Tangled Web: The Role of Oil, Gas and Mining in Funding Regional Governments in Indonesia

David Manley, Rani Febrianti and Hari Subhash

JANUARY 2020

Natural Resource Governance Institute

Contents

Key messages

- Indonesia's system of funding provincial, district and city governments is one of the most complex in the world, and has undergone substantial expansion over the last two decades.
- While the system allows thousands of authorities to function, it is failing in three respects: inequality of funding between regions persists, funding for some governments is unpredictable and volatile and some oil- and gas-rich regions have not sufficiently prepared for a possible future with much lower revenues.
- Indonesia's planning ministry, Bappenas, should investigate these issues further focusing particularly on clarifying policy objectives, ensuring more reliable funding, supporting oil- and gas-rich regions in becoming more resilient to a long-term decline in prices and clarifying the published rules around the funding system.

Glossary

Badan Perencanaan Pembangunan Nasional (Bappenas): Ministry of National Development Planning/National Planning Agency

Basic allocation: Salary of government employee

Bea Perolehan Hak atas Tanah dan Bangunan (BPHTB): Acquisition Duty of Right on Land and Building

Dana Otonomi Khusus (Otsus): Special Autonomy Fund

Dana Alokasi Umum (DAU): General Allocation Fund (DAU)

Dana Alokasi Khusus (DAK): Special Allocation Fund (DAK)

Dana Bagi Hasil (DBH): Revenue Sharing Fund (DBH)

Dana Bagi Hasil Pajak (Tax DBH): Revenue Sharing Fund of Tax

Dana Bagi Hasil (DBH) Pajak Bumi dan Bangunan (PBB): Revenue Sharing Fund of Land and Building Tax

Dana Bagi Hasil Cukai Hasil Tembakau (DBH CHT): Revenue Sharing Fund of Tobacco Products Excise

Dana Bagi Hasil Minyak dan Gas (Oil and Gas DBH): Revenue Sharing Fund of Oil and Gas

Dana Bagi Hasil Sumber Daya Alam (Resource DBH): Revenue Sharing Fund of Natural Resources comprises of revenue sharing of oil and gas, geothermal, mining, fishery and forestry.

Dana Bagi Hasil Pajak Penghasilan (income tax DBH): Revenue Sharing Fund of Income Tax

Dana Insentif Daerah (DID): Local Incentive Fund

Dana Perimbangan: Balance Fund

Dana Bagi Hasil Panas Bumi (Geothermal DBH): Revenue Sharing Fund of Geothermal

Dana Bagi Hasil Perikanan (Fishery DBH): Revenue Sharing Fund of Fishery

Dana Bagi Hasil Pertambangan Umum (Mining DBH): Revenue Sharing Fund of General Mining

Dana Bagi Hasil Sumber Daya Alam Kehutanan (Forestry DBH): Revenue Sharing Fund of Forestry

Pajak Bumi and Bangunan (PBB): Land and Building Tax

Pajak Daerah dan Retribusi Daerah: Local Taxes and Retributions

Pajak Penghasilan (PPh): Income Tax

Sisa Lebih Pembayaran Negara (SILPA): Budget Surplus

Pendapatan Asil Daerah (PAD): Regional Own Revenue (PAD) is locally-raised revenue of a region.

Summary

This report charts the expansion of Indonesia's decentralized government after the 1998 reform as it relates to the sharing of natural resource revenues, investigates the challenges this creates and offers some recommendations for reform and further investigation. This report investigates regional government funding from the perspective of sharing natural resource revenues, but does so holistically, by considering how these funds interact with the whole complex system of regional funds.

To support this work, we developed a data set covering the audited funds transferred from the central government to hundreds of regional governments in Indonesia between the years 2001 to 2017. This dataset, which is available alongside this report, is now the most comprehensive database on this subject available.

IN CONTEXT: EXPANDING REGIONAL GOVERNMENT FUNDING

Since the extensive decentralization of government in 2001, Indonesia has massively expanded the role and funding mechanisms for regional governments.

More regional governments (section 1.1)

Since 2001, the Indonesian population has grown by 56 million people and the number of regional governmental authorities has correspondingly grown. There are three hierarchical levels of regional governments, all of which have expanded since 2001. In the beginning of 1999, there were 26 top-level provincial government; today there are 34. In 2001, there were 59 city authorities; today there are 93. In 1999, there were 234 district governments; today there are 415 as well as 74,000 village authorities, and special village authorities. Furthermore, some regions such as Aceh and Papua have special funding systems to fit their semi-autonomous status.

More money transferred to regional governments (section 1.2)

Indonesia funds its regional authorities through one of the most complex intergovernmental transfer systems in the world, using nine different types of transfers totaling 10 percent of Indonesia's gross domestic product. Even after adjusting for inflation between 2001 and today, the amount of funds transferred to regional governments has expanded almost by a factor of five (450 percent) compared to those transferred in 2001. Central government funds have only increased by 65 percent over the same period.

Regional governments raise some of their own funds from local taxation, but all rely on transfers from the central government for the vast majority. In 2012, the last year of available data on these local taxes, the median proportion of a regional government's self-generated funds to its total funds was nearly one to five.

More money for the lowest levels of government (section 1.3)

The transfers from central government have increasingly gone to the lowest levels of regional government with the nominal purpose of funding these authorities' growing responsibilities and fiscal needs. At the start of 2001, for each person in their jurisdiction, district and city governments received three times as much funding as their provincial governments. By 2015, this had grown to eight-times. (Although recently the gap has narrowed slightly). Furthermore, recent policies also intend for as much as 10 percent of all funding to go to the approximately 74,000 village authorities, the lowest level of government.

Less money from oil (section 1.4)

Since reaching its peak in 2008, government revenue from the oil and gas industry has fallen, and unless oil companies invest significant amounts, it is estimated that Indonesia will produce less oil in the future (almost 40 percent less than current production if oil and gas prices follow the futures market predictions). The majority of oil revenue goes to the central government, however 12 percent goes to the districts and three percent to the provinces. Similarly, 24 percent of gas revenue goes to the districts and 6 percent to the provinces.

THREE CHALLENGES IN FUNDING INDONESIA'S REGIONAL GOVERNMENTS

These trends present Bappenas with challenges it will seek to address in the reform of regional government laws and meeting the objectives set for funding regional governments. In short, we interpret them to mean:

1 *Funding follows function.* Ensure that funding meets the assigned responsibilities and functions of each government authority.

2 *Reduce inequality.* Eliminate inequality of funding between regional governments in the same level, subject to meeting the first objective.

3 *Improve government spending.* Improve the prosperity of regions by improving public services and goods provided by regional governments, through efficient, effective and accountable local expenditure and budgeting. Includes transferring revenues reliably and predictably.

(See the introduction for an explanation of our reinterpretation.)

Missing from this list, is a fourth objective that the central government follows, but has not made explicit:

4 *Share resource revenue by derivation.* Share a portion of the revenues from natural resource extraction with the regional government from which those revenues are derived.

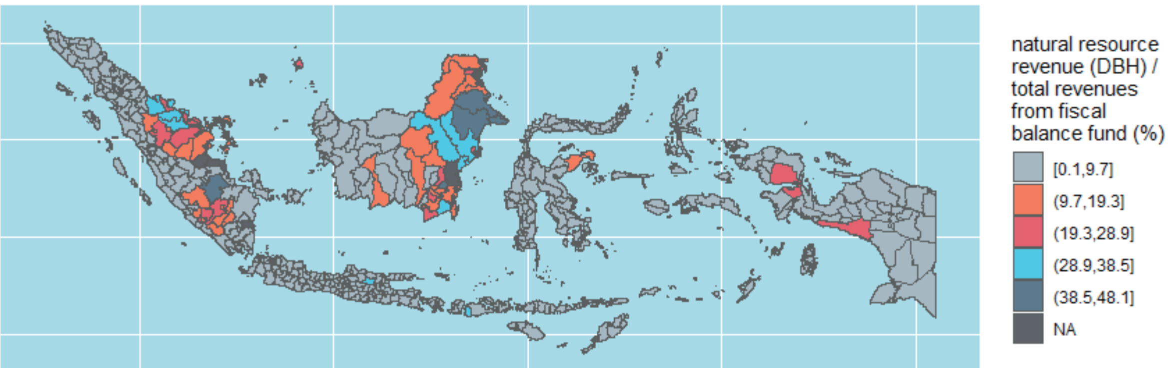
This missing objective is important because it drives many of the problems we have discovered in examining how Indonesia funds its regional governments.

This report focuses solely on the transfer of revenue, not on the use of those revenues. Thus our analysis leaves out an examination of some of the aspects of the objectives above – in particularly objective 1, which seeks to understand whether funding does follow the functions assigned to each government.

Inequality between regions persists (section 2.2)

Reducing inequality between regions is an important goal for Indonesia. However, there have been large differences in government funding per person across the provinces in Indonesia. This might be acceptable in terms of achieving the objectives, but these differences are only weakly related to differences in income or other measures of social welfare. The practice of natural resource revenue sharing by derivation is part cause of this inequality across regions. Government funding does not appear to target those regions most in need of the funds. Understanding why this has happened requires further examination. The approach to sharing natural resource revenues exacerbates this distribution as people in resource-rich regions are already richer than people in resource-poor regions. This highlights the trade-off the central government must make in both trying to achieve equality between regions and sharing natural resource revenues by derivation. [1]

Figure 1. Ratio of natural resource revenue (Dana Bagi Hasil (DBH) revenue-sharing fund) to total fiscal balance funds[1]



For some, particularly resource-rich regional governments, funding is unpredictable and volatile, making effective spending difficult (section 2.1.)

A common challenge in countries that share revenues from extractive industries is the volatility of this revenue. This is a problem because governments that receive funding that they cannot predict and which fluctuates from year to year find it difficult to plan for the future, leading to poor public investment decisions. Large differences between projected and actual transfers exacerbate the revenue volatility challenge.

1 NRGI regional government funding dataset. The 10 provinces that received the highest proportion of natural resource DBH compared to total fiscal balance funds are labelled.

While revenues from oil, gas and other commodities are usually volatile, Indonesia's Fiscal Balance Fund mechanism in theory should adjust for such changes. However, this is not entirely the case. Volatility appears to differ between the level of government, and the primary source of funds. Most provincial governments receive relatively volatile funding, irrespective of whether or not they are resource–rich. Conversely, most district governments receive relatively stable revenues each year, except for those that are resource-rich.

We also found evidence to suggest that the actual amounts the central government transfers often differs substantially from the amounts budgeted at the beginning of each year. While further investigation is necessary, this may also contribute to poor spending as regional governments cannot rely on their budgets to plan spending decisions.

Some oil and gas-rich regions have not sufficiently prepared for a future without extractive resource revenue (section 2.4)

The final challenge we examined was the long-term resilience of resource-dependent regions. The decline in oil and gas revenue over the last decade has led to falling revenues to these regions. Overall natural resource DBH transferred to local governments fell in real terms from 47 trillion in 2008 to 23 trillion in 2017. But this fall was highly concentrated, particularly in oil-rich districts: 90 percent of this fall affected just 33 district governments. The Kutai Kartanegara district in East Kalimantan alone saw a Rupiah (Rp) 4.5 trillion fall in real terms, accounting for 14 percent of the total fall in revenues.

These short-term fluctuations in the oil price make effective spending more difficult, but oil and gas-rich regions are likely resilient to a short-term fall in oil and gas prices. Principally, because the central government still transfers large amounts of oil revenue to these governments even when prices fall. However, for some regions, their long-term future looks less certain. While these regions have received large amounts from their oil and gas production, they have not sufficiently invested these funds to ensure their regional economies can generate prosperity and taxes if the oil business declines further. Because they rely on revenues from a non-renewable resource whose long-term value is highly uncertain, oil-rich governments need to invest more in the non-oil sector than do other regional governments. The depletion of resources or possible declines in commodity pricing requires them to create another source of revenue to compensate for the fall in oil revenue. If they fail to do so, and oil production declines further, these regions will have to hope that the rest of Indonesia is willing to share their funds (as will happen automatically given the current transfer system rules) or suffer permanent budget decreases. Conversely, the rest of Indonesia has an interest in ensuring that these regions invest their oil and mineral revenues well so that they do not become a burden in the future.

RECOMMENDATIONS FOR BAPPENAS

Recommendations regarding strategy and policy:

1 Clarify the objectives of the fiscal balance fund and establish objectives for the entire set of transfer processes.

2 Provide reliable funding where possible given the objective to share resource revenues and support regional governments to smooth expenditures (to follow objectives 3 and 4 of the fiscal balance fund (FBF)).

3 Support resource-rich regions to become resilient to commodity price slumps by better investing in their economies and expanding their tax bases (following objectives 3 and 4 of the FBF).

Recommendations regarding transparency and data use:

4 Make data available in a format that eases analysis, and that is free of errors.

5 Clarify and publicize rules on transfers (following objectives 3 and 4 of the FBF).

Issues requiring further investigation:

6 Review the formulation of the *Dana Alokasi Umum* (DAU) general allocation fund to ensure transfers are equitable in the context of differing fiscal needs (to follow objective 2 of the FBF).

7 Investigate whether funding follows function (to follow objective 1 of the FBF).

8 Investigate the effectiveness of regional government spending.

Introduction

In 2017, through its various intergovernmental revenue transfer systems, Indonesia's central transferred Rupiah 1,400 trillion (USD 99 billion) to over 74,000 regional government authorities that govern the 246 million people living across the vast archipelago. This represents one tenth of Indonesia's gross domestic product. Since implementing Indonesia implemented its first wave of reforms in 2001, the country's relationship with its oil, gas, and mining industries has changed greatly. A decade ago, a third of the regional government funding transferred came from the country's oil, gas and mining industries. Today, however, these industries contribute less than one in every ten rupiah the Indonesian government spends. Further, the country's transfer system has grown into one of the most complex in the world.[2] Making sure it works is central to the good governance of Indonesia and likely to be a key area for reform for the next presidential term.

