

Regional conflicts over mineral rights in South East Asia

Rod Duncan

Georgia Institute of Technology *

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Abstract

Several of the ongoing conflicts in South East Asia are internal disputes driven by conflicts over revenues from mineral projects. In order to understand these conflicts it is necessary to study the sharing arrangements between regions within countries. This paper looks at typical regional wealth-sharing arrangements to determine when such arrangements are likely to break down and when conflicts erupt. Internal conflicts are likely to occur when (1) a persistent boom occurs in one region; (2) when one region commences on a faster growth path than the rest of the country; and (3) when the benefits from remaining

*Contact address: Ivan Allen College, School of Economics, Georgia Institute of Technology, Atlanta, GA 30332. Email: roderick.duncan@econ.gatech.edu.

in a nation fall.

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1 Introduction and motivation

There are three internal sources of conflict in a country over mineral projects:

1. conflict between the foreign investors and the domestic government;
2. conflict between the domestic central government and local landowners/government; and
3. conflict between domestic groups.

This paper covers the second source of conflict. These disputes arise between the domestic central government and the regional government or domestic groups in the area in which the mineral project is located. The regional government and the regional domestic groups are treated as representing the same interests.

The typical arrangement of a mineral project is that the foreign investors conduct negotiations with the domestic central government. The central government has the responsibility of acquiring the land for the project and in return receives the taxes flowing from the project.

The central government then allocates a share of these revenues to flow back to the regional governments, including the region containing the project. It is the share of mineral revenues returned to the regional government that is the focus of this paper.

Sometimes a mining contract stipulates that the investors spend a certain amount on improvements of the region. In this case the revenues from the mine are flowing directly from the mine to the region. However it is the case that these funds are coming out of the share that would have otherwise have gone to the central government. This is equivalent to increasing the region's share from the central government.

Disputes can arise between the central government and the regions about the sharing of mineral revenues. Regions may feel that the central government is taking too large a share of mineral revenues, particularly when the revenues are coming from "their" mine. Central governments on the other hand can wish a larger share of the mineral revenues to pay for central government services or to satisfy its own constituencies.

These disputes can lead to open conflict. The Bougainville conflict of 1988-1997 in Papua New Guinea was partly driven by a perception of local landowners that the central government was returning too low a share of the revenues of the Panguna copper mine to the local area. The decades-long conflict in Aceh is partly over the control of the revenues of Mobil Oil Indonesia, which produces about a third

of Indonesia's natural gas from its fields in Aceh. Aceh groups have accused the Indonesian government of returning no more than five percent of the profits of the Aceh operation.

These internal conflicts have been and are very lengthy and costly. Mineral projects have been and will continue to be large revenue earners for governments all over South East Asia. Thus understanding how to minimize the chance of conflicts over revenue-sharing is a high priority.

These conflicts have often taken the form of secessionist movements. There is a literature on the political economy of nation formation and destruction, which is surveyed in Bolton, Roland, and Spolaore (1996). One difficulty with the existing literature is that it does not model situations in which there is hostile secession in equilibrium. Buchanan and Faith (1987) model a central government which sets taxes up to the point where potential seceders just choose to stay in the nation, so there is no secession even though the potential for it exists. Bolton and Roland (1997) model a situation where secession can occur in equilibrium, but if secession is to occur, it is preferred by all parties, so there is not a conflict.

A variant of the Buchanan and Faith model could allow for secession in equilibrium by adding a "cost of secession" which is not revealed to the central government. If the central government has to set tax rates before knowing the region's cost of secession, a separating equilibrium might exist where the tax rate is set so that the high cost

regions does not secede, but the low cost regions would. Such a model however does not have many interesting features.

The model put forward in this paper differs from the existing literature in that it studies forward-looking agents and models the limits to revenue-sharing in a federal system. Linear tax rates are set in advance by the central government under income uncertainty. Secession does occur in this model under certain conditions and is opposed by other regions in the nation.

In the next section a simple model of regional conflict is developed. The third section discusses the results of the model.

2 Model of revenue-sharing

In a revenue-sharing arrangement between regions, the central government functions simply as a mechanism for the collection and distribution of taxes. We assume away the services and tax consumption of the central government.

Suppose we have two equally populous regions denoted by subscripts 1 and 2 that are currently within a state. The regions are assumed to maximize their expected utility over time subject to a random income stream, (x_{1t}, x_{2t}) , with expected value (\bar{x}_1, \bar{x}_2) . The revenues from mineral projects are part of this random income stream accruing to a region.

If the regions remain separate they consume only their income each

period and receive a expected present value of discounted future utility

$$V_{it}^A = E\left\{\sum_{t=0}^{\infty} \beta^t U(x_{it})\right\}$$

where E is the expectations operator and β is the time discount rate.

If the two regions form a state, they have potential benefits from pooling income and risk-sharing over their uncertain incomes. The regions are assumed not to have the ability to borrow. The regions join into a single state on the basis of an implicit contract that specifies the form of risk-sharing. For simplicity assume this contract is stationary over time.

The tax and revenue-sharing arrangement of the state is modeled on existing stylized federal arrangements. Taxes are drawn from individuals, domestic companies and the mineral project in some constant proportion, τ , of income. Taxes are then returned to the regions as a constant level of spending per person¹.

Assume that the governments have solved the choice of the optimal tax rates. There are additional risk-spreading benefits from higher tax rates, however this has to be balanced out against the higher risk of secession discussion below. We are interested in the eruption of conflict, so that we are not so much interested in the choice of τ but

¹The latest Nigerian constitution enacted in 1999 specifies a minimum share of mineral revenues to be returned to regions of 13 percent (Section 162(2)). Representatives of groups from southern Nigeria have complained that the share in reality is closer to 5 percent.

rather when a region will find it preferable to opt out of the revenue-sharing arrangement of the state. This optimal choice of τ is assumed already solved for some optimal value of τ .

