

Economic Crisis, Fiscal Decentralization and Autonomy:

Prospects for Natural Resources Management

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ECONOMIC CRISIS, FISCAL DECENTRALIZATION, AND AUTONOMY: PROSPECTS FOR NATURAL RESOURCES MANAGEMENT

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Over the last two years, Indonesia's financial crisis rapidly became an economic one, then a political crisis, then a multi-dimensional crisis affecting all aspects of society. The crisis period has been followed by many policy reforms, including most recently the laws on decentralization and autonomy. All of these changes have implications for the use, management, and sustainability of natural resources, which are a fundamental consideration for economic stability, recovery, and growth in the future. The economic crisis has increased pressure on natural resources -- Indonesia's land, seas and forests -- and is having a major effect on the use of land and incentives for its management. The decentralization laws specify how natural resources revenues will be allocated and which levels of government will manage them. The regional distribution of resource earnings will affect regional development plans, potential, growth, and equity, as well as the condition of the natural resource base for the future.

This paper provides an overview of some natural resource management issues arising from the economic crisis and the recent decentralization and autonomy legislation. The paper covers the following issues:

- Overall Effects of the Economic Crisis on Natural Resources
- Background on Natural Resources and Decentralization Laws
- Distribution of Natural Resources in Indonesia
- Implications of UU No. 25 for Natural Resource Tax Revenue Allocations

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Approach. These analyses were conducted at the national, provincial and sectoral level, using readily available, official statistics. The approach is mainly descriptive and does not rely on models or projections. "Official" data provide a consistent historical basis for comparisons of trends. They do not provide detailed understanding at the community or individual level, or in the informal or unreported sector. The results reported here focus mainly on land, forests and crops, not on urban, coastal or marine issues.

1. Overall Effects of the Economic Crisis on Natural Resources

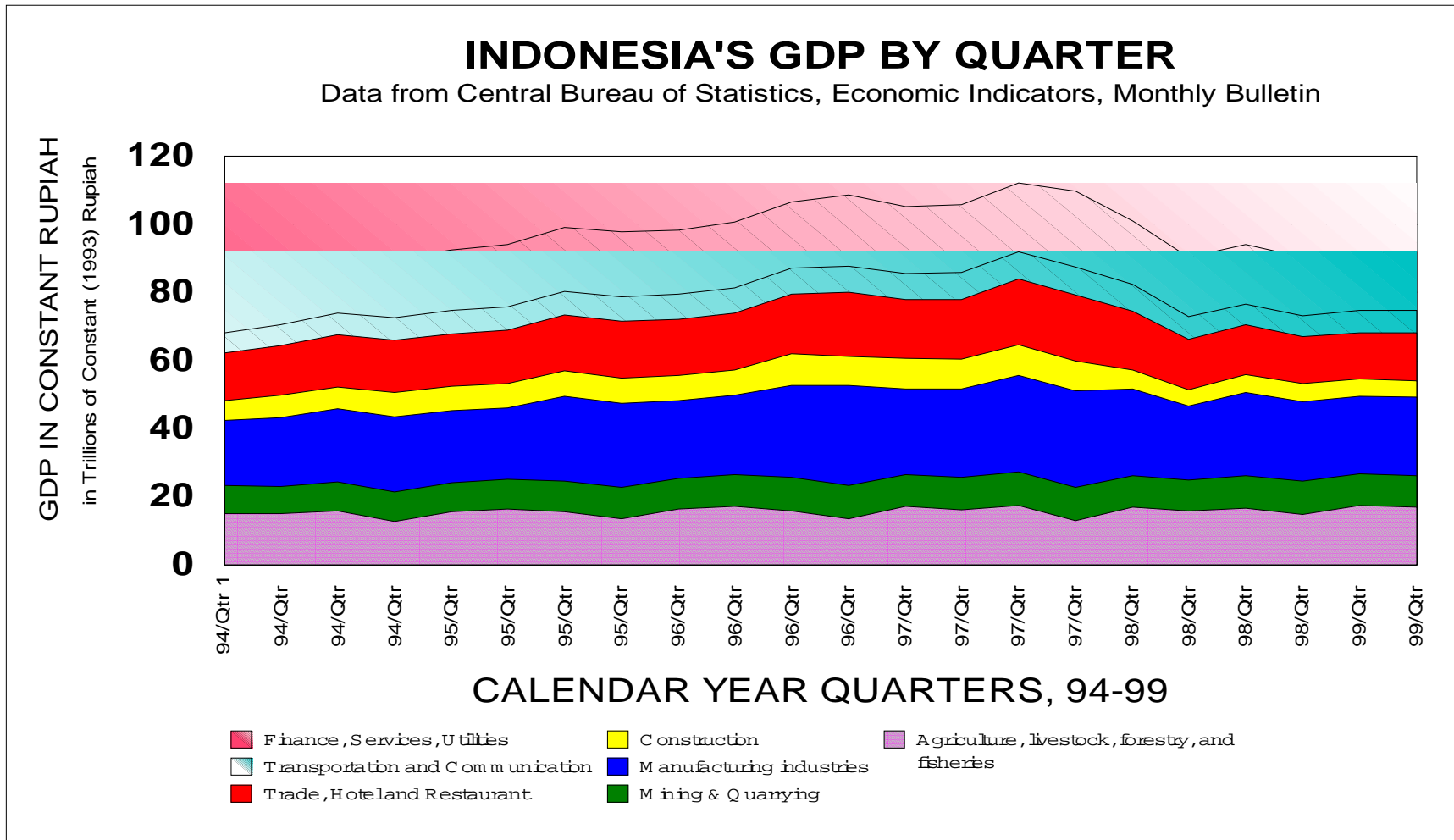
National Level (Figure A). A visual overview of the crisis indicates quarterly changes in economic activity through June 1999. This figure shows the deep drop in late 1997 and that levels have flattened out more recently. Additional figures will show that the crisis has highly variable impacts across provinces and sectors. Regional disparities will increase and imbalances in economic activity in interdependent sectors (e.g., agriculture and fertilizer) will impede recovery and growth.

Sectoral Level (Figure B). Indonesia's crisis has highly variable impacts across economic sectors. The following figure illustrates growth rates for major economic sectors through 1998. After 1997, most sectors are in steep decline. The figure shows (top line on right) that agriculture and natural resource sectors are maintaining some growth, or at least stability in the post crisis period. Growth rates in most of the other sectors were in fairly steep decline through 1998, but the level of decline ranged from about 40% in the construction sector to 10% or 20 % in the manufacturing and trade sectors.

Natural Resource Sectors (Figure C). Relative to the rest of the economy, agriculture and natural resource sectors are maintaining some growth, or at least stability, during the period of crisis. The five main subsectors are food crops, non-food crops, livestock, fisheries, and forestry. The non-food crops subsector is growing rapidly (up over 7% since 1997), and includes coconut (copra), oil palm, coffee, tea, cocoa, etc. "Fisheries" earnings are also rising, indicating pressure on coastal resources. Pressure on forest and land resources has been increasing over a 5 year trend, as indicated by forest (land) conversion which increasing annually. Although economic crisis increased activity in resource sectors, some would say that the true "crisis" in Indonesia's natural resource management has been the long term trend of increasing extraction, with little management or maintenance.