In response to a request from the Ministry of National Planning (Bappenas), the Natural Resource Governance Institute (NRGI) has written this report and developed the accompanying database. We believe the dataset is the most up to date and complete set of data on the subject of Indonesia's intergovernmental transfer system. Our dataset that aggregates data from the following publicly available sources:

- Bank of Indonesia. National revenue collection and transfers at an aggregated level.
- Ministry of Finance, LKPP. Most regional government transfers data from 2001 to 2017.
- World Bank, Indonesia Database for Policy and Economic Research. Regional government transfers, expenditure and social welfare indicators from 2000 to 2013.
- World Bank, World Development Indicators. Gross Domestic Product (GDP) deflators.[3]

We transformed thousands of pages of portable document format (PDF) documents into a cleaned dataset, with standardized data variables and labelling so we could use data from different sources together. We are making the dataset available to the public in the hope that it will also be of use to others. [Fikri, please add link once you have it]

In the rest of the report we refer to this dataset as the *NRGI regional government funding* dataset.

2 Anwar Shah, Riatu Qibthiyyah, and Astrid Dita, "General Purpose Central-Provincial-Local Transfers (DAU) in Indonesia From Gap Filling to Ensuring Fair Access to Essential Public Services for All," *Policy Research Working Paper Series*, no. 6075 (2012): 36.

3 Data on expenditures is missing. This could be sourced from: APDB. Expenditure data. www.bps.go.id/pencarian.html?searching=statistik+keuangan+pemerintah+provinsi+2013+-+2014&yt1=Cari

COMPARING PERFORMANCE AGAINST THE OBJECTIVES OF THE FISCAL BALANCE FUND

We based our evaluation primarily on the objectives set by the Indonesian government in governing regional government funding, specifically the Fiscal Balance Fund (FBF), which is the main part of the entire system of transfers. There are no official objectives for the other parts of the system.[4] Our evaluation therefore asks whether the current funding of regional governments adheres to the objectives the Indonesia central government set itself.

Unfortunately, the objectives themselves are not sufficiently clear for us. Instead, we have offered our interpretation of their meaning. If these objectives are also not clear to policy makers, officials in regional governments and civil society monitors, there may be problems for future reforms as it may be difficult to understand what the government seeks to achieve from the reforms. Further, these objectives appear to conflict– it is unlikely for any transfer system to completely satisfy each of these objectives. The government therefore needs to rank its priorities to help officials decide how to trade-off one objective for another.

Objective 1. "Provide a source of funds for subnational governments to carry out their responsibilities in their administrative areas"

This objective was clear to us. We have interpreted this to mean that the central government should disburse funding to regional governments on the basis of the administrative functions that they have been assigned. This adheres to a common principle in inter-government transfer systems that "funding follows function." We did not consider what administrative functions each government has, as this is outside our area of expertise. However, this is an important topic to consider in future research.

Objective 2. "Eliminate fiscal inequality between central and subnational government and between subnational governments"

The second part of this objective is clear to us. The fiscal balance fund should ensure that each subnational (regional) government receives the same income. We assume that this is meant in the context of fiscal needs – so that poorer regions receive more, and that this funding adheres to objective one so that revenue is given to meet administrative responsibilities. Here there might be a conflict between the two objectives– if some governments have greater responsibilities than others, objective one says they should receive more revenue. Objective two says they should receive the same amount.

However, the first part of this objective was less clear to us. We understand this to relate to the principle underlying the first objective, that "funding should follow function." If this interpretation is correct, this part of the second part objective merely repeats the first objective.

4 Indonesia Ministry of Home Affairs, "Dana Perimbangan, Sumber Pendapatan Terbesar," 2 August 2013.

Objective 3. "Improve prosperity and public service delivery across Indonesia as well as to narrow the prosperity gap between subnational governments"

This objective is clear to us, although the two parts relate to two separate concepts. The first part we understand to mean that the FBF should help governments deliver public services to improve the prosperity of their citizens. In our analysis, we have focuses specifically on whether the FBF provides a stable source of revenue to support public spending and service delivery.

The second part of this objective appears to relate more closely to objective 2, regarding the inequality between regions. Therefore, we understand that this part repeats the concepts established in the second objective.

Objective 4. "Improve the efficiency, effectiveness and accountability in local expenditure and budgeting"

This objective is clear to us. That the FBF should provide revenue in a way that helps governments improve their spending. The first part of objective 3 relates to this same concept. Again, in the following analysis, we focused on the stability and predictability of revenues, qualities that if absent make expenditure and budgeting difficult.

Not expressed in these objectives, but a key part of the system, is the principle that revenues from extractive industries should be shared based on derivation, i.e., the region in which the revenues were derived and its neighboring regions, should receive a share the revenues from extractive industries located in their respective regions.

Therefore, given our interpretation of the objectives, we understand the objectives of the fiscal balance fund, and by extension, the entire system of regional government funding, to be:

1 *Funding follows function.* Ensure that funding meets the assigned responsibilities and functions of each government authority.

2 *Reduce inequality.* Eliminate inequality of funding between regional governments at the same level, subject to meeting the first objective.

3 *Improve government spending.* Improve the prosperity of regions by improving public services and goods provided by regional governments, through efficient, effective and accountable local expenditure and budgeting. Including transferring revenues reliably and predictably.

4 *Share resource revenue by derivation.* Share a portion of the revenues from natural resource extraction with the regional government from which those revenues are derived.

The objectives set by the Indonesian government, and the challenges faced in meeting these objectives are common in other countries. To relate these to other countries' experiences, we used the framework set out in our previous research with the United Nations Development Programme (UNDP) on resource revenue sharing systems across the world: "Natural Resource Revenue Sharing."[5] This research identified the challenges government officials typically face in designing, implementing and operating a system of inter-government transfers that share natural resource-derived revenues. As an organization focused on the governance of natural resources, we focused our evaluation on the challenges that governments face in managing their extractive resource industries and the often large tax payments that they generate. However, in this case we do not restrict our analysis to only Indonesia's DBH revenues (those payments made directly from the extractive industries), as ignoring the rest of the system would give only a partial view of the overall system. Instead, we consider how each element in the system interacts with, and has responded to, the impacts generated by extractive resources in the country. In this respect, our analysis is holistic.

Our analysis is, however, limited in that we focus solely on revenues. We have not considered expenditures directly, although our concern about the quality of spending steers our analysis throughout this report and we think further studies on this aspect are crucial. We have also not directly considered the important issue of transparency and accountability of the revenue system, except in certain cases when examining whether the national government transferred amounts as promised in the budget. We nevertheless hope that we have contributed to the transparency of the system by releasing this analysis and the companion dataset. Further research could yield useful results in both of these important areas.

STRUCTURE OF THE REPORT

There are three sections and an appendix to this study.

- Section 1. A brief overview of the system of regional governments and their funding (more details are in the appendix). We also include a brief history of the changes to the system since its start in 2001.
- Section 2. Evaluation of the four major challenges that Indonesia faces funding regional governments.
- Section 3. Our recommendations for Bappenas.
- Appendix. A description of regional government funding in Indonesia.

5 Andrew Bauer, Uyanga Gankhuyag, Sofi Halling, David Manley and Varsha Venugopal, *Natural Resource Revenue Sharing* (Natural Resource Governance Institute and United Nations Development Programme, 2016).

1. Overview of regional government funding in Indonesia

1.1 STRUCTURE OF INDONESIA'S DECENTRALIZED GOVERNMENT

Indonesia is a unitary state composed of central and subnational governments. The relationship between central and subnational government is hierarchical, with central government in a superior position to subnational governments. There are five levels in the hierarchy of government authorities in Indonesia. The first three are the central government, provincial governments, and a level consisting of cities and districts (governing rural areas). This third level we refer to as *local governments*. Under these local governments, sit two further levels: sub-districts and villages. In this report, when referring the whole set of these authorities, we refer to all authorities below the central government as *regional governments*. Figure 2 illustrates this hierarchy and shows the number of authorities in each group as of 2019. Since 2001 the number of authorities have grown substantially.

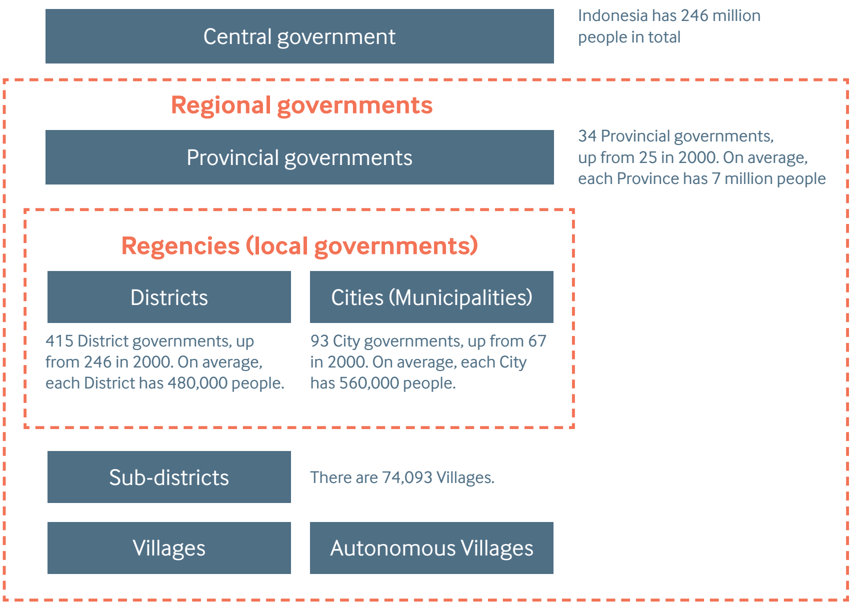


Figure 2. Hierarchy of central and regional governments in Indonesia, as of 2019[6]

Over time the lines of responsibility between each level of government in this hierarchy has changed and blurred. The Ministry of Home Affairs is the main central government department with authority over the entire set of regional governments. Other ministries have important roles as well. For example, the Ministry of Finance distributes the transfer and village funds to the subnational governments and other sectoral ministries that hold the authority to supervise the implementation for their respective sectors. Prior to the Regional Government 2014 law, Provinces, Districts and Cities were all directly responsible to these central government ministries.[7] However, since the enactment of Law 23/2014, provincial governments supervise some of the affairs of the districts and city authorities in their province. In practice

6 Authors, based on data from NRGI regional government funding dataset.
7 Government of Indonesia, *Law 23 concerning the Subnational Government* (2014).

however, there is a mix of supervision, with some affairs still supervised by the central government. District and city governments in turn supervise sub-district governments. These sub-districts in some cases supervise villages, the lowest level of government.

While some responsibility over local governments has switched from the central government to provincial governments, the central government still transfers funds directly to provincial, and local governments. Autonomous villages have rights to manage the interest of local communities based on their origins and local customs. These villages are entitled to conduct direct head village elections and draft the village development plan, while sub-district head is an appointed government official. The village fund is channeled through the district account annually to be redistributed to the villages. The Ministry of Finance established a set of rules that guarantee full supervision of such distribution to prevent any postponement.

1.2 GOVERNMENT FUNDING

Government spending is funded by a complex system of tax collection and revenue transfer. There are six types of revenues, governed by a variety of laws. Details of these are in the appendix.

1. *Central government revenue.* Money collected and spent by the central government.
2. *Fiscal Balance Fund (FBF).*[8] Money collected by the central government and transferred to regional governments. Within the FBF, there are three types of revenues:
    a. *General Allocation Fund, or Dana Alokasi Umum (DAU).* Funds allocated based on a formula that covers the salary needs of government staff and a set of variables describing the region's population, geographic size, income per person and a measure of human development.[9]
    b. *Revenue sharing fund, or Dana Bagi Hasil (DBH).* There are three types:
        i. Tax DBH. A share of revenue collected from property tax and income tax.
        ii. Excise duties DBH. A share of revenue collected from excise of tobacco products.
        iii. Natural resource DBH. A share of revenue collected from forestry, coal and minerals, oil and gas, geothermal business activities and fishery.
    c. *Special Allocation Fund, or Dana Alokasi Khusus (DAK).* Transfers from central government for specific projects such as infrastructure.
3. *Special Autonomous Fund for Special Autonomy Provinces.*[10] An additional share of natural resource revenues to the special autonomous provinces Yogyakarta, Aceh, Papua and West Papua.
4. I*ncentive Fund.*[11] Transfers made as a reward for best performance in terms of public finance management, including fiscal performance, public service in

8 Government of Indonesia, *Law 33 concerning Fiscal Balance Law between Central and Regional Government* (2004).

9 DAU transfers to the special autonomous provinces—Jakarta Special Capital Region, Yogyakarta Special Region, Aceh, Papua and West Papua—are made under a different set of rules. See appendix for details.

10 Government of Indonesia, *Law 21 on Special Autonomy Province of Papua* (2001). Amended by *Law 35* (2008), *Law 11 on Aceh Government* (2006), *Law 18 on Special Province of Nangroe Aceh* (2001), Darussalam, *Law 22 on Jakarta as Special Capita Region* (2007) and *Law 13 on Yogyakarta Special Province* (2012).