The consumptions of the regions after taxes and revenue-sharing are:

$$c_{1t} = \left(1 - \frac{\tau}{2}\right)x_{1t} + \frac{\tau}{2}x_{2t}$$

$$c_{2t} = \left(1 - \frac{\tau}{2}\right)x_{2t} + \frac{\tau}{2}x_{1t}$$

The regions receive some benefit, B , from being within the state. Either region has the option of leaving the state and becoming independent for a one-time cost, L . This secession cost would depend on the expected length of a war of secession, the level of violence of such a conflict and the likelihood of a peaceful solution in the interim.

For simplicity assume that utility is linear and is simply expressed in units of consumption. Alternatively it could be assume that there is a linear approximation to utility and that B now includes any insurance benefits from the state tax and transfer system.

A region i will want to leave the state when the expected utility of leaving and existing in autarky exceeds the expected utility of staying within the state. By opting out of the state, the region can keep the entire mineral revenues from projects within its borders. We assume that a region can leave the state only once- that is, it will not be invited into another state if it goes independent. Each region in the state faces the decision at each time period comparing:

- Expected utility of leaving: $V_{it}^A = (x_{it} - L) + \frac{\beta}{(1-\beta)}\bar{x}_i$
- Expected utility of staying: $V_{it}^S = (1 - \frac{\tau}{2})x_{it} + \frac{\tau}{2}x_{jt} + B + E\beta V_{it+1}$

where

$$V_{it+1} = \max\{V_{it+1}^A, V_{it+1}^S\}$$

For region i to never leave the state would require:

$$(x_{it} - L) + \frac{\beta\bar{x}_i}{(1-\beta)} \leq (1 - \frac{\tau}{2})x_{it} + \frac{\tau}{2}x_{jt} + B + \frac{\beta}{(1-\beta)}((1 - \frac{\tau}{2})\bar{x}_i + \frac{\tau}{2}\bar{x}_j + B)$$

or

$$\frac{\tau}{2}(x_{it} - x_{jt}) \leq \frac{\beta}{(1-\beta)}\frac{\tau}{2}(\bar{x}_j - \bar{x}_i) + (\frac{B}{(1-\beta)} + L)$$

This last equation shows that the maximum amount current transfers from region i to region j can be is given by the expected value of the present value of future net transfers from region j to region i plus the present value of the stream of benefits from remaining in the state plus the one-time cost of leaving the state. Call this “Equation 1”. Equation 1 is close enough to the true condition to enable us to make some rough conclusions about the behavior of regions.

If transfers between the regions exceed the condition in Equation 1, then it is in the best interest of one of the regions to demand a lower τ as a condition for remaining in the state or to secede from the state. The other region would oppose these demands. The revenue-sharing arrangement of the federal system comes under pressure from within the state. In the next section we look at some likely scenarios for this to occur and possible solutions for a more stable federal structure.

3 When does the revenue-sharing arrangement break down?

We examine three conditions under which Equation 1 could be violated and the federal revenue-sharing system be placed under stress. We use these conditions draw some generalizations about the stability of federal systems.

Temporary boom in one region: If current income of a region is sufficiently high relative to the income of the other region, Equation 1 is violated. This might occur if there was a large unexpected shock to the income of one region. This could occur if there was a large increase in the price of the mineral produced in the region, so that tax revenues greatly expanded. Secessionist demands are more likely the more persistence there is in this shock.

The greater the covariance of income shocks in the two regions, the lower the probability of this event occurring, so states with higher covariance of incomes across regions might be more stable. However the greater the covariance of income shocks, the lower the insurance value of revenue-sharing across regions and the lower will be the value of statehood. The impact of covariance of income shocks is thus uncertain.

Permanently higher income in one region: Permanently higher income or higher growth in one region than the other region can produce a violation of Equation 1. The region with higher future income ex-

pects to have future net transfers out of the region that are larger and more likely. This could occur if a new mineral deposit is found in a region or if the region undergoes a policy reform that places it on a permanently higher growth path. This change in future income causes the region to secede now.

Aceh and Bougainville might be examples of this cause of secession. Both mineral-rich regions are on net transferring wealth to other regions in their countries. Likewise the northern regions of Italy are growing far faster than the southern Italian regions. The call for secession by parties representing the northern regions has grown stronger over the last 20 years.

Change in the benefits of statehood or the cost of secession: If the benefit from remaining in the state falls or the cost of secession falls sufficiently, Equation 1 is violated. While this is outside of the context of this paper, an example of this cause of secession might be found in Europe. The traditional roles of states in the European Union, such as maintaining border control, defending the population, controlling public health issues, etc have gradually been usurped from the individual states to the European Union. As this happens, the benefit for a region for remaining within a state within the Union falls, as those services will still be provided by the European Union if the region secedes. An example is the current call for greater independence for regions in France, United Kingdom and Spain.

A solution to the problem of disputes in this model is straightfor-

ward. The cause of secession in this model is the revenue-sharing from rich regions to poor regions. This sharing arrangement provides an incentive for rich regions to secede. One way of avoiding this event is to make the revenue-sharing arrangement regressive, so allowing rich countries to keep more of their wealth. Regressivity reduces the insurance benefits of a federal structure, but it also makes secession less likely. An interesting result is that these regressive revenue-sharing structures are not very common. Most taxation and transfer systems in and between states are linear or even progressive in form.

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