Provincial Level (Figure D). Considering these sectoral variations, the distribution of resources across islands, and the effects of devaluation on exports, it should be clear that the crisis has variable impacts across Indonesia's provinces. Export rich provinces are the resource rich islands of the West. Since resource exporters are earning more in rupiah terms due to devaluation, and government has fewer resources to maintain development spending in poorer eastern provinces, the crisis has the tendency to make the export rich provinces (mostly in the West) richer and the poor provinces (mostly in the East) poorer. The figure compares net export earnings as a share of GRDP to the government spending share of GRDP.

FIGURE A: GDP by Quarter for Indonesia's Major Sectors



B: Annual GDP Growth Rates by Major Sector

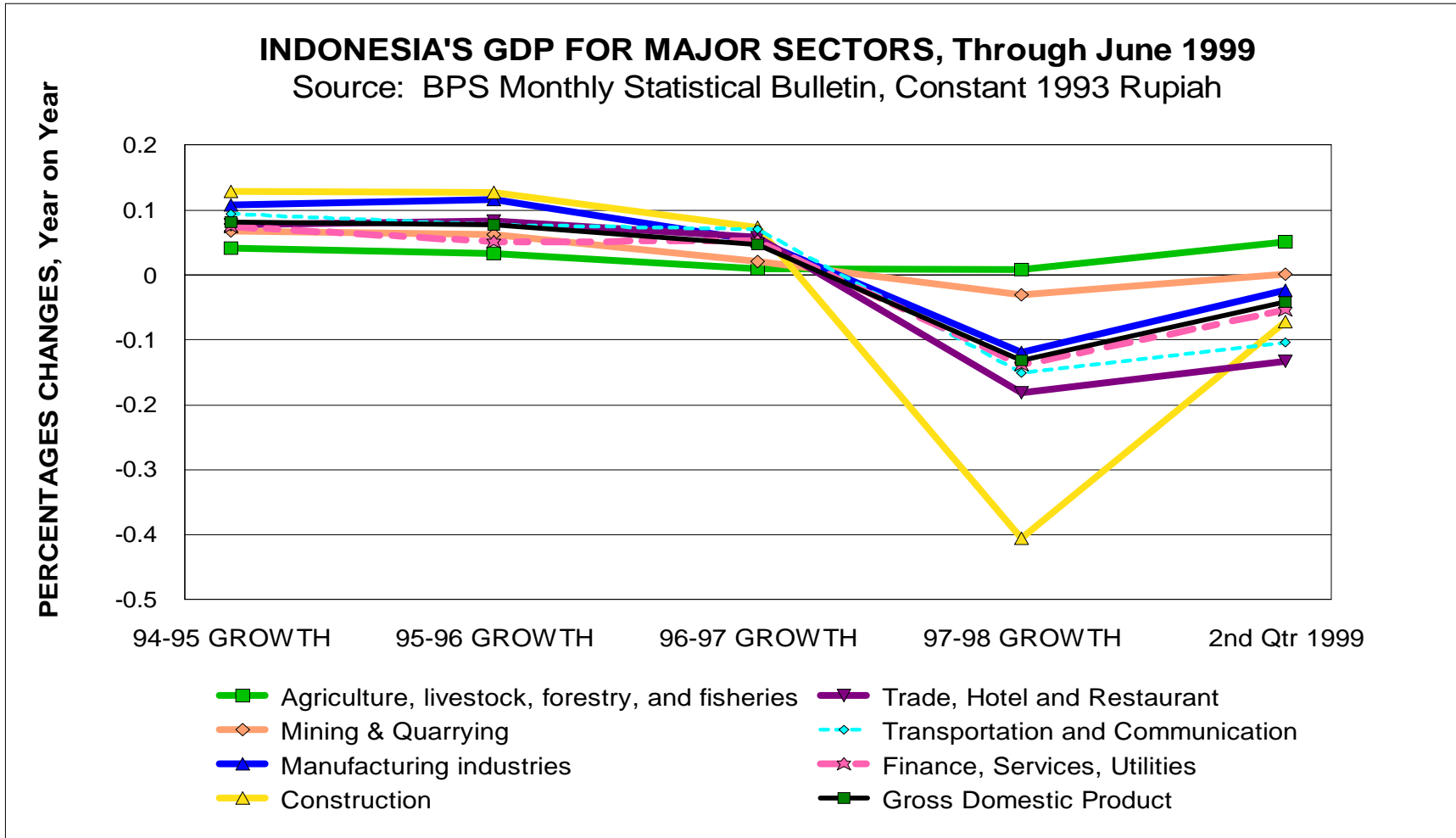


FIGURE C: Annual GDP Growth Rates for Agriculture Sector and its Sub-Components

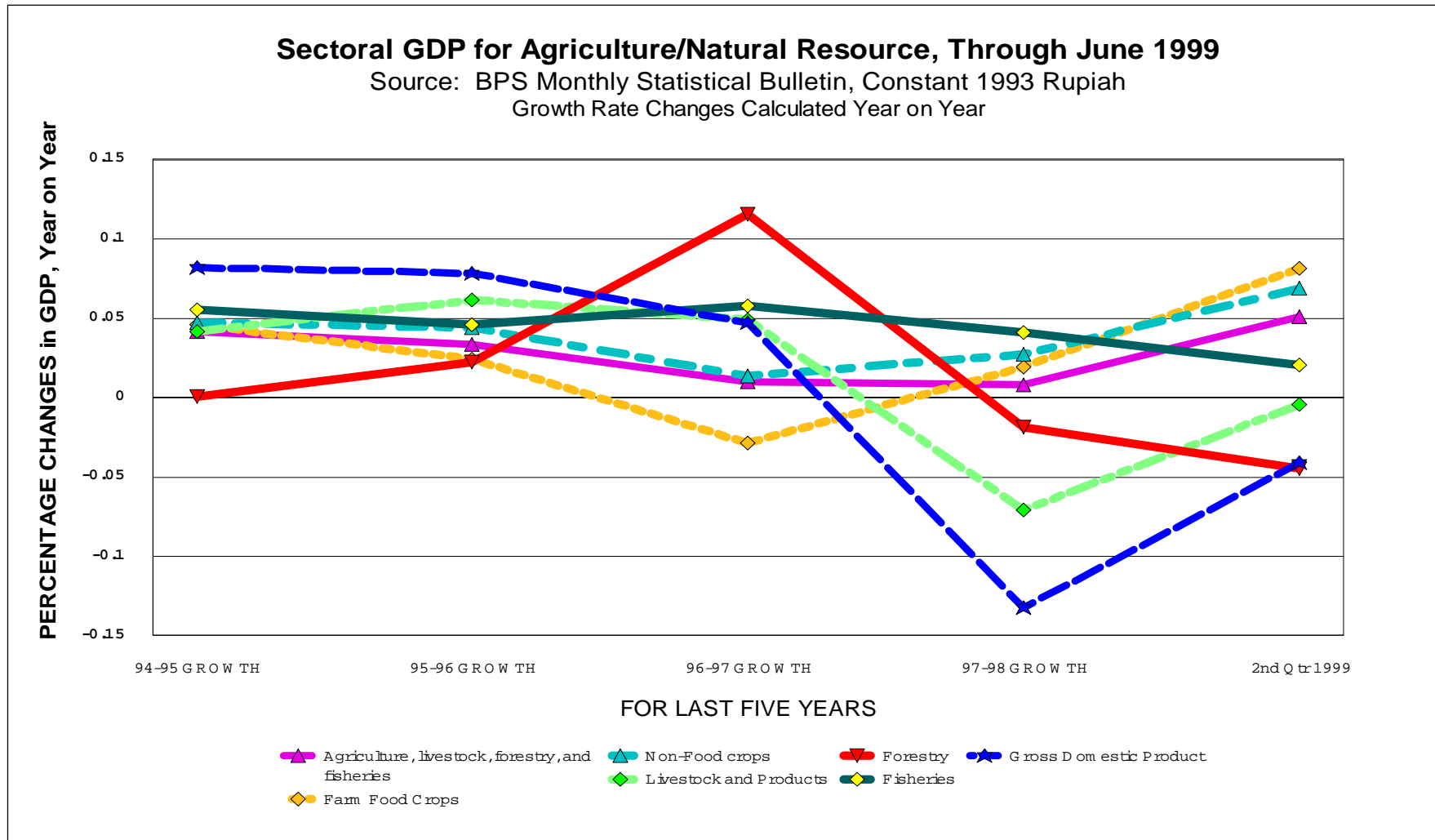
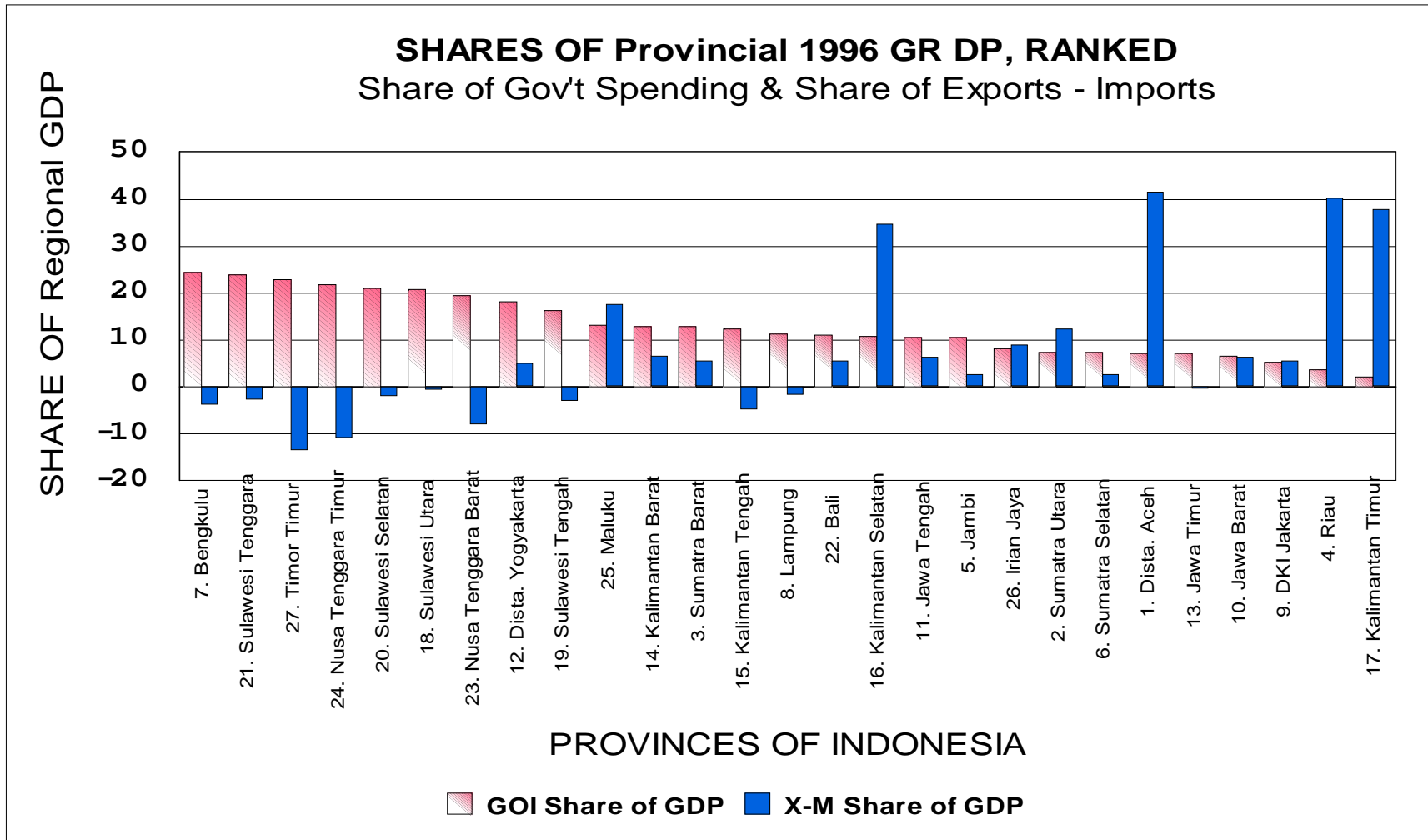


FIGURE D: Shares of GRDP: For Net Exports and Government Spending, Compared to Illustrate Disparities



The economic trends mentioned in the first part of the paper highlight several general problems, but also point toward opportunities for reform. Land, export crops, and agricultural activities managed by small holders contribute to economic stability and an informal social safety net, but the sector is dominated by small holders with poor access to land, credit, management skills, markets, and little tenure security. The new government has the opportunity to advance and reform policies to export-oriented agricultural subsectors, including stabilizing land tenure and considering land reform. The crisis and the reform period are also increasing both economic and political uncertainty. Increasing uncertainty usually shortens planning horizons and decreases long range planning. This will result in short run management approaches and more environmentally harmful resource management practices. The new government should recognize the important role and special nature of natural resources and improve policies for their sustainable management.

The crisis and reforms also raise many questions about decentralization, autonomy and equity, some of which will be discussed in the next section.

2. Background on Natural Resources and Decentralization Laws

Natural resources are not distributed evenly in Indonesia. Some provinces are rich in oil, others in forests, or fish, or people. Also, natural resources are different from other sectors of the economy. Aside from their special treatment in the Constitution of Indonesia, natural resources may exhibit the features of “public goods.” For a public good, use by one does not diminish use by another. Economic theory shows many cases where government intervention is needed to ensure that public goods are protected from overuse or fouling (externalities). Natural resources may be renewable, exhaustible, or subject to irreversible change. Use of natural resources may create externalities, or negative consequences, across sectors or boundaries. Some natural resources may live, exist or move across administrative boundaries. Fish, rivers, ecosystems, coral reefs, populations of game, all may be difficult to manage, tax, and redistribute.