11 Government of Indonesia, *Law 12 of State Budget 2019* (2018).

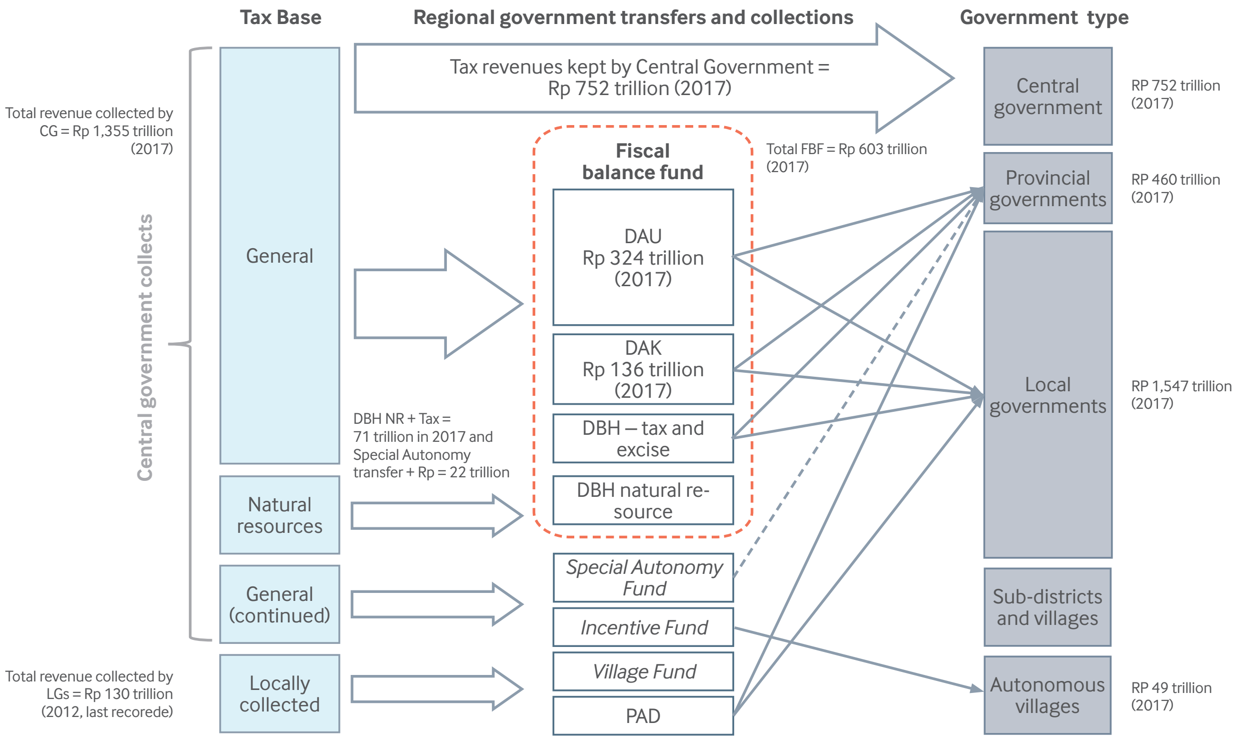
education, health, infrastructure, and public administration services in order to improve prosperity.

5 *Village fund.* Transfers from central government to villages directly through local budget and revenue of cities and districts to support village government administration, village development, people empowerment and public services in the villages.

6 *Local-source taxes (PAD).*[12] Money collected by regional government their own regions.

Figure 3 illustrates the entire set of revenues, transfers and government recipients in Indonesia. The Fiscal Balance Fund (FBF) is the largest part of this system, constituting about 40 percent of all revenues. The FBF, along with taxes collected by regional governments (PAD—about 10 percent of revenues), Special Autonomous Fund, Adjustment Fund and Village Fund together constitutes the revenues of regional governments. The remaining 50 percent of revenues funds the central government. Therefore, on average about half of government spending comes from the central government and half from one of the four levels of regional governments.

Figure 3. All revenues, transfers and government recipients (boxes not to scale)[13]



12 Regional taxes and retributions are governed under the Government of Indonesia, Law 28 concerning Local Taxes and Charges (2009).

13 NRGI regional government funding dataset, and Anwar Nasution, Government Decentralization Program in Indonesia (Nasution, Anwar, Government Decentralization Program in Indonesia (*ADBI Working Paper 601*, 2016).

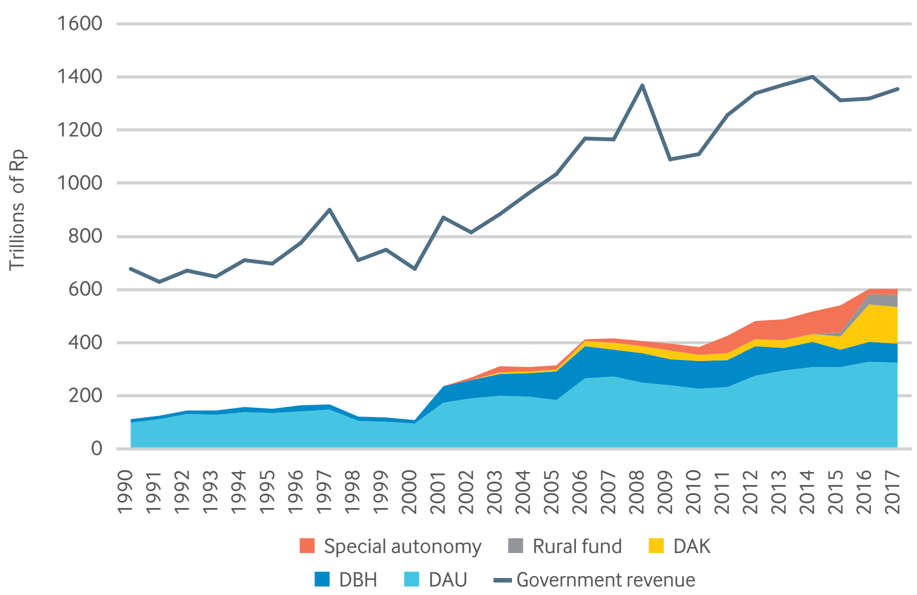


Figure 4. Total central government revenue and totals of the transfers to regional governments (adjusted for inflation)[14]

1.3 TWO MAJOR CHANGES IN THE AMOUNTS REGIONAL GOVERNMENT HAVE RECEIVED SINCE 2001

Since 2001 when the national government started the major decentralization program in Indonesia, there have been two major changes in the amounts regional government have received since 2001:

1. A shift in value from provincial governments to local governments, though this long-term shift in revenue towards local governments has recently started to reverse.
2. Oil-rich regions receive less money as oil production and prices have declined, though most oil-rich regions still remain relatively rich.

Shift in value to lower levels of government

In terms of total funding, local governments receive a much larger share of funding compared to their provincial governments. While this may follow the shift in the respective governments' responsibilities, this shift shows the relative change in power each level of government has experienced. However, recently there has been a small shift in favor of provincial governments, which we understand the central government wants to continue.

14 NRGI regional government funding dataset. Values adjusted for inflation using the Indonesia GDP deflator, 2017 prices.

During the period of 2001 to 2017, local governments received almost four times as much revenue as their provincial governments. Over this period, local governments saw a substantial increase in revenues, particularly after 2006. Conversely, funding to provincial governments rose much more slowly. However, since 2016 there has been a small shift in favor of provincial governments. Further, this shift may continue due to three changes to national government policy for the regions:

1. The recent increase in DAK payments to provincial governments has started to change the balance between local governments and provinces, but the gap is still wide. Further, some portion of this amount is meant to then be shared with the local governments, cities and districts.
2. Since local governments receive a larger percentage share of natural resource revenues, the fall in resource revenues resulted in resource-rich local governments becoming less well off in comparison to their provincial governments.
3. Although not captured in our data, from 2018, the legislated share of DAU to provinces rose from 10 percent to 14.1 percent.[15]

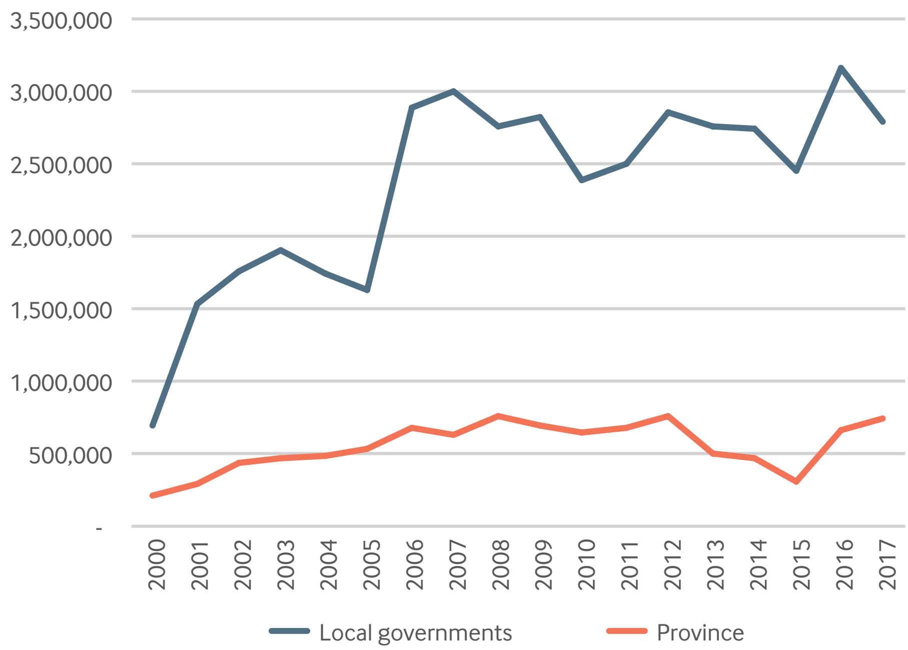


Figure 5. Average total funding per person, adjusted for inflation[16]

15 Government of Indonesia, *Law on National Budget* (2018)
16 NRGI regional government funding dataset

Change in the relative amounts received by oil-rich regions compared to the rest of Indonesia

DAU, the general allocation component of the Fiscal Balance Fund, remains the most important source of funding. Recently the national government has increased payments of DAK, which mostly go to infrastructure projects. But revenue from natural resources –DBH revenue (and the Special Autonomy Fund to Aceh, Papua and West Papua) – has declined significantly in the last five years.

These changes result from a relative fall in natural resource revenues (particular oil), and a large increase in other sources of tax revenues. The fall in oil revenues has been ongoing for the past 18 years. While forecasts such as Rystad's shown in figure 8, suggest a continued further fall for at least the next decade. As we will describe in section 2.3, this decline was concentrated in just a few district governments. Much of the rest of Indonesia was left unaffected.

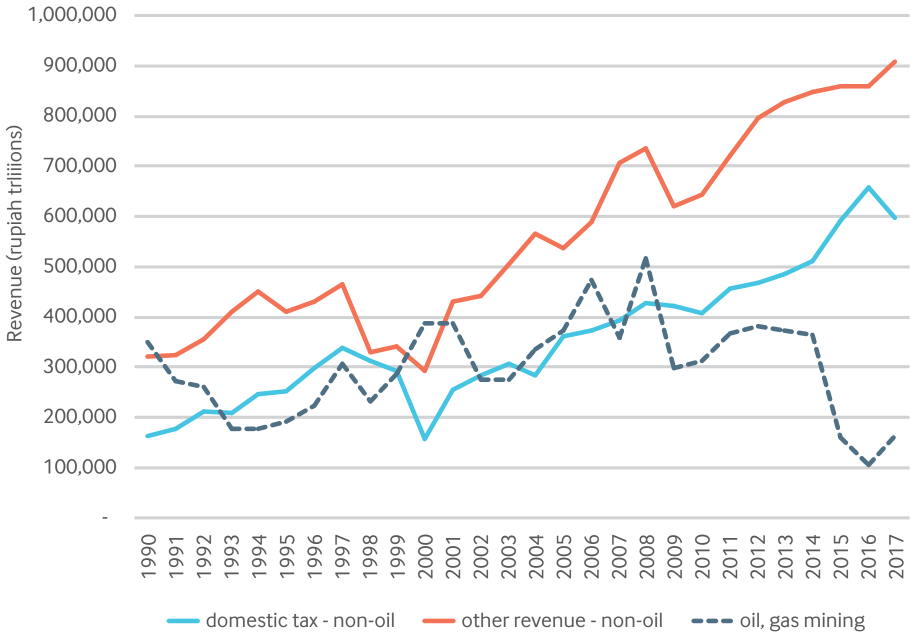


Figure 6. Sources of revenue, adjusted for inflation[17]

17 NRGI regional government funding dataset. "Oil, gas and mining" includes both corporate income tax transferred as domestic revenue to the central government and part of the general pool of funds for DAU and DAK transfers, as well as specific revenues as part of DBH.

