powerless in population | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (55) | (56) | (57) | (58) | (59) | (60) | (61) | (62) | (63) | (64) | (65) | (66) | (67) | (68) | (69) | (70) | (71) | (72) |
| | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM | RE | FE | System GMM |
| **D. Variable of Interest: Fiscal Control, Institution, and Military Spending** | | | | | | | | | | | | | | | | | | |
| Fiscon | -7.59 (10.89) | -31.08* (18.27) | -13.11 (18.56) | 6.68 (11.17) | 4.22 (20.94) | 7.92 (38.01) | 4.47 (9.17) | 2.68 (17.95) | -2.27 (22.66) | -9.14 (6.99) | -12.73 (9.72) | 6.30 (15.15) | -7.32 (5.44) | -6.39 (6.97) | -10.90 (13.32) | -21.65 (16.21) | -19.12 (15.43) | -7.65 (25.40) |
| Dem (polity) | 0.37 (1.00) | 0.28 (0.98) | -1.08 (1.35) | | | | | | | | | | | | | | | |
| Elecdem | | | | 5.27 (10.24) | 4.83 (12.60) | -7.99 (21.15) | | | | | | | | | | | | |
| Pardem | | | | | | | 1.05 | -0.13 | -13.79 | | | | | | | | | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | (13.46) | (15.33) | (22.44) | | | | | | | | | |
| Cor | | | | | | | | | | -1.81 (1.90) | -2.16 (1.55) | 5.79 (8.61) | | | | | | |
| Lo | | | | | | | | | | | | | -1.92 (1.25) | -2.08 (1.29) | -6.70 (5.71) | | | |
| Bq | | | | | | | | | | | | | | | | -0.30 (1.90) | -0.26 (2.15) | 3.45 (6.89) |
| Milex | 1.10 (1.18) | 1.47 (1.17) | -1.88 (3.09) | 0.93 (1.09) | 1.32 (1.13) | -2.98 (2.70) | 0.82 (1.05) | 1.23 (1.12) | -3.13 (2.96) | 1.87 (1.33) | 2.57* (1.48) | -4.59 (6.83) | 1.19 (1.30) | 1.86 (1.32) | 7.31 (9.54) | 0.83 (1.08) | 1.31 (1.13) | -1.19 (3.03) |
| Fiscon x Dem | 0.10 (1.45) | 2.53 (2.01) | 0.49 (12.58) | | | | | | | | | | | | | | | |
| Fiscon x Elecdem | | | | -18.12 (17.23) | -16.63 (25.93) | -18.78 (40.84) | | | | | | | | | | | | |
| Fiscon x Pardem | | | | | | | -23.23 (21.46) | -23.91 (33.27) | -11.19 (36.54) | | | | | | | | | |
| Fiscon x Cor | | | | | | | | | | 1.71 (1.92) | 4.27* (2.35) | -7.34 (7.46) | | | | | | |
| Fiscon x Lo | | | | | | | | | | | | | 0.23 (0.78) | -1.95 (1.18) | 5.93 (5.37) | | | |
| Fiscon x Bq | | | | | | | | | | | | | | | | 4.15 (3.78) | 3.06 (3.08) | -1.30 (5.03) |
| Fiscon x Milex | -2.68 (2.74) | -5.67 (4.92) | 3.01 (14.57) | -3.98 (3.36) | -7.69 (6.00) | -0.56 (7.79) | -4.01 (3.29) | -7.65 (5.96) | 0.76 (6.46) | -3.94 (3.57) | -10.90 (7.02) | 5.52 (5.40) | -2.73 (2.39) | -7.12 (4.65) | -7.93 (9.93) | -0.24 (2.34) | -4.86 (5.16) | 4.03 (7.65) |
| Observation | 116 | 116 | 90 | 116 | 116 | 90 | 116 | 116 | 90 | 110 | 110 | 86 | 110 | 110 | 86 | 110 | 110 | 86 |
| Groups | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |

Notes: The GMM models pass autocorrelation and validity tests. Number of parentheses are robust standard error. Asterisk as follows: *** = significant at 1 percent level; ** = significant at 5 percent level; * = significant at 10 percent level. Other explanatory variables as follows: (1) Natural logarithm of GDP per capita; (2) Population growth rate; (3) Openness in Trade. In case of GMM, first lag of dependent variable included as explanatory variable. Full results available upon request.

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