Natural Resources and Law No. 22. All of these issues illustrate why natural resources require special consideration in the context of decentralization and autonomy. Law No. 22, concerning Regional Government, delegates authorities to the provincial and kabupaten governments, while reserving some authorities to the central government. Specifically related to natural resources, the center retains planning and policy authority for national economic and development planning, natural resources utilization, and conservation. Yet the act also requires that Regencies and Municipalities are responsible for agriculture, environment, and land. Clearly, with respect

to natural resources, environment, preservation, and conservation – all of which are affected by land use and agricultural development -- there is overlapping authority. Implementing rules will be needed to determine the balance between central and local control and management of important natural resources, as well as conservation and environmental protection.

Natural Resources and Law No. 25 (Fiscal Balancing). UU No. 25 concerning fiscal balancing also addresses issues of natural resource development, wealth and allocation. Specifically, Chapter 3, Article 6 outlines tax revenue allocations for natural resource sectors. Under the allocation system devised in the law, regional governments would receive:

- 80% of tax revenues from fisheries, forestry, & mining
- 15% of tax revenues from petroleum
- 30% of tax revenues from Liquid Natural Gas.

A general allocation fund and a special allocation fund are intended to equalize budgetary resources and development potential across Indonesia. Other sections specify formulas for the allocation of these special funds and the allocation of other tax revenues. For example, 25 percent of domestic revenue is reserved for use by regional governments. Of this, 90 percent will go to kabupaten/kotamadya governments.

2. Distribution of Natural Resources in Indonesia (Figure 1)

Before we can discuss the implications of UU No. 25 in terms of resource revenues and budget allocations, it is important to understand how natural resources are distributed across Indonesia. Figure 1 (attached) shows Gross Regional Domestic Product (GRDP) derived from the relevant natural resource sectors: oil, gas, mining, forests, and fish. The figure shows that GRDP from these sectors varies widely both in amount and in composition. Some provinces obtain nearly zero earnings from natural resource wealth. Others have earnings over 10 trillion Rupiah (inflation adjusted, constant value, 1996 Rupiah). This figure also does not reveal the true distribution of resource wealth in Indonesia. There may be undeveloped, untapped, undiscovered wealth in many places. This figure only illustrates how Indonesia is currently using its resource base to generate economic activity.

By illustrating economic activity (in terms of GRDP), we can see the levels and distribution of the sectors that Law No. 25 intends to tax. This is the economic base of natural resource use on which the taxes and allocations specified in the law will be determined. Even without calculating tax rates or potential distributions, the figure clearly shows several things.

- At least ten provinces would get very little under any scheme to share natural resource tax revenue, because they have so little of the natural resources that contribute to the tax revenue allocation formulas.
- Surprisingly, in such a resource rich country, most natural resource based economic activity (as measured by GRDP for the few resource sectors named in the law) comes from just four provinces.
- Natural Resources are a very small share of GRDP in most places (5-10%). There are exceptions to this generalization at the high end and at the low end.
- High end exceptions, where natural resource earnings are more than 20% of GRDP, include Aceh, Riau, Sumsel, Kalteng, Kaltim, Maluku, Irian.
- Low end exceptions, where natural resource earnings are less than 5% of GRDP, include Jakarta, Yogya, Jatim, Timtim.
- The data behind the figure show that these four provinces account for 6.2 % of Indonesia's population, 14.5 % of Indonesia's GDP, 36 % of Forestry GDP, 69 % of Mining GDP, and 80 % of Oil & Gas GDP.

This discussion is based on resource earnings only, not all potential tax sources. It also compares GRDP resource shares: not all of this is a potential tax source. There are other natural resource sectors not named in the act: land, crops, plantations, and coastal areas are an important part of the debate on decentralization and autonomy

This figure is a lesson in the diversity of Indonesia. It shows how variable and different the provinces and islands of Indonesia are in their natural resource base, which is one of the building blocks of development potential. This figure is a good reminder that allocating natural resource tax revenue isn't the best way to obtain more equitable distributions of growth, development, and income at the regional level. If it is to be done, it must be accompanied by other forms of equalizing transfers, as many have noted.

3. Implications of UU No. 25 for Resource Tax Revenue Allocations

This section builds on the base of GRDP and estimates the tax revenue allocations as proposed in UU No. 25. Preliminary estimation methods are reported then applied to develop comparisons of potential budget levels and per capita distributions under the scenario proposed in UU No. 25. **Effective Tax Rates for Natural Resource Sectors (Figure 2).** To estimate the distribution of tax revenue, we must go beyond GRDP. We need to know the effective tax rates for each of

these natural resource sectors so that we can determine the amount of tax collected and then the distribution of the revenue according the formula in the law. Actual tax collection/recovery data by sector and by province is not widely available. It might be possible to determine an “administered” tax rate for the sector, by checking the various laws and regulations that regulate the sector. But the administered rate does not tell us how much is actually collected. Here, an alternative method is applied to GRDP data to yield a rough estimate of tax recovery at the sectoral level.

Using data from the Ministry of Forestry and Estate Crops, one can compare forestry sector tax revenues (IHH and Dana Reboisasi²) to overall GRDP for the sector. Tax revenues from the Oil & Gas sector are reported by the Ministry of Finance. These tax revenue data were compared to GRDP data to obtain a rough measure of the effective tax rate for each subsector. The results of this analysis are graphed in Figure 2 for several fiscal years. The figure indicates that effective tax rates (or at least tax collections relative to GDP estimates) could be as low as 20% or less in the forestry sector. In the oil and gas sector, tax collections relative to subsectoral GDP is in the range of 60%.

This is a very rough estimation procedure. Still it shows that in a high value, point source sector like oil, the tax collection rate (to say nothing of the administered tax rate) can be relatively high. The effective tax rate in a widely distributed, low unit value sector like forestry, tax collections are only a small part of economic activity – no matter what the administered tax rates are for the sector. We might speculate that the fisheries sector would be similar to the forestry sector, while the mining sector might be more like the oil sector, at least for large scale mining activities, since it is a fixed resource that can be investigated.

In any case, this cursory comparison provides us with a minimal basis for the major assumption of the analysis that follows. It is assumed that the effective tax rate in the oil and gas sector is 60 percent. It is further assumed that the effective tax rate in other natural resource sectors is around 20 percent. In the case of fisheries and forestry, this assumed rate may be too high. In the case of mining, it may be too low. The results are still interesting and useful.

Comparisons to Existing Regional Budget Levels (Figure 3). Using the assumed effective tax rates developed above and the revenue sharing specified in Law No. 25/99, it is possible to estimate the natural resource-based tax allocations that would accrue to each province. This

² Note that DR revenue is allocated to the special allocation fund. It is not distributed according to the forestry tax revenue allocation of 70% for Regional and 30% for Central.

procedure could be improved and adjusted using better or different effective tax rates, either more precisely measured or more sector-specific.

The levels of allocations of natural resource taxes estimated in this way range from near zero in resource poor provinces to well over 10 trillion Rupiah in the few resource rich provinces. The calculated (estimated) levels are illustrated in Figure 3, attached, for Indonesia's 27 provinces, arrayed from left (west) to right (east) in dark color. Because the distribution of natural resources is so diverse across islands and provinces (as seen in Figure 1), these results are most likely indicative of the actual situation, if true effective tax rates were known. At least, the results are robust to moderate changes in the assumptions. For example, assuming an effective tax rate 20% higher or lower does not change the overall distribution of estimated revenues appreciably.