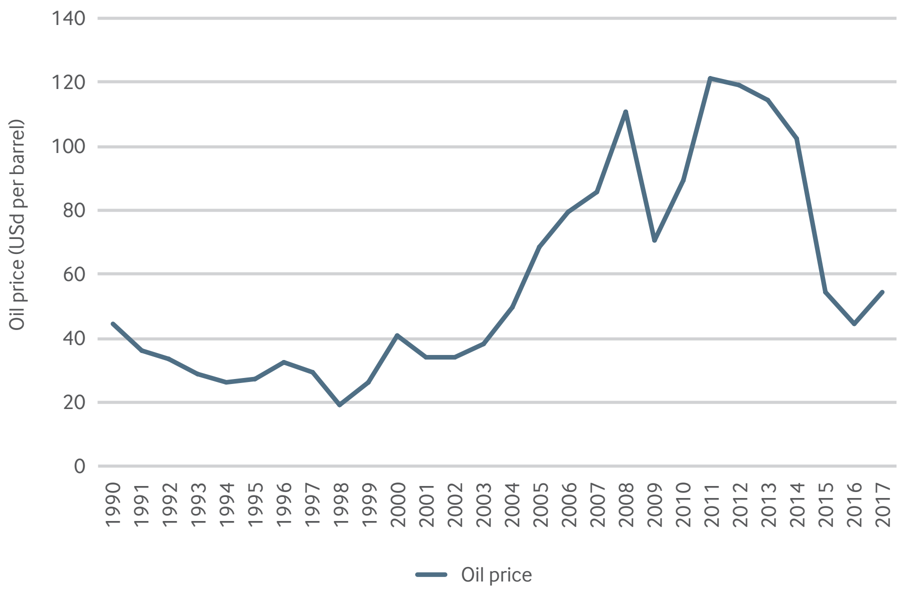


Figure 7. Crude oil price[18]

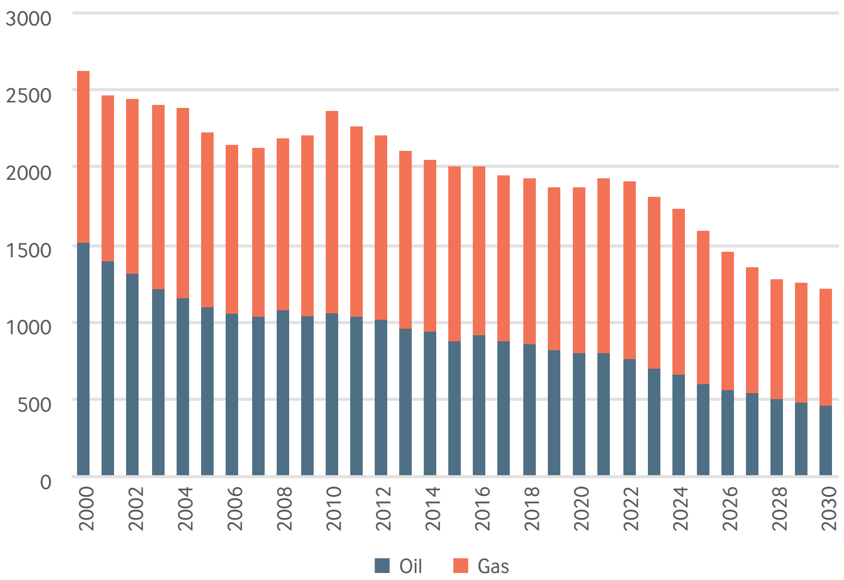


Figure 8. Historical and forecast oil and gas production in Indonesia, per barrel of oil equivalent[19]

18 Rystad Energy, *UCUBE (Upstream Database)*, 2019.
19 *Ibid.*

2. Evaluation of four challenges to funding regional governments

Indonesia funds regional government partly on the basis of derivation: regional governments keep a share of the revenue generated from the resources extracted in their region or in neighboring regions. For example, of 100 rupiah earned from mining, the originating district, its province, and neighboring districts keep 80 and the national government takes 20 rupiah. This is governed by the Dana Bagi Hasil (DBH) part of the system of government transfers.[20] Many other resource-rich countries share revenues from extractive industries in a similar way, following a principle that because resource extraction can harm local societies and their environment, and because many people believe that they have some form of rights over resources extracted close to their land, local people should be compensated for the extraction of these resources.[21],[22] In many countries, resource revenue sharing was born from the desire to maintain national cohesion between parts of a country rich in oil, gas or minerals and the rest. Where countries have failed to maintain cohesion, violent conflicts have ensued. Finally, resource revenue sharing is often seen as a mechanism to alleviate potential conflicts.[23]

In practice, following this derivation approach has made it difficult to follow other the objectives established for the Fiscal Balance Fund and has led to challenges commonly experienced by other resource-rich countries.[24] Specifically, we considered three challenges that appear to be most pertinent in Indonesia:

1. Inequality between regions persists.
2. For some, particularly resource-rich regional governments, funding is unpredictable and volatile, making effective spending difficult.
3. Some oil and gas-rich regions have not sufficiently prepared for a future without extractive resource revenue.

2.1 INEQUALITY BETWEEN REGIONS PERSISTS

Even compared with other emerging countries, Indonesia is unequal.[25] Inequality can be considered in different ways. Following the objectives of the Fiscal Balance Fund, we examined the inequality between regions. Based on the most recent data from 2012, a person in the capital, Jakarta, and the oil-rich provinces—Kepulauan Riau, Riau, Papua Barat, Kalimantan Timur—is likely to be 3 to 5 times richer than

20 The objectives established in legislation governing DBH and the fiscal balance fund in general do not specifically mention a derivation approach, but nonetheless sharing resource revenues in this way is a key part of the transfer system.
21 Andrew Bauer, Uyanga Gankhuyag, Sofi Halling, David Manley and Varsha Venugopal, *Natural Resource Revenue Sharing* (Natural Resource Governance Institute and United Nations Development Programme, 2016), 30.
22 Other countries do not share resource revenues in this manner, so the principle is not universally followed.
23 Bauer et al., *Natural Resource Revenue Sharing*.
24 Indonesia Ministry of Home Affairs, "Dana Perimbangan, Sumber Pendapatan Terbesar."
25 Caeser Nugroho finds that inequality in Indonesia is slowly decreasing, but at a much slower rate than other emerging and developing countries. Caesar Adi Nugroho, "Improving Government Policy on Regional Inequality Reduction in Indonesia," *International Journal of Management and Applied Science*, 2, no. 10 (2016): 116–22.

the average Indonesian. Only four out of 100 Jakartans live in poverty, compared to a third of all Papuans.

Reducing regional inequality across Indonesia has been a central objective of the national government's policy on funding regional governments. However, regional government funding has also been highly unequal. Much of this inequality has been driven by the highly concentrated natural resource wealth in only a few places in Indonesia.

The chart below shows that there are large differences in funding between each province. This is the total funding per person for both provincial, city and district governments in each province. The last year for which we have population data is 2012.

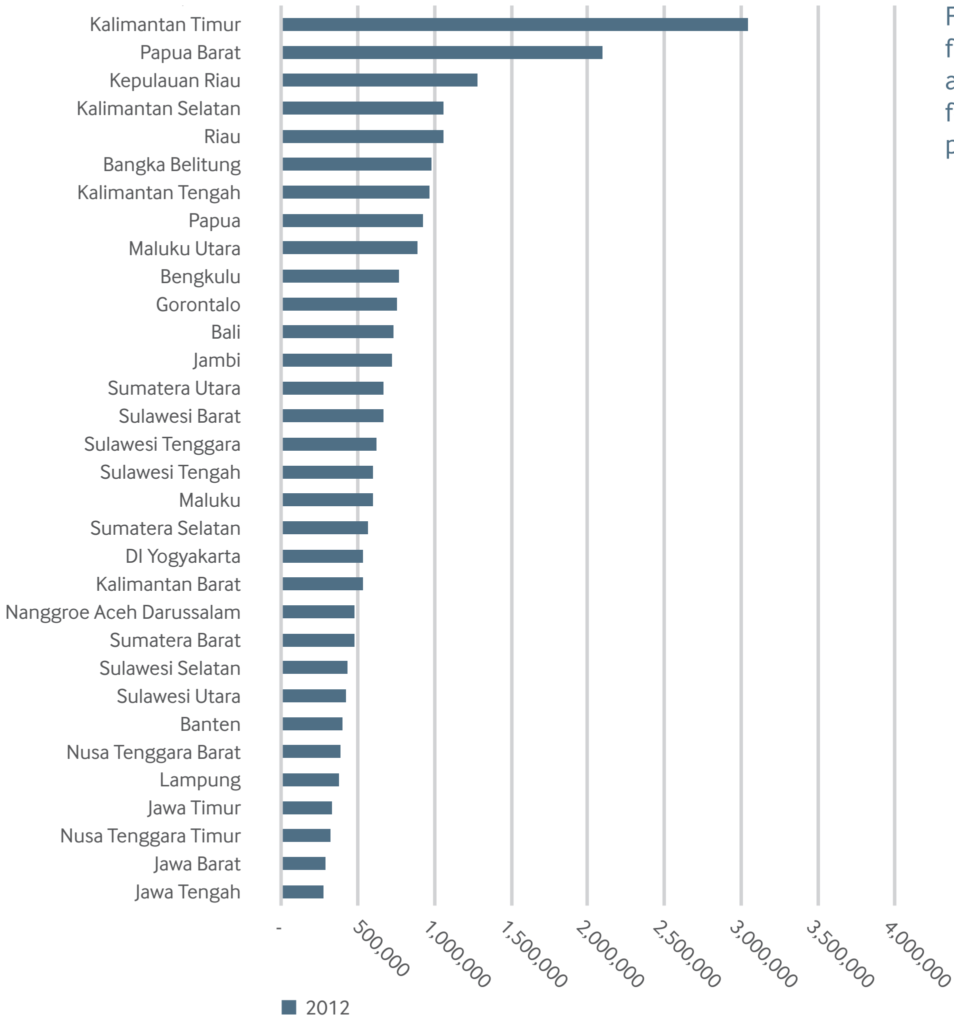


Figure 9. Aggregate funding of provincial, city and district governments for each provincial region, per person in 2012[26]

26 NRGI regional government funding dataset. This is the total government funding provincial, district and city governments in a province divided by the province population. Total funding includes the components of the fiscal balance fund and locally collected tax revenue (PAD).

The DAU component of the Fiscal Balance Fund is the primarily means to reduce this inequality. It is meant to balance funding across Indonesia so that those who have greater natural resource wealth or who collect large amounts from local tax bases receive less DAU revenue than those that generally have poorer indicators of social welfare.

Figure 10. The DAU formula[27]

DAU = Basic Allocation *plus* **Fiscal Gap**

Basic Allocation = Total salaries of government staff

Fiscal Gap = Fiscal Needs *less* **Fiscal capacity**

Fiscal Needs = $\alpha 1PI + \alpha 2ASI + \alpha 3HDI + \alpha 4CI + \alpha 5GRDPI)$

PI = Population index

AS = Area Size Index

HDI = Human Development Index

CI = Construction price index

Fiscal Capacity = PAD + DBH

In theory, in following the formula shown in figure 10, DAU payments to governments should result in total funding being negatively correlated the gross regional domestic product per person of each region, and negatively correlated with the human development index measure of each region.

We made two plots. In our first plot, we plotted the average DAU funds received by to each regional government against three measures of social welfare: GDP per person (figure 10), and Human Development Index (figure 11). While not expressed in the DAU formula we also compared funding against the poverty rate (figure 12) in each region.[28] As with previous charts, we have separated the data between government types: district (kabupaten), city (kota) and provincial governments.

We found stronger relationships in the direction that we expected: in general, governments got more DAU funds if their regions had higher rates of poverty and lower amounts if their regions had higher GDP per capita and higher HDI measures.

However, while the DAU mechanisms balance welfare to some extent, it is not enough when the other elements of regional government funding are included. This means that the fiscal balance fund overall appears to be failing to rebalance welfare across Indonesia. To show this, we measured the correlation of these variables against total funding (Fiscal Balance Fund) we found the relationships to be far less strong. For local governments—districts and cities—we found that total funding from the fiscal balance fund was uncorrelated with GDP per person and the human development index measure. For all governments, there was a positive correlation with poverty ratios, suggesting the DAU balances funding in favor of poorer regions. However, there was weaker relationships with the other variables we compared. For provincial governments, there was no correlation with human development, but there was a positive correlation with GDP per person.

27 The coefficients for the fiscal needs formula are not publicly available. We understand these can change over time.

28 We have shown the total funding and GDP per person values in log terms. This effectively shortens the range of values on the chart to help us visualise the spread of data points more easily. The correlation statistics are shown for the values without the log transformation.

This implies that rich provinces are likely to receive larger amounts of funding than poorer provinces. In this respect too, the DAU formula does not appear to be balancing Indonesians' welfare.

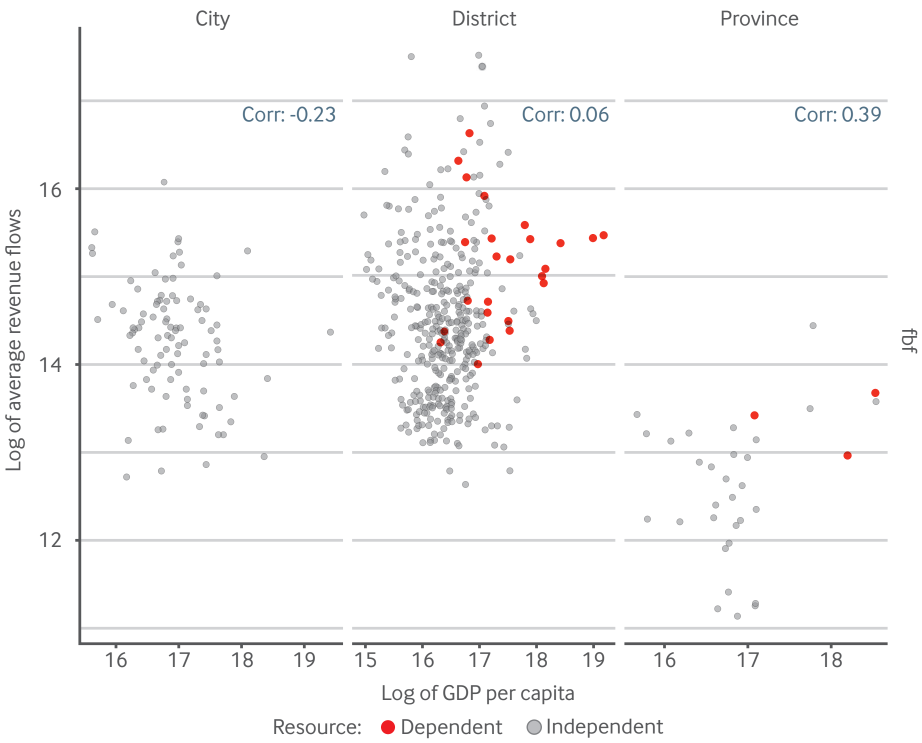


Figure 11. Fiscal Balance Fund revenues compared with GDP per person[29]

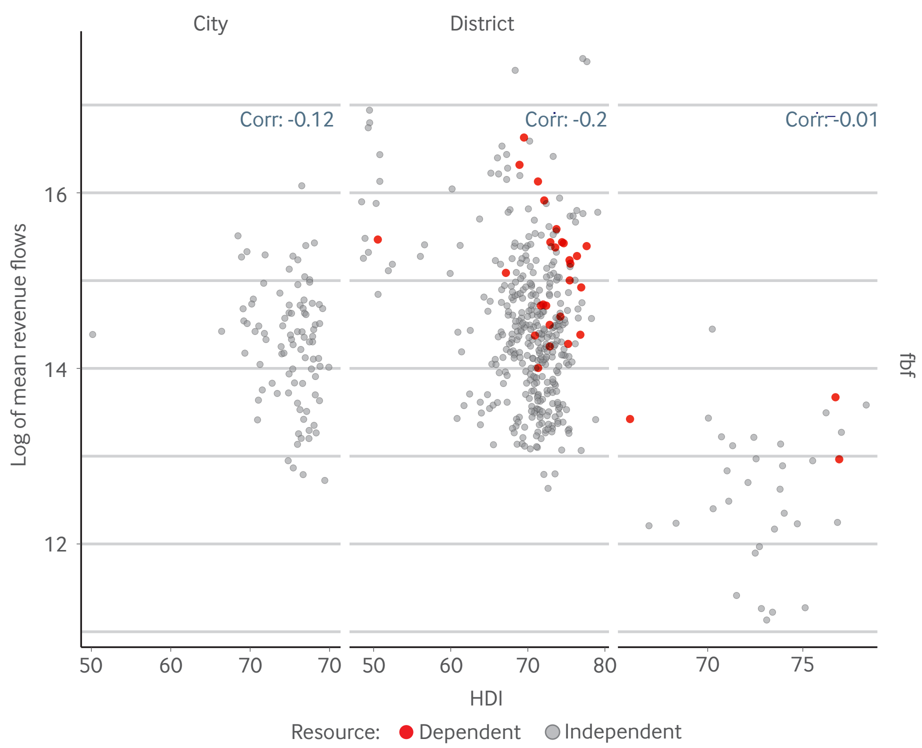


Figure 12. Fiscal Balance Fund revenues compared with HDI[30]

29 NRGI regional government funding dataset. Red dots represent regions in which oil, gas or mining represents more than 40% of regional GDP.
30 *Ibid.*

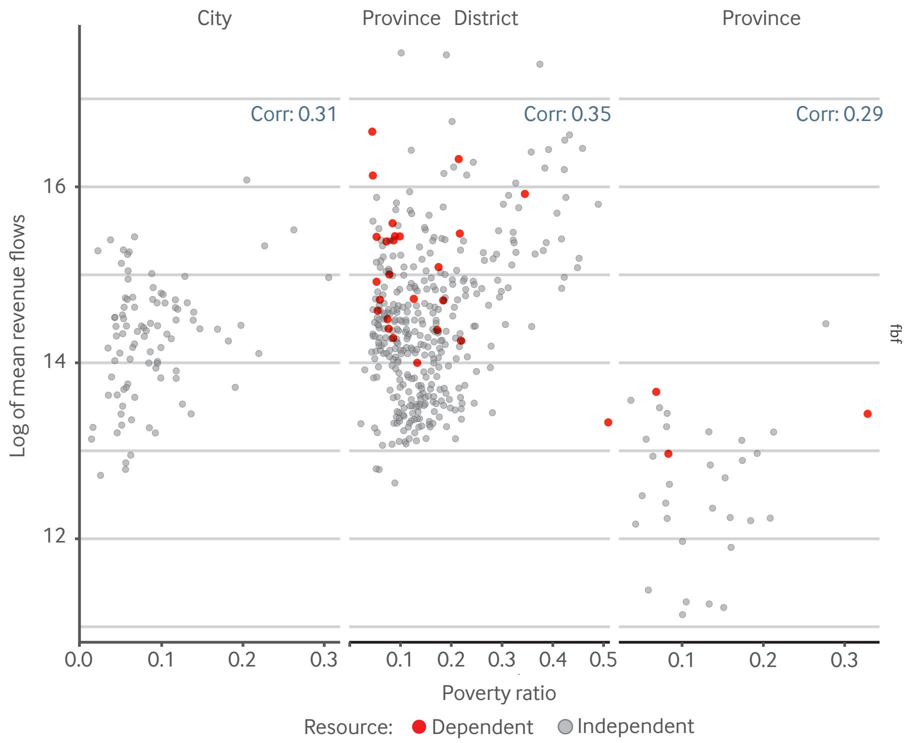


Figure 13. Fiscal Balance Fund revenues compared with poverty ratios[31]

We examined why the Fiscal Balance Fund does not appear to balance funding to reduce inequality.

The part of the DAU formula that is meant to create this balancing effective is the fiscal gap. This is the difference between fiscal needs and fiscal capacity. (See figure 10.) We do not have information on precisely how the fiscal needs element is calculated but we assume it stays approximately constant from one year to the next.[32] Most of the elements in the Fiscal Needs formula—GDP per capita, HDI, geographic size and population—are generally not subject to large changes. Fiscal capacity is the sum of locally collected revenue and DBH revenues. If fiscal needs stays constant, then when these revenues are small, the fiscal gap should be large. When these revenues are large, the fiscal gap should be small. In fact, we think that when revenues are very large, the fiscal gap can be negative. This then is the balancing effect.

However, this effect might not happen if either the basic allocation or the fiscal needs elements also change and therefore counteract the balancing effect. While we do not have information on the basic allocation and fiscal needs components, we can infer their combined value as we know the other elements of the DAU formula. Figure 14 shows a plot of the fiscal capacity per person against the inferred combined value of the basic allocation and fiscal needs values for each local government. In the second panel, we have transformed these values using a log function to more clearly show the relationship.

31 *Ibid.*
32 The missing information relates to the coefficients of the fiscal needs formula. Therefore we cannot tell the respective weighting of each of the components: population, area, human development, etc.

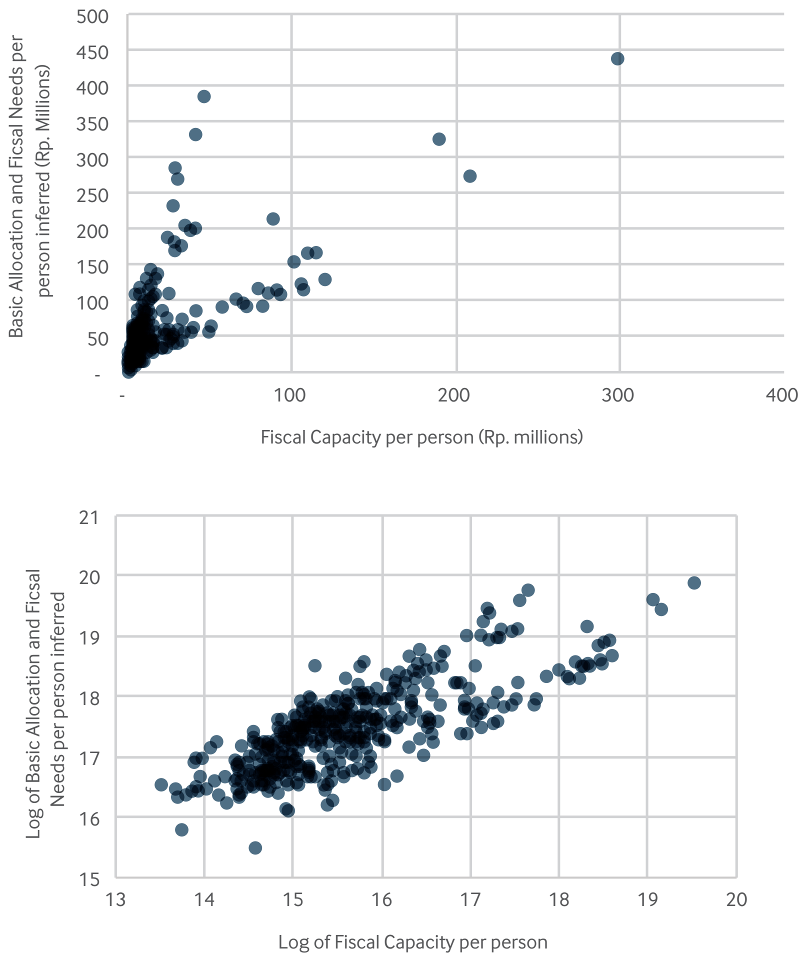


Figure 14. Fiscal Capacity (PAD plus DBH) against an inferred estimate of basic allocation and fiscal needs per person in each local government[33]

There is a strong, positive relationship between the two parts. The larger the fiscal capacity of a local government (specifically, the larger its DBH and PAD revenues) the larger the combined value of basic allocation and fiscal needs.

2.2 UNPREDICTABLE AND VOLATILE FUNDING FOR SOME REGIONAL GOVERNMENTS

Government bureaucrats find it difficult to spend effectively if their funding is erratic and unpredictable. Even if bureaucrats can predict what next year's revenue will be, if the deviation from their predictions is significant, their bureaucracies may not be able to cope with the shortfall. Unfortunately, oil, gas and mineral markets are notoriously volatile, and across the world, governments that have relied heavily on the payments from these industries have found the resulting volatile revenues difficult to manage.[34]

33 NRGI regional government funding dataset

34 There are four reasons for this: 1) Rapid increases in revenue force governments to quickly increase spending, but their bureaucracy might not adjust effectively, leading to poorly conceived, designed and executed projects. 2) Unexpected declines in revenues force governments to respond by borrowing unsustainably or cutting expenditures, leading to half-finished roads, unmaintained buildings or public sector layoffs. 3) Unpredictable revenues make planning more difficult, as ministries and social programmes can't predict how much money their will have in the future. 4) Volatile revenues often lead to volatile spending, which leads to volatile demand for businesses. If revenues are based on the fluctuations in the local economy, this effect amplifies the economic boom and bust cycle.

We measured how volatile government funding is in Indonesia. We collected the total amount of revenue for the past 20 years received by the 470 districts (kabupaten), city (kota) and provincial governments in Indonesia, and measured how volatile/predictable these revenues had been from one year to the next. The chart below shows our results. Each dot represents a regional government, and the three panels split the three types of government. Red dots show regional governments that derive at least 20 percent of their funds from oil, gas or mineral industries. The position of a dot in each panel shows the measure of revenue volatility: a low dot shows very volatile funding for a government, a high dot shows less volatile funding.

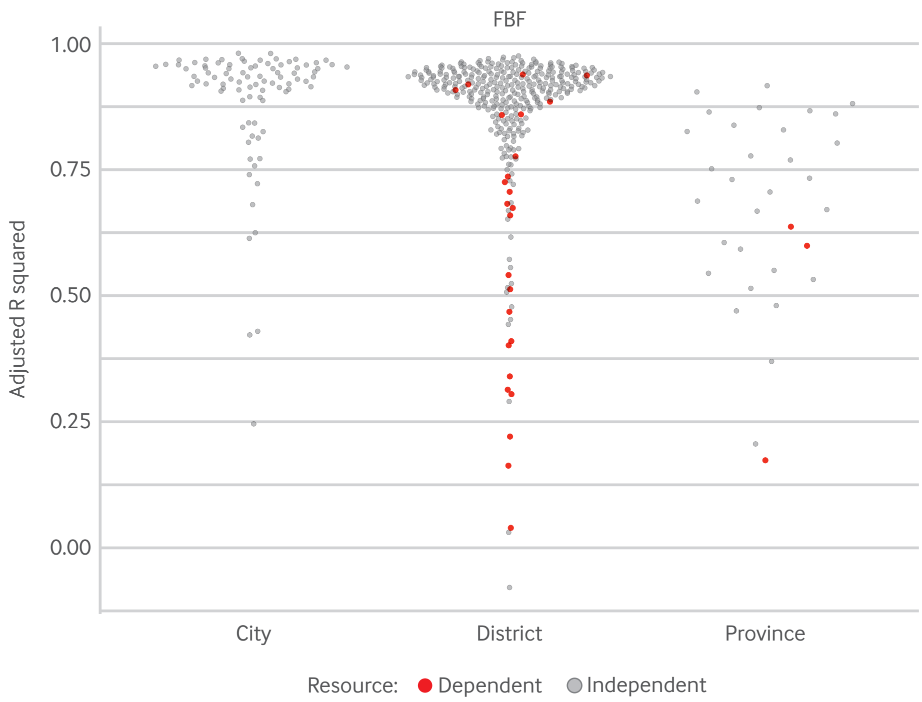


Figure 15. The predictability of total funding for provinces, districts and cities with resource-dependent governments in red[35]

The vast majority of districts and city governments receive fairly predictable funding. However, a small minority do not, and most of these derive a large portion of their funds from either oil or gas. (Few mineral-rich regions suffer from the same problem). This is partially the result Indonesia's practice of sharing revenues from extractive industries who operate in inherently volatile markets.