Figure 3 also illustrates level of regional government budgets (Tingkat I and II combined) based on 1996 data from the Ministry of Finance (light color). The budget data also show wide variability across provinces, although it seems clear that larger populations are served with larger budgets.

Comparing the budget levels (actual from 1996) to the resource revenue allocations under UU 25 (projected for 1996), we see wide variability in the two sets of figures (side by side bars for each province). Most 1996 budget allocations show no relationship to the resource revenue allocations. In some cases, resource revenues could be twice as high as prevailing budget levels (e.g., Kaltim). In others, resource revenues might be only a tiny fraction of prevailing budgets (e.g., Sultra or NTB). This wide variability gives us some confidence in the assumptions applied above: even if the effective tax rate were doubled, it would not affect the wide variability illustrated in this figure. Clearly, the natural resource tax revenue allocations will not be sufficient to maintain or replace regional government budgets in most cases.

Comparison to Existing Levels of Grants from Central Government (Figure 4). Figure 4 makes a similar comparison, but this time only showing grants from the center to the regional governments. This excludes regional own source revenues. The idea is to show how natural resource revenue allocations (from the center to the regions) compare to existing levels of transfers from the center to the regions.

The result is roughly the same in concept to Figure 3, though different in the details. Only four provinces would receive more under the resource revenue allocation scheme than they currently receive under the “central transfers” scheme. Most would receive substantially less. This indicates that resource tax revenues cannot replace central transfers as an important share of regional government budgets.

Per Capita Comparisons of Resource Tax Revenue Allocations (Figure 5). Figure 5 makes the same comparison on a per capita basis. Per capita central government transfers (light color) for 1996 ranged from 50,000 Rupiah to 200,000 Rupiah. Low per capita levels of transfers were generally in provinces with large populations, or with a large economic base and substantial own source revenue potential. High per capita levels of transfers from the center were generally associated with poorer, less developed and less populous provinces.

In stark contrast, the levels of per capita natural resource tax revenue distributions under UU No. 25 would range from nearly zero in many places to over 300,000 Rupiah per head in a few places. This distribution would work to make local budgetary levels more unequal, when measured in per capita terms.

How the “Resource Revenue Pie” is Distributed under UU No. 25 (Figure 6). The final figure (attached) calculates all the natural resource-based tax earnings and shows how they would be distributed among the provinces and the center. The main conclusion of this analysis is that the central government retains a major share of natural resource earnings, primarily because it retains a large share of the largest tax revenue source (oil). Earnings from other sectors are so small relative to oil earnings, that this result would hold even if a higher effective tax rate were used for non-oil sectors.

Summary of Economic Issues for the New Government

Two economic issues tend to make the distribution of economic activity across Indonesia’s provinces more unequal. First is the unequal basic distribution of natural resources, which influences development potentials and comparative advantage. Second is the ability and potential to export raw or processed goods to world markets, earning a higher premium during the crisis when the currency is weak. These factors tend to make the rich provinces richer and the poor provinces poorer, clearly a concern for the new government.

The fiscal decentralization act (No. 25) has some “unbalancing” provisions and implications for the distribution of tax revenues from natural resources. Without off-setting or equalizing transfers, resource tax revenue allocations could worsen the economic trends mentioned above. This should be a concern of the new government. Government policies can influence or counterbalance the distribution of natural resource based tax revenues.

More generally, improving the management and sustaining the productivity of natural resources are important economic issues for the new government. Natural resources are a fundamental component of Indonesia's economy and an important part of the "social safety net" in times of economic hardship and uncertainty. In the crisis period, the agriculture and natural resources sector stands out for maintaining some stability and moderate growth. On the one hand, this is an economic boon. On the other hand, this increases pressure on the land, sea, fields and forests that people rely on for their daily livelihoods. Legal reforms, tax policies, credit rules, exchange rates will all affect the natural resources base and potential for better or worse. The new government should consider its policy reforms and their impact on natural resources carefully.

FIGURE 1. The Distribution of Natural Resources Across the Provinces of Indonesia is Unequal (based on GRDP)
 Only Natural Resource Sectors Mentioned in UU No. 25 are Shown.

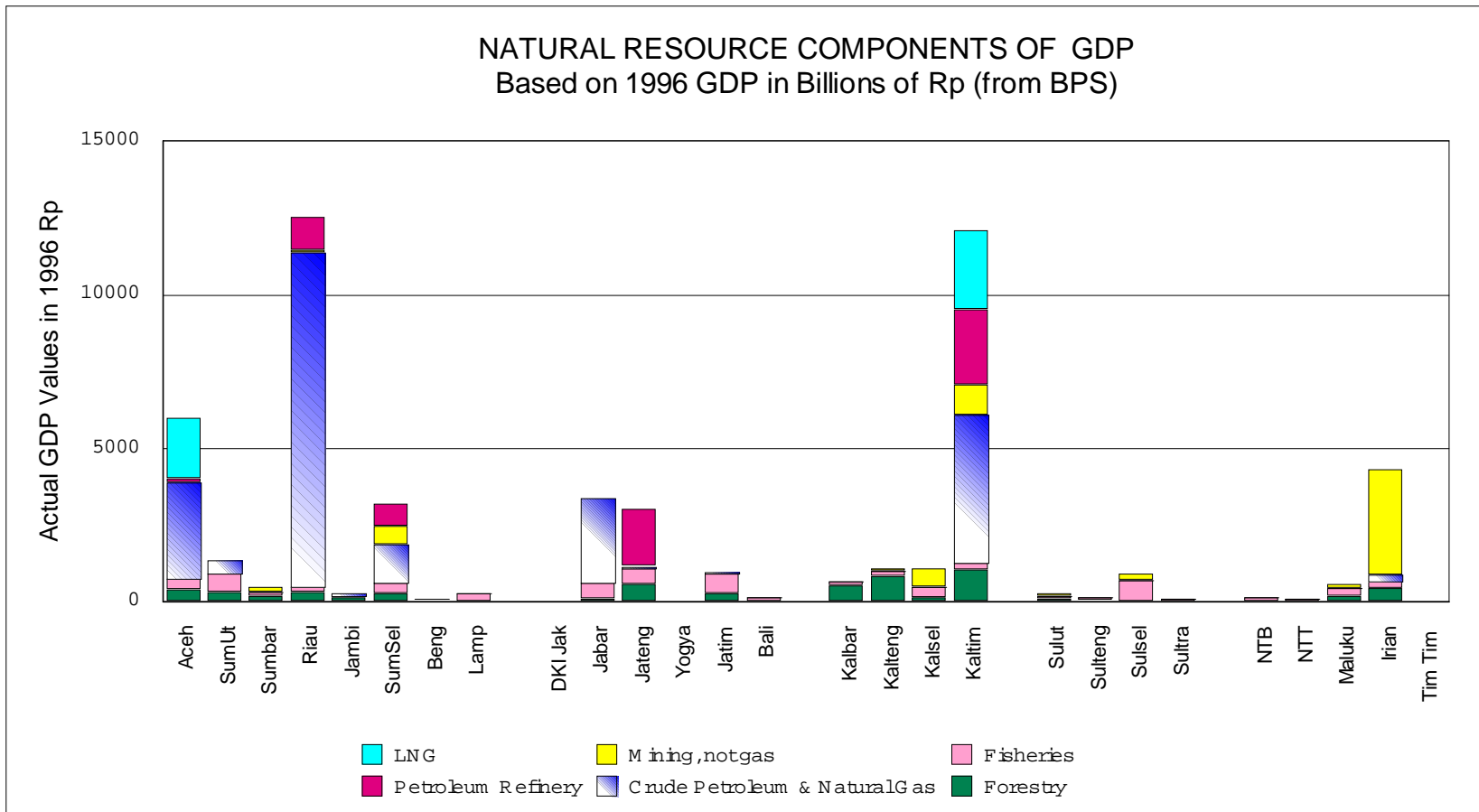


FIGURE 2. Effective Tax Collection Rates Relative to GDP Values for Forestry and for Oil & Gas Sub-Sectors
 Effective Tax Rates are Needed to Estimate the Implications of UU No. 25

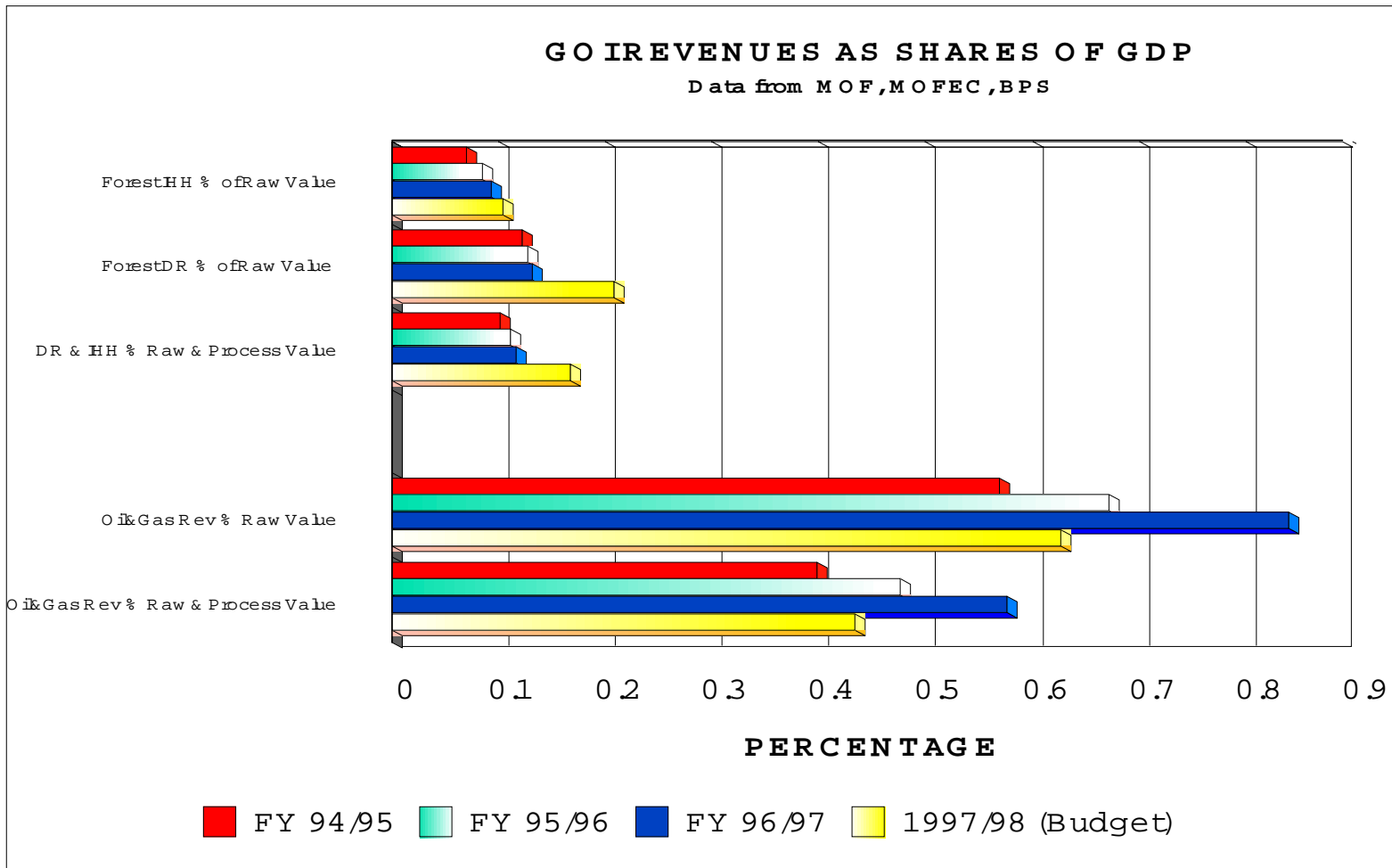


FIGURE 3. Comparison of Regional Government Budget Levels (including both local revenues and grants from the center) to "Estimated" Natural Resource Tax Revenue Allocations as Proposed under UU No. 25. Using 1996 Data.