Provincial governments—whether rich in resources or not—received more volatile funding than most district and city governments. This surprised us because as provincial economies are larger than district and city economies, we expected their funding sources to be more diversified and therefore less subject to large changes. Instead, we discovered that two specific types of funding caused most of this volatility: the DAU and DAK components. The DAU is governed by a

35 Ibid. Red dots represent regions in which oil, gas or mining represents more than 40% of regional GDP. This analysis misses locally collected revenues (PAD) from 2013 to 2017 as the data was not available for this research. However, future research could incorporate this, by using the data from APDB. Volatility is measured as the R squared from regressing years on the value of revenue transfers. R square is a measure of how close the data fits a line estimated by a regression model. This regression produces a line that best fits the actual transfers from year to year. We assume that each regional government predicts the next year's revenues based on this linear trend. Therefore, the closer this line fits the data of actual transfers, in other words, the higher the R square, the more we can say transfers are predictable.

formula that should result in a relatively stable stream of funds each year. However, there was insufficient information on how this formula has been applied to each regional government, so we could not examine further why the DAU has been volatile. The DAK is by its nature volatile—the national government grants this money to fund specific projects in regions, and in recent years has granted larger shares to provincial governments. Examining how the DAU and DAK portions of governments' funds are transferred may help resolve some of provincial governments' problems in this area.

Another way regional funding is erratic appears to be the sometimes-large differences between the amounts the national government said it would pay (during each budget period) and the amounts that it actually did pay. The quality of data on budgeted amounts is far worse than the data on actual payments, so we cannot conclude how problematic this is. However, in examining two types of payments—DAU and natural resource DBH—we found that in some years, actual transfers were about 22 percent greater or less than what had been expected in the budget.

Table 1. Average discrepancy between budgeted and actual amount received[36]

Government level	DAU	dbhNR
Province	Poor data	19%
Local government	23%	24%

Regional governments in Indonesia can mitigate the worst effects of revenue volatility by saving when they have surplus revenues and drawing down these savings when they are in deficit. (See box 1).[37] However, they are limited to only saving in domestic bank accounts, lending to other governments in Indonesia, or investing in businesses in their own regions. Unlike the national government, they cannot save and invest in foreign assets. This means that when in surplus, regional government revenue goes to the local economy, and when in deficit money, is withdrawn. Although we did not examine the macroeconomic effects of this, it is likely that volatile regional government revenues can lead to volatility in their local economies.

This effect is exacerbated if volatile revenues leads to a boom and bust of government spending. Since the government is often a main source of large private-sector contracts, government spending volatility which matches the boom-bust cycles in the local private sector can exacerbate these cycles. This is called 'pro-cyclical' fiscal policy. As a result, businesses grow and proliferate when government expenditures are high, but often make similarly poor investment choices and do not always plan for the future. This makes them particularly vulnerable to government spending cuts, leading to bankruptcies in the wider economy when resource revenues decline.

36 Ibid. The data appears to have a high number of errors, so we ignored any discrepancies above 50 percent. Data on budgeted and actual DAU transfers to provinces also appears to be problematic, so we excluded this calculation too.

37 Blane D Lewis, "Twelve Years of Fiscal Decentralization: A Balance Sheet," *Regional Dynamics in a Decentralized Indonesia,* (2014): 135–55.

Box 1. Saving and borrowing by regional governments

Regional governments' ability to mitigate the risks of volatile revenues is more restricted than the national government. As is common across most other countries in the world.

Since most types of transfer are not tied specifically to spending programs, it is possible for regional governments to receive funding that is surplus to the annual spending plans. In these cases, governments can save this surplus in a variety of ways. In order of priority, as set in law:

1. Pay down debt.
2. Deposit in an Indonesian rupiah bank account (termed the SiLPA account). To then fund next year's spending if necessary.
3. Invest in either companies owned by the regional government (local state owned enterprises) or in small-scale business within their region.
4. Lend to another regional government or the national government.
5. Spend on social security.

Similarly, regional governments may spend more than they received in funding. Governments can fund this deficit by drawing down their savings, in order of priority, as set in law:

6. Withdraw from their bank account (SiLPA).
7. Reserve fund (used to finance a multi-year projects).
8. Profit from Local own-source assets.
9. Call in loans made to other regional governments or the national government.
10. Credit payment.

2.3 SOME OIL- AND GAS-RICH REGIONS HAVE NOT SUFFICIENTLY PREPARED FOR A FUTURE WITHOUT EXTRACTIVE RESOURCE REVENUE

The last challenge to regional governments that we investigated is how governments rich in oil, gas and minerals might fare once their resources have depleted or if the value of those resources shrinks.

Both of these possibilities should be serious concerns for regional governors. First, while globally countries have discovered more than enough oil, gas and minerals to replenish stocks, there is no guarantee that discoveries are made in the same region from where extraction already takes place.

Second, some commodities that are in strong demand today may not be in the future. The global increase in renewable energy has started to reduce the market share of fossil fuel energy—most immediately in power markets.[38] This may threaten coal and to a lesser extent natural gas. Additionally, an increasing number of governments in large consumer markets promise to ban petrol and diesel transportation in the next decade or two. If electric-powered vehicles replace oil-powered vehicles, then the global market for crude oil may also decline. While these changes are highly uncertain, they pose an extreme scenario that oil-rich regions should consider and plan in case such a future is realized.

38 Measured by actual electricity produced, renewable energy has increased significantly. By production of electricity, the International Energy Agency reports that the contribution of total electricity produced in the OECD countries by solar, wind, and geothermal rose from 2.5 percent in 2008 to 9.6 percent in 2017. International Energy Agency, *Statistics*, Accessed 1 July 2019, www.iea.org/statistics.

Whether through exhaustion or obsolescence, today's high-value oil, gas and minerals may not last. While this might be an extreme scenario, the prosperity of resource-rich regions is at risk. These threats are common in resource-rich countries, and economic advisors have developed a set of policy initiatives that may be appropriate for Indonesia. We elaborate on these in the conclusion.[39]

How resilient are regional governments and their economies to a potential fall in resource revenues? We answered this question from both a short- and long-term perspective.

In the short term, we think most regions are resilient. The recent commodity price boom and subsequent bust reveals how regions might cope with another fall in commodity values. Natural resource revenues have declined dramatically in Indonesia. Overall natural resource DBH transferred to local governments fell in real terms from 47 trillion in 2008 to 23 trillion in 2017. But this fall was highly concentrated, particularly in oil-rich districts: 90 percent of this fall affected just 33 local governments. Kutai Kartanegara regency in East Kalimantan alone saw a Rp 4.5 trillion fall in real terms, accounting for 14 percent of the total fall in revenues.

However, figure 15 shows that despite this large falls in revenue, these districts still received funds from the fiscal balance fund despite their own sources far higher than the average regional government in Indonesia. We compared the average revenue per person during the period 2006 to 2011 when resource revenues were relatively high, and during the period 2012 to 2017 when resource revenues had slumped. We calculated each as a proportion of the median revenue per person received by all other districts and city governments in Indonesia. Figure 15 shows these results for the 25 districts that experienced the largest falls in DBH revenue. Even when prices had fallen, they had funds higher than the median funding for districts in Indonesia. This suggests that, at least in the short term, oil and gas production might be large enough to generate significant revenues for district governments even if there is another large fall in prices.

39 For example, International Monetary Fund, *Macroeconomic Policy Frameworks for Resource-Rich Developing Countries* (2012) and Natural Resource Governance Institute, *Natural Resource Charter (2nd Edition)* (2014).

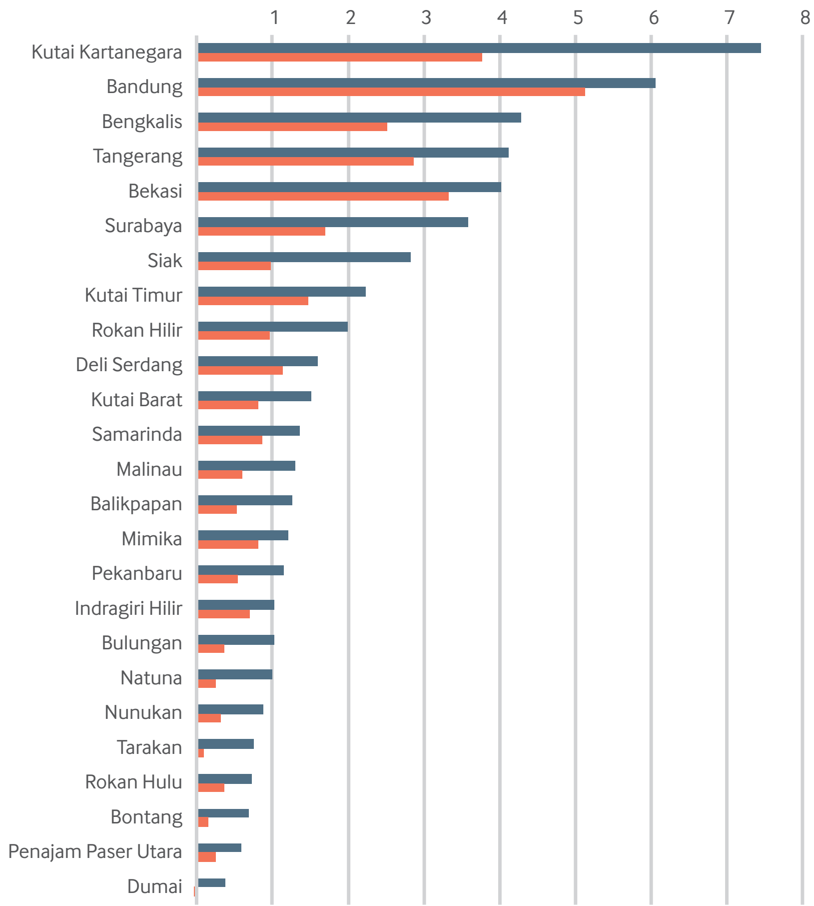


Figure 16. Multiples above the average funding per person received by resource-rich districts during and after the commodity boom[40]

In the longer-term however, regions may not be resilient. Across Indonesia, regional governments have increased the proportion of funding invested in capital projects. For example, in 2016, the average provincial government spent 19 percent of their revenue on capital projects, compared with 15 percent in 2001.[41] However, for governments receiving large amounts of funds from oil, gas and minerals, to sustain the same level of funding once their resources are depleted or fall in value requires a development of other funding sources by, in part investing those revenues to enable growth in other areas of the economy. In other words, resource-rich regions need to invest more than resource-poor regions.[42] Alternatively, the national government needs to rebalance the overall funding system to compensate for the fall in resource revenues—a rebalancing that might therefore spread the economic pain of a fall in resource revenues across a larger portion of the Indonesian population.

40 NRGI regional government funding dataset

41 We did not examine whether this funding was actually spent effectively, however. Lewis (2013) examined what regional government spent DAK transfers on between 2002 and 2009. While DAK money was spent on capital projects, the authors found each Rupiah of DAK transferred lead to 0.55 rupiah of capital spending in the social sectors, and 0.41 rupiah on capital assets like government office buildings. Only 0.31 rupiah was spent on infrastructure. Blane Lewis, "Local Government Capital Spending in Indonesia: Impact of Intergovernmental Fiscal Transfers," *Public Budgeting & Finance*, 33, no. 1 (2013): 76–94.

42 A principle often suggested for governing natural resources in similar cases is to invest a large proportion of these revenues in a way that will yield a return in the future, effectively ensuring that as a region's natural resource assets deplete, productive assets take their place. At least in economic terms, the region's total balance sheet—including both the assets above ground as well as those assets below ground—is left more or less the same. In other words, if those governments that receive a high proportion of natural resource DBH revenue were following this principle, we should expect to see a larger portion of their revenue spent on capital projects than other government.