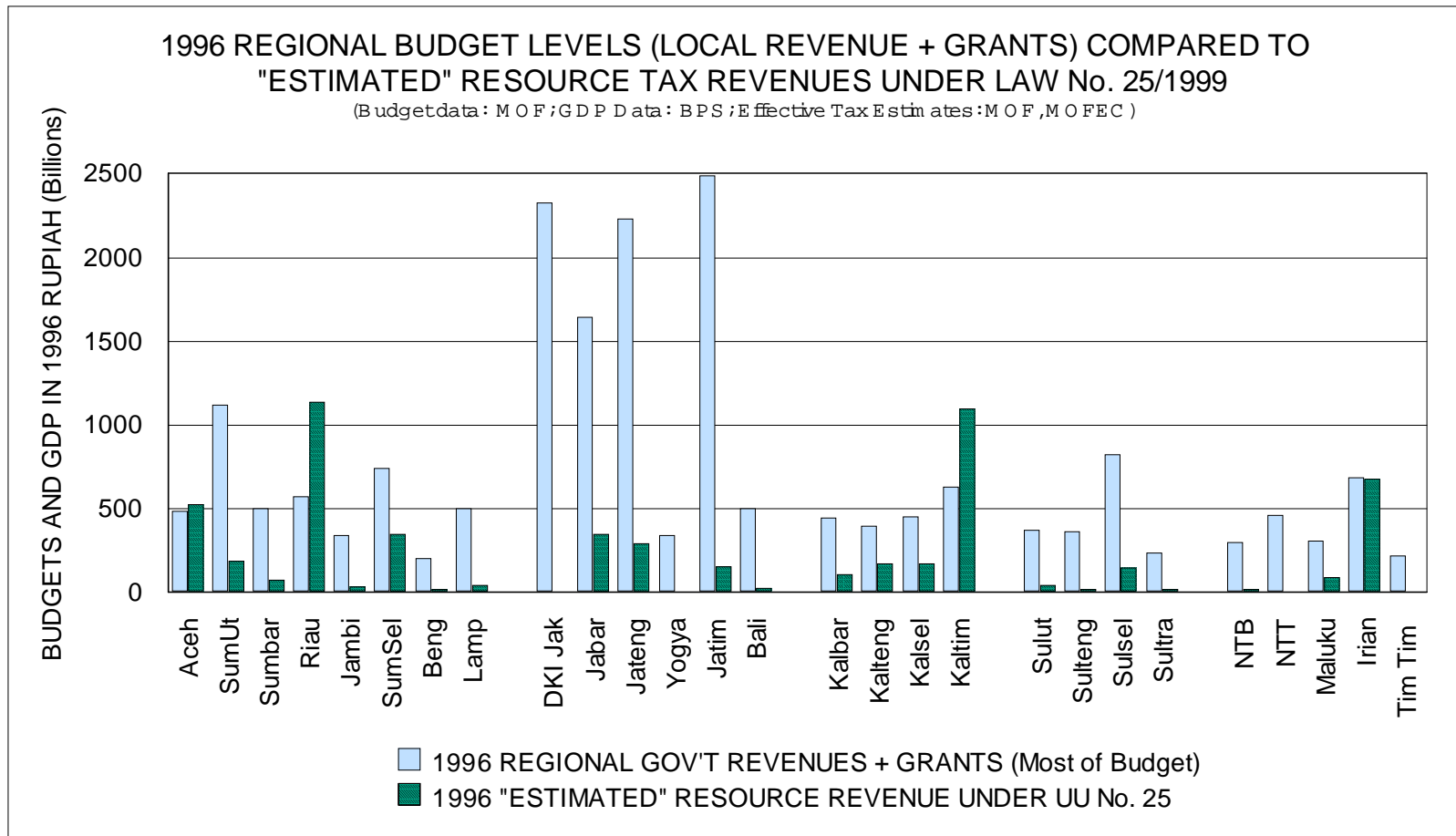


FIGURE 4. Comparison of Central Government "Grants and Subsidies" to the Regions to "Estimated" Natural Resource Tax Revenue Allocations as Proposed under UU No. 25. (1996 Data)

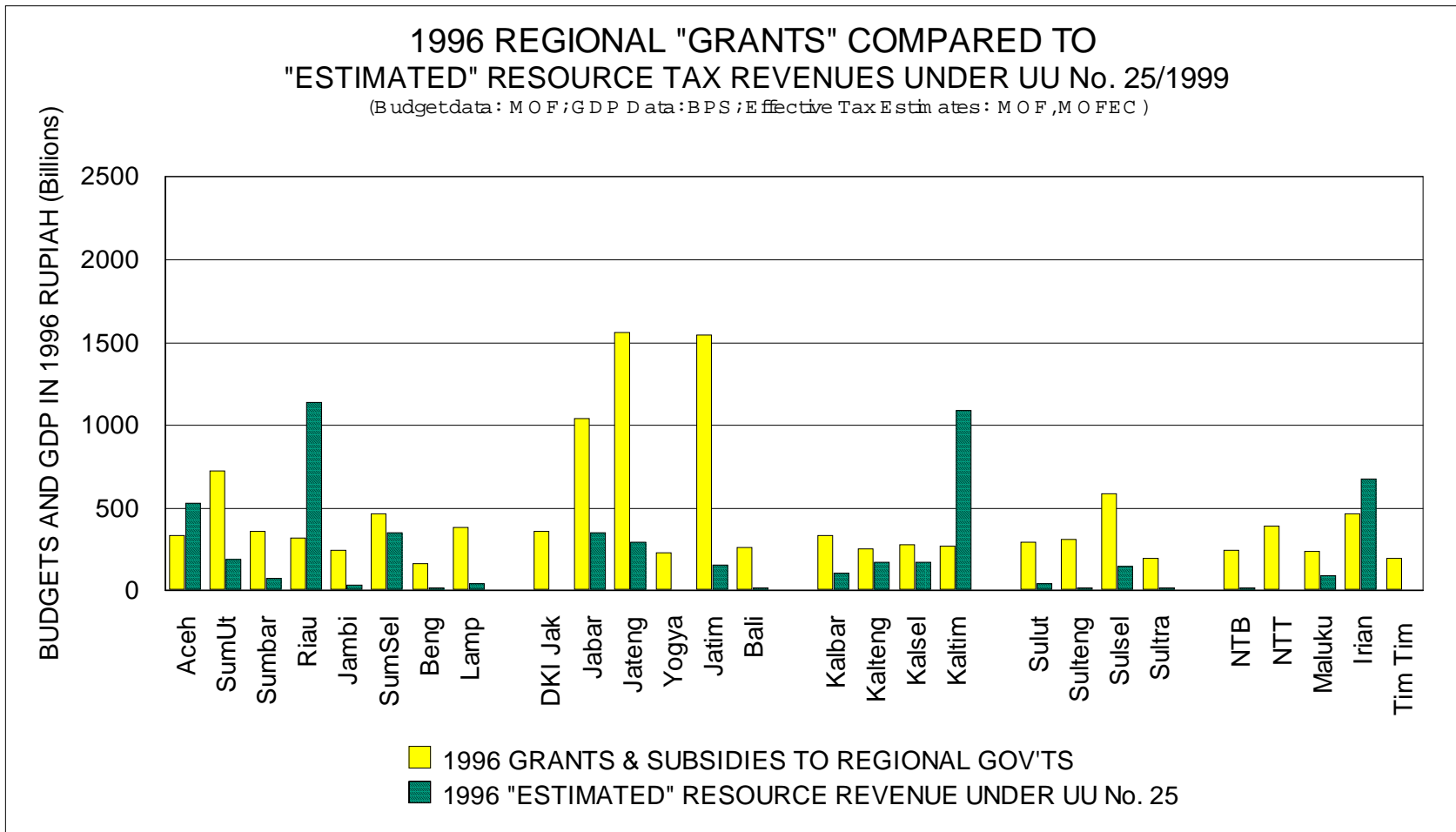


FIGURE 5. PER CAPITA Comparison of Central Government "Grants and Subsidies" to the Regions to "Estimated" Natural Resource Tax Revenue Allocations as Proposed under UU No. 25. (Same as Figure 4, but in Per Capita Terms)