However, figure 17 suggests that while some governments that received a large portion of their revenues from natural resources did invest more than resource-poor governments, many did not. To show this, we compared two measures for each regional government: the proportion of a government's funding derived from natural resources (i.e., the natural resource DBH), and the proportion of capital expenditure to total expenditure of the government. Figure 16 shows this plot for provincial governments and local government (districts and cities).[43]

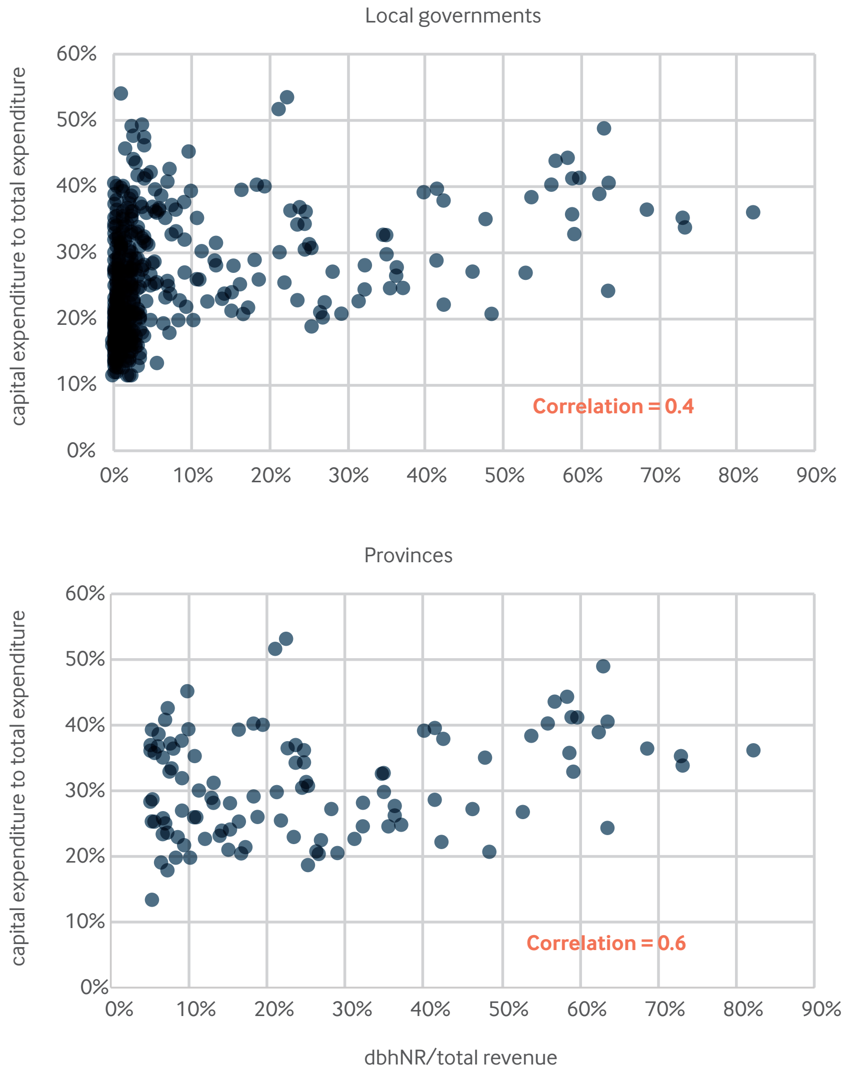


Figure 17. Comparison of the share of natural resource DBH in total revenues and share of capital expenditure in total expenditure for provincial and local governments[43]

Provincial governments show a stronger relationship between receiving a large share of resource revenues and investing in capital projects compared with local governments. The correlation between these two measures is 0.6 for provincial governments, and 0.4 for local governments. This suggests that while some resource-rich regional governments are investing a relatively large amount of their funds, some district governments are not. Consequently, without higher investment these regions might not be able to maintain the level of revenues they currently enjoy, and by not investing oil revenue sufficiently, in the future, the rest of Indonesia might have to share more of its regional government funds with these oil-rich regions.

43 NRGI regional government funding dataset

3. Recommendations

RECOMMENDATIONS REGARDING STRATEGY AND POLICY

1. Clarify the objectives of the fiscal balance fund and establish objectives for the entire set of transfer processes

We established that the current set of objectives directing the fiscal balance fund are not clear, overlap and conflict (achieving one objective is likely to lead to not achieving another). They were also incomplete, both in terms of not covering the entire system of transfers and regional government funding, as well as leaving out principles that the central government is implicitly following– specifically that revenues from extractive sectors are being shared on the basis of derivation. This is important as these other practices conflict with the objectives laid out for the fiscal balance fund.

Having a clearer set of objectives can help all stakeholder understand what the system is meant to do, compare this with what is actually happening, and understand what trade-offs authorities must make between these objectives.

2. Provide reliable funding when sharing resource revenues when possible and support regional governments to smooth expenditures (to follow objectives 3 and 4 of the FBF)

We found that the funding from the central government's transfer of funding to some regional governments was highly volatile. Although we did not investigate the impact of this, we know from other countries' experiences that this leads to poor quality spending.

Some of this volatility relates to the practice of sharing extractive resource revenues with regional governments. District governments, whose overall non-extractive revenue budgets are relatively small, are particularly susceptible to fluctuations in commodity prices, which generate a large impact on their total revenues each year. Given that the central government is implicitly following an objective to share resource revenues by derivation that may conflict with some of the other objectives, providing a more stable source of revenues is not possible. This shows the trade-off the Indonesian government faces: citizens in resource-rich areas receive a share of the resources extracted from their lands, but at a potential price of poor quality government spending, and potentially more volatile economic cycles.

However, the central government could better support district governments in establishing expenditure-smoothing mechanisms so that they can better manage their resource revenues and mitigate boom-bust cycles. This might include reviewing the rules on how regional governments can save revenues from one year to the next, and the mechanisms to ensure these revenues are well managed by regional governments.

3. Support resource-rich regions to become resilient to commodity price slumps by better investing in their economies and expanding their tax bases (following objectives 3 and 4 of the FBF)

Revenue from non-renewable resources like oil, gas and mineral should be treated differently from revenues from other sources. As they represent the proceeds from a depleting resource, governments should invest a high proportion back into the economy to ensure that the region's wealth grows over time rather than falls. While some regional governments, particularly provincial governments receiving large amounts of extractive industry revenues are investing a relatively high proportion of their total revenue in their economies, a large number, notably many district governments are not.

Failing to do this will mean that if their extractive resources run out, regional governments will have to radically adjust their spending programs, or rely on transfers from elsewhere in Indonesia. With the DAU rules as they are, the latter case will occur by default, but this means other regions sharing a greater amount of their own transfers.

RECOMMENDATIONS REGARDING TRANSPARENCY

1. Make data available in a format that eases analysis, and is free of errors

The funding of regional governments is relatively transparent. The publications that informed our database contain vast amounts of data that can inform regional governments and oversight investigations, although the form in which these data are published could be improved by making them available in a spreadsheet format (e.g., a .csv format).

We also found numerous errors with the data, which if cleaned could help government officials and other analysts investigate the data and provide the data.

2. Clarify and publicize rules on transfers (following objectives 3 and 4 of the FBF)

Further, the rules under which the DAU transfers are made could be clarified and made public. Specifically, publicizing the coefficients that govern the respective weighting of components to calculate the fiscal needs of each regional government, and the values used for each of these components (population index, area size, human capital index and construction price index).

ISSUES REQUIRING FURTHER INVESTIGATION

Our report is at best an introduction to what is one of the most complex systems of regional government funding in the world and is deliberately incomplete. To ensure Bappenas's reforms are holistically informed, we recommend further investigation across all topics related to regional government funding, but specifically the following areas:

1. Review the formulation of DAU to ensure transfers are equitable in the context of differing fiscal needs (to follow objective 2 of the FBF)

Related to the need to be more transparent on the rules governing transfers, we found some evidence suggesting that the some components of the DAU formulation may be overly inflated for some regional governments, which results in transfers that do not balance against large increases in revenues from extractive industry payments. This may be resulting in highly unequal transfers to governments and a failure to achieve the government's second objective for the fiscal balance fund. Some of this result may be due to data errors, but we think the result significant enough to merit further investigation.

2. Investigate whether funding follows function (to follow objective 1 of the FBF)

Although we did not explicitly evaluate whether the current system ensures that the changing responsibilities of regional governments are appropriately funded, it is a core principle of any inter-governmental transfer system. Investigating this aspect could be useful for Bappenas.

3. Investigate the effectiveness of regional government spending

Whether regional government spending is effective is a particularly important issue. As larger amounts of money are transferred to regional governments, and more to the lowest levels of government that may have the least capability to manage these funds, understanding how regional governments are spending this money is crucial.

Appendix. Regional government funding in detail

FISCAL BALANCE FUND

The Fiscal Balance Fund (FBF) is comprised of three components: the general allocation fund (*Dana Alokasi Umum*, DAU), special allocation fund (*Dana Alokasi Khusus*, DAK) and revenue sharing fund (*Dana Bagi Hasil*, DBH). Although originally conceived as a fund to supplement regional governments' own tax collection (the PAD), the amounts transferred quickly became much larger than the amounts governments collected themselves.

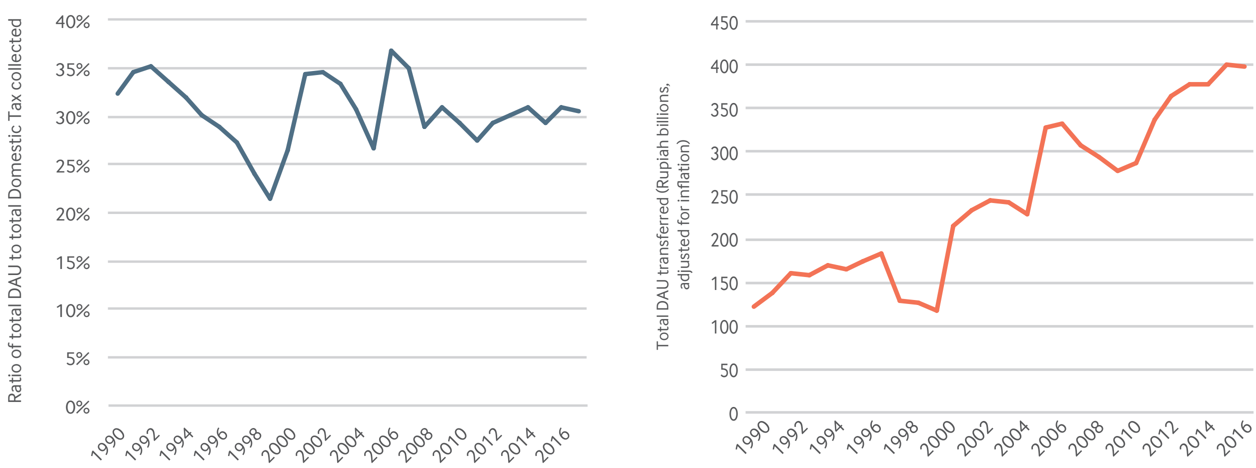
DAU

DAU holds the largest amount of money—Rp 324 trillion in 2017. The central government transfers DAU amounts to both provincial and local governments, with most going to local governments. There are currently three stages to determine how much DAU each government should receive.

Stage 1. Define the total amount of money available for the DAU transfer

The central government is obligated to transfer at least 26 percent of national net domestic income. Parliament enacts a law each year to determine the exact share. Since 2001, on average the share has been 31 percent. (See figure 18.)

Figure 18. Proportion of DAU to national net domestic income, and absolute amount of DAU transferred[44]



44 NRGI regional government funding dataset

Stage 2. Determine share of total between all provincial and all local governments

Having determined the total amount of DAU to be allocated, the second stage is to share this amount between provincial and local governments. As with the total share of domestic income to be allocated as DAU, parliament enacts a law each year to determine this second share.

Table 2. Changes to provincial and local government share of DAU

Year	Provincial government share	Local government share
2017	10 percent (GR 55/2005) Additional DAU because of additional affairs for IDR. 15.4 trillion (Law on National Budget 2017)	90 percent (GR 55/2005) Additional DAU to prevent budget deficit for IDR. 4.8 trillion (Law on National Budget 2017)
2018	14.1 percent (Law on National Budget 2018)	85.9 percent (Law on National Budget 2018)
2019	14.1 percent (Law on National Budget 2019)	85.9 percent (Law on National Budget 2019)

Stage 3. Determine transfers for each provincial and local government

A formula (see figure 19) determines this stage. DAU transferred to each government is a sum of two components: basic allocation and fiscal gap.

Figure 19. The DAU formula

DAU = Basic Allocation ***plus*** **Fiscal Gap**

Basic Allocation = Total salaries of government staff

Fiscal Gap = Fiscal Needs ***less*** **Fiscal capacity**

Fiscal Needs = $\alpha 1PI + \alpha 2ASI + \alpha 3HDI + \alpha 4CI + \alpha 5GRDPI)$

PI = Population index

AS = Area Size Index

HDI = Human Development Index

CI = Construction price index

Fiscal Capacity = PAD + DBH

The basic allocation is the total of government official salaries in the regional authority. The Ministry of Administrative and Bureaucratic Reform records the staff costs of each regional government and uses this information to calculate the basic allocation. The fiscal gap is the difference between fiscal needs and fiscal capacity. The fiscal need component is currently determined by this formula.

> *Fiscal Needs = average of total expenditure by government * (α_1. population index + α_2. size of region index + α_3. construction price index + α_4. human development index + α_5. gross regional domestic product per person)*

Each of the alpha coefficients α1 to α5 weigh the respective measures. These weights are determined by Ministry the Indonesian office of Finance based on Williamson index and data provided by statistics (BPS) each year. However, these are not available to the public.

The fiscal capacity is the sum of all locally collected revenues (PAD) and all DBH revenues received by the regional authority. In some cases, this amount can be much larger than the other components of the DAU.

Earmarking of DAU

Before 2016, regional governments were able to spend their DAU and DBH to finance their expenditures in any sector. This resulted in high amounts spent on administration and government salaries.[45] Consequently, from 2016, the central government ruled that provincial and local governments should spend at least a quarter of DAU and DBH revenue combined on infrastructure.[46] This is in addition to the DAK revenue that the national government also provides for infrastructure spending.

DBH

Compared with the complex DAU transfer, DBH is a relatively simple share of specific tax bases. For all provinces except Aceh, Papua and West Papua, taxes from natural resource production and some other tax bases collected within the local government jurisdiction are shared between the local government, the other local governments in the province, the provincial government and the central government. (See figure 20.)