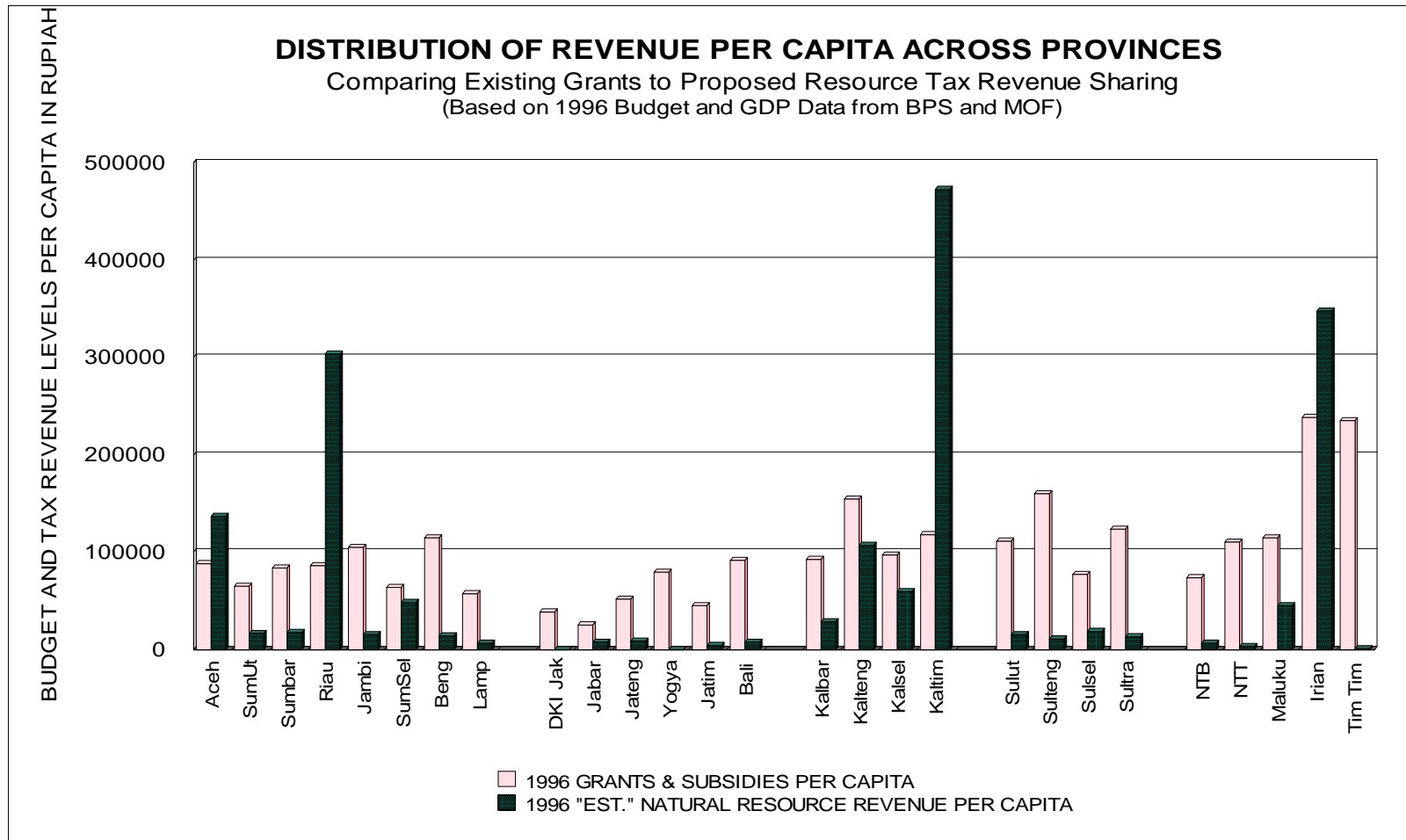
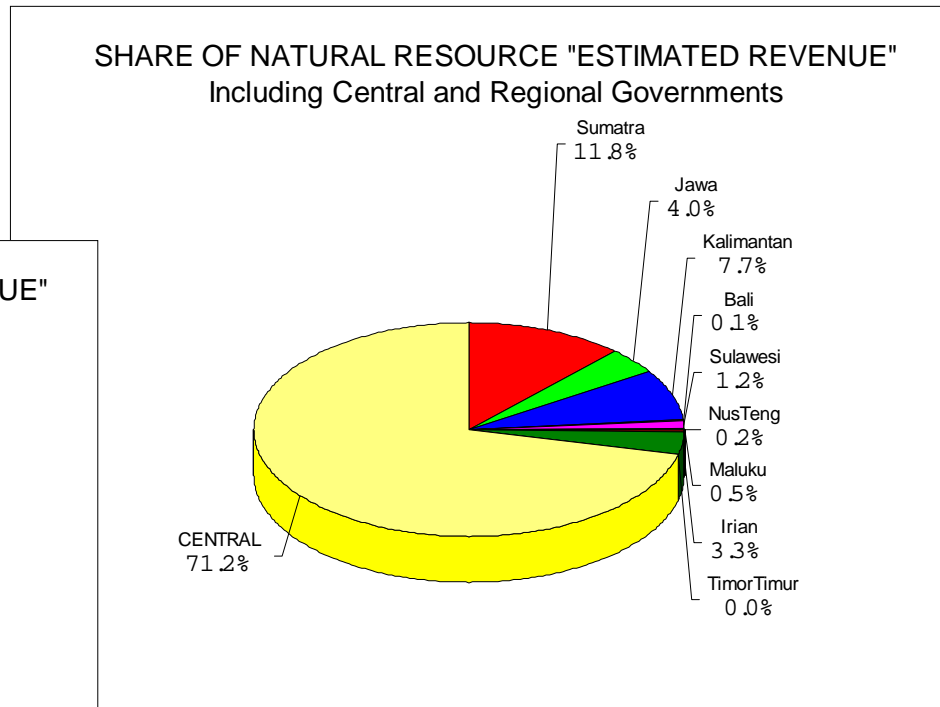
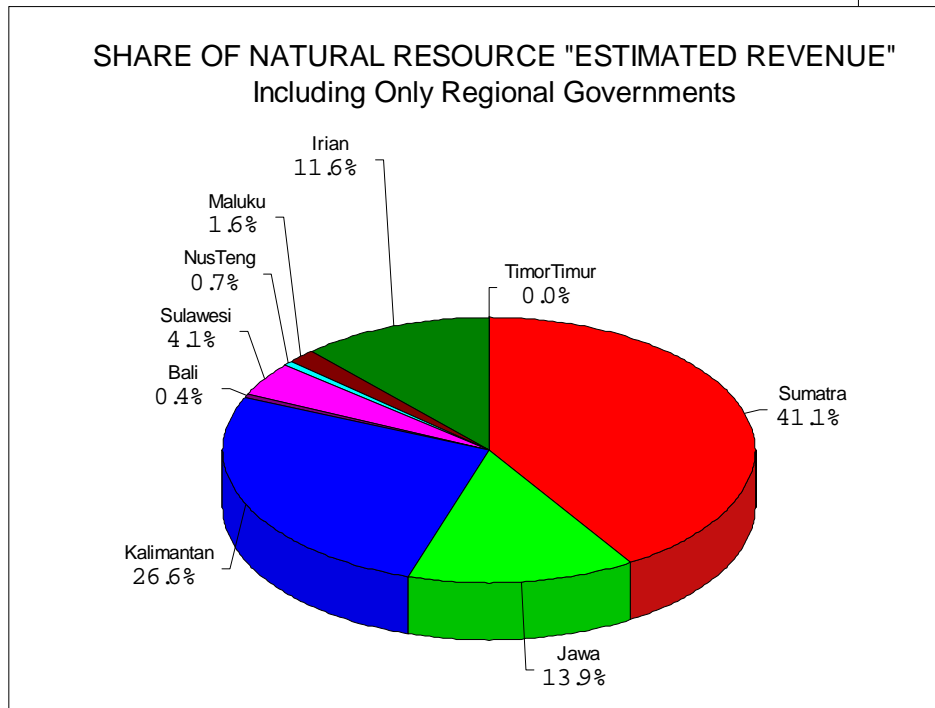


FIGURE 6 A & B: Illustrating the Distribution of the "Pie" of Natural Resource Tax Revenue (A) Among the Main Island Groups of Indonesia and (B) Among the Central Government and the Island Groups.



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