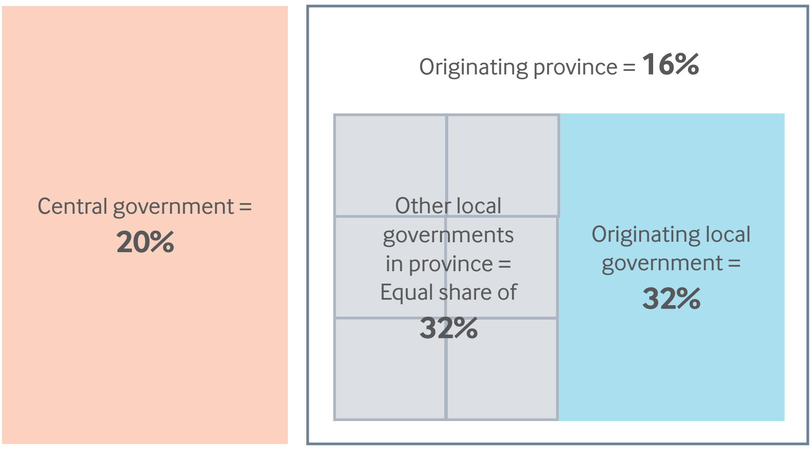


Figure 20. Illustration of DBH share of mining royalty in a province (not drawn to scale)[47]

45 Investor Daily Indonesia, "Harus Dialokasikan untuk Belanja Infrastruktur (Transfer fund to spur regional development)," 4 August 2017, investor.id/archive/harus-dialokasikan-untuk-belanja-infrastruktur.
46 Government of Indonesia, *President Regulation 107 on Details of National Budget 2018* (2017) and Government of Indonesia, *President Regulation 137 on Details of National Budget 2017* (2015).
47 Government of Indonesia, *Law 33 concerning the Fiscal Balance between Central and Subnational Government* (2004).

The shares differ according to the type of tax. Revenues from mining, forestry and property tax are mainly transferred to the local governments. Conversely, revenue from oil, gas and personal income are primarily kept by the central government, although the large values of oil and as revenue mean that the local governments involved still receive substantial amounts. Unlike other sources, revenue from oil and gas are partially earmarked. Half a percent (0.5) of revenues must be spent by regional governments specifically on education.

Table 3. DBH Natural resource and tax (percentages)[48]

Revenue Source	Central government	Originating provincial government	Originating local government	All local governments in originating province	All local governments (equal share)
Tax revenue					
Personal income tax	80	8	12	0	0
Property tax	9	16.2	64.8	0	10
Property transfer tax	0	16	64	0	20
Excise revenue					
Excise	98	0.5	0.8	0.6	
Natural Resources					
Mining land rent	20	16	64	0	0
Mining royalty	20	16	32	32	0
Forestry license	20	16	64	0	0
Forestry royalty	20	16	32	32	0
Fishery royalty	20	0	0	0	80
Geothermal mining	20	16	32	32	0
Oil base rate	84.5	3	6	6	0
The remaining 0.5 percent: earmarking for education expenditure	0	0.1	0.2	0.2	0
Natural gas Base rate	69.5	6	12	12	0
The remaining 0.5 percent: earmarking for education expenditure	0	0.1	0.2	0.2	0

48 Adapted from Nasution, "Government Decentralization Program in Indonesia." Amounts may not sum to 100 percent due to rounding.

Elements of the FBF for special autonomy provinces: DBH shares and special autonomy fund

Three of the provinces with special autonomy status—Aceh, Papua and West Papua—receive a different share of DBH revenue to other provinces, and an additional transfer of revenues. Table 4 shows the DBH shares transferred to these provinces, the remaining share for each province remains with the central government. The provincial governments of Aceh, Papua and West Papua then share these amounts with authorities within their jurisdictions– it is a different system of sharing DBH to that shown in table 3 shown above.

Table 4. DBH for the Special Autonomous Provinces[49]

	Aceh (percent)	Papua and West Papua (percent)
Tax revenue shares		
Personal income	20	20
PBB	90	90
BPHTB	80	80
Excise	2	2
Natural resource revenue shares		
Share of government oil	15	70
Share of government gas	30	70
Land rent	80	80
Mining royalty	80	80
Fishery	80	80
Forestry Right to Operate Levy (IHPH)	80	80
Forestry Resources Commission (PSDH)	80	80
Reforestation fund	40	40

49 Nasution, "Government Decentralization Program in Indonesia."

Special Autonomy Fund

In addition to larger shares of DBH revenues, the provinces of Aceh and West Papua also receive a further 55 percent and 40 percent respectively of oil and gas revenue (after tax). This amount is additional to oil and gas revenue sharing. However, we could not ascertain how these percentages relate to the actual shares of production of oil and gas companies. For instance, since the DBH shares described in table 4 provides Papua and West Papua 70 percent of the government's share of oil and gas production, it is not possible for West Papua to receive a further 40 percent as part of the special autonomy fund.

The laws also state that the minimum amount of special autonomy funds for these three resource-rich provinces is 2 percent of the total national DAU, but it is also not clear how this relates to the shares already mentioned.[50]

The national government earmarks these amounts. According to Aceh Government Law, 30 percent of the special autonomy fund must be spent on education, and the remaining 70 percent on other development programs.[51] However, we could not ascertain from the law to what types of spending this refers.

Subsequently, the minimum amount of special autonomy fund for these three resource-rich provinces respectively is 2 percent of the total national DAU.[52]

While Aceh Province has never earmarked the allocation of this fund, the Papua and West Papua Provinces also earmark these funds: 30 percent for education and 15 percent for health and nutrition improvement.[53]

DAK

Special Allocation Fund (DAK) are allocated based on decisions to fund specific capital projects. Three criteria govern this choice. General criteria takes into account the financial ability of regional governments, much like the fiscal capacity component of the DAU formula. Special criteria take into account local characteristic such as whether the province is located near the state border or whether the province is located in remote area. Finally, the technical criteria takes into account the criteria as set out by the technical Ministries.

The 2017 Minister of Finance regulation further stipulates the DAK as part of a balance fund which consists of a) physical DAK and b) non-physical DAK.[54] For the former, Bappenas plays an important role to submit the proposal to the Ministry of Finance in regard to the allocation of physical DAK. Bappenas' proposal is based on the programs/activities based on national priorities, complete with the proposed locations and cost estimation.

50 Government of Indonesia, *Law 11 concerning the Aceh Government* (2006)
51 *Ibid.*
52 *Ibid.*
53 Government of Indonesia, *Law 21 concerning the Special Autonomy Province of Papua* (2008).
54 Government of Indonesia, *Minister of Finance Regulation 50 concerning the Management of Regional Transfer and Village Fund* (2017).

INCENTIVE FUND

Comprises of teacher allowance, school operational assistance fund and incentive fund as stipulated by Regional Government Law.

VILLAGE FUND (ALSO KNOWN AS RURAL FUND)

The national government established the village fund in 2015 to develop Indonesia's "periphery," prioritizing rural development and community empowerment. From 2018, the national government has set the total amount to be transferred as the village fund at 10 percent of all transfers made to regional governments. Prior to 2018, the share was 3 percent in 2015, 7 percent in 2016 and 8 percent in 2017.

The law regulates the central government to transfer the village fund annually to these autonomous villages as one of their sources of revenue through district or municipality budgets.

LOCALLY SOURCED FUNDS (PAD)

Revenue collected by regional governments themselves is known as PAD. Regional governments collect PAD based on the law on regional government taxes and retributions (law on local taxes) which is being translated into the respective regional government bylaws.[55] There are three components of PAD which are:

1 Province or district taxes
2 Province or district retributions
3 Other lawful local revenues

55 Government of Indonesia, *Law 28 concerning Local Taxes and Charges* (2009).

The law on local taxes divides the kind of taxes and retributions for province and district level as shown by the table below.

Table 5. Tax bases collected by type of regional governments under PAD

Types	Province	District/City
Taxes	1. Motor vehicle 2. Transfer ownership of motor vehicle 3. Fuel of motor vehicle 4. Surface water 5. Cigarette	1. Hotel 2. Restaurant 3. Advertising 4. Street lighting 5. Non-metallic minerals and rock 6. Parking 7. Ground water 8. Swallow's nests 9. Rural and urban land and building 10. Right on land and building transfer
Fee income	Public services: 1. Health/medical services 2. Garbage disposal/cleanliness 3. Compensation of printing 4. Burial and cremation services 5. Parking services at sides of public roads 6. Market services 7. Motor vehicle testing 8. Inspection of firefighting equipment 9. Compensation of printing maps 10. Supply and/or suction of toilets 11. Liquid waste management/processing 12. Calibration and re-calibration services 13. Education services 14. Telecommunication tower control	
	Business Service: 1. Utilization of regional assets 2. Wholesale markets and/or shops 3. Auction venues 4. Terminals 5. Parking spaces 6. Hotel/lodgings/villas 7. Animal slaughterhouses 8. Port services 9. Recreational and sports centers 10. Water crossing 11. Sale of products of regional businesses.	
	Certain permits: 1. Building construction 2. Venue selling alcoholic beverages 3. Disturbance 4. Routing 5. Fishery business	

References

Aziz, Abdul. "Perda Bermasalah Kini Tidak Bisa Ditertibkan Mendagri." Tirto, 6 April 2017. tirto.id/perda-bermasalah-kini-tak-bisa-lagi-ditertibkan-mendagri-cmgg

Bank of Indonesia. www.bi.go.id/en/statistik/seki/terkini/keuangan-pemerintah/Contents/Default.aspx

Bauer, Andrew, Uyanga Gankhuyag, Sofi Halling, David Manley and Varsha Venugopal. *Natural Resource Revenue Sharing*. Natural Resource Governance Institute and United Nations Development Programme, 2016. resourcegovernance.org/sites/default/files/documents/nrgi_undp_resource-sharing_web_0.pdf

Government of Indonesia. *Government Regulation No. 55 Year 2005 concerning the Balance Fund*. 2005.

Government of Indonesia. *Law 11 concerning the Aceh Government*. 2006.

Government of Indonesia. *Law 12 concerning the State Budget*. 2018.

Government of Indonesia. *Law 18 concerning the Special Province of Nangroe Aceh Darussalam*. 2001

Government of Indonesia. *Law 21 concerning the Special Autonomy Province of Papua*. 2008.

Government of Indonesia. *Law 23 concerning the Subnational Government*. 2014.

Government of Indonesia. *Law 28 concerning Local Taxes and Charges*. 2009

Government of Indonesia. Law 33 *concerning the Fiscal Balance between Central and Subnational Government*. 2004.

Government of Indonesia. *Law 6 concerning the Villages*. 2014.

Government of Indonesia. *Law on National Budget*. 2018.

Government of Indonesia. *Minister of Finance Regulation 22 concerning the Prediction of Natural Resources Revenue Sharing Fund for Oil and Gas for West Papua Province*. 2013.

Government of Indonesia. *Minister of Finance Regulation 50 concerning the Management of Regional Transfer and Village Fund*. 2017.

Government of Indonesia. *Minister of Home Affairs Circular No. 670/2788/Bangda*. 2018.

Government of Indonesia. *President Regulation 107 on Details of National Budget 2018*. 2017.

Government of Indonesia. *President Regulation 137 on Details of National Budget 2017*. 2016.

International Energy Agency. Statistics. Accessed 1 July, 2019. www.iea.org/statistics.

International Monetary Fund. *Macroeconomic Policy Frameworks for Resource-Rich Developing Countries*. 2012. www.imf.org/external/np/pp/eng/2012/082412.pdf

Investor Daily Indonesia. "Harus Dialokasikan untuk Belanja Infrastruktur (Transfer Fund to spur the Regional Development)." 4 August, 2017. investor.id/archive/harus-dialokasikan-untuk-belanja-infrastruktur

Lewis, Blane. "Twelve Years of Fiscal Decentralization: A Balance Sheet." *Regional Dynamics in a Decentralized Indonesia*. (2014): 135–55.

Lewis, Blane. "Local Government Capital Spending in Indonesia : Impact of Intergovernmental Fiscal Transfers." *Public Budgeting & Finance*, 33, no. 1 (2013): 76–94.

Ministry of Finance, LKPP. www.kemenkeu.go.id/publikasi/laporan/laporan-keuangan-pemerintah-pusat/

Ministry of Home Affairs, "Dana Perimbangan, Sumber Pendapatan Terbesar." 2 August, 2013. keuda.kemendagri.go.id/artikel/detail/24-dana-perimbangan--sumber-pendapatan-daerah-terbesar

Nasution, Anwar. *Government Decentralization Program in Indonesia*. Asian Development Bank, 2016. www.adb.org/sites/default/files/publication/201116/adbi-wp601.pdf

Natural Resource Governance Institute*. Natural Resource Charter (2nd Edition). 2014.* resourcegovernance.org/analysis-tools/publications/natural-resource-charter-2nd-ed

Natural Resource Governance Institute*. NRGI regional government funding dataset.* 2019. *[URL TO BE ADDED]*

Nugroho, Caesar Adi. "Improving Government Policy on Regional Inequality Reduction in Indonesia." *International Journal of Management and Applied Science*, 2, no. 10 (2016): 116–22.

Rystad Energy. UCUBE (Upstream Database), 2019.

Shah, Anwar, Riatu Qibthiyyah, and Astrid Dita. "General Purpose Central-Provincial-Local Transfers (DAU) in Indonesia From Gap Filling to Ensuring Fair Access to Essential Public Services for All." *Policy Research Working Paper Series*, no. 6075 (2012): 36. dx.doi.org/10.1596/1813-9450-6075.

World Bank*, Indonesia Database for Policy and Economic Research*. databank.worldbank.org/reports.aspx?source=1266&series=REV.OSRV.CR

World Bank, *World Development Indicators.* datatopics.worldbank.org/world-development-indicators/

ACKNOWLEDGMENTS

The authors wish to thank Andrew Bauer (NRGI), Alif Rezza (World Bank), Khoirunurrofik Rofik (University of Indonesia) and Amir Shafaie (NRGI) for their comments.

ABOUT THE AUTHORS

David Manley is a senior economic analyst at the Natural Resource Governance Institute (NRGI). Rani Febrianti was a legal analyst and Hari Subhash was a data scientist at NRGI at the time this report was written.