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The Benefits and Costs of Seignorage

The MIT Dictionary of Economics defines seignorage as the “...net revenue derived by any money-issuing authority”. The conventional estimate of seignorage is the real change in reserve money, computed as the change in reserve money divided by the price level. Although economists typically refer to seignorage as “revenue” that is “collected”, the actual transfer of resources occurs as a capital gain or loss. For instance, the “inflation tax”, a component of seignorage, is a capital levy on outstanding money balances that varies with the rate of inflation.

There is a large literature on seignorage (and the inflation tax) and many estimates of the “revenue” from both have been derived. The estimates range from small fractions of government revenue and GDP to amounts that exceed GDP. The estimates have a peculiar feature. The most efficiently managed economies with the deepest financial systems appear to gain the least from seignorage and the inflation tax. Mismanaged economies with profligate governments and shallow financial systems appear to gain the most.

Yet, appearances deceive. For all but a few developing countries, the conventional estimates of seignorage are grossly overstated. For countries with large external debts, the estimates are fundamentally wrong. Excluded from standard calculations of seignorage is the increased local currency cost of servicing the public-sector foreign debt due to exchange rate depreciation resulting from the reserve money creation that generates the seignorage. This cost, which takes the form of a capital loss in local currency terms, largely offsets the apparent first round “gain” from seignorage. Indeed, for highly indebted developing countries, the capital loss on foreign debt can exceed the capital gain from seignorage by a wide margin.



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In deriving their estimates, few analysts distinguish between gross and net seignorage. It is often taken for granted (or simply assumed) that the financial instruments generating seignorage are “costless” to produce, or “virtually” so. This assumption is not valid even in well-managed financial systems. A further problem with empirical estimates of seignorage is that the formula used is a valid partial approximation only when the growth of reserve money and the rate of inflation are low. Once these growth rates rise, higher order effects begin to dominate the calculation.

A more general problem, however, is that the process whereby seignorage is generated has been too narrowly conceived. Properly considered, seignorage is a general equilibrium phenomenon. In theory and practice, sustained increases in reserve money have a significant effect on output, employment, prices, interest rates, wages, the exchange rate, balance of payments, and external indebtedness. Partial equilibrium analyses, implicit in the standard formulae for seignorage and the inflation tax, do not capture the net changes in the capital values of financial assets that accompany rapid growth in reserve money.

These net changes directly affect the budget. As reserve money increases, prices rise and the exchange rate depreciates. This raises the local cost of foreign debt service. Highly indebted countries have been especially hard hit when this occurs. Indeed, governments attempting to service their external debt find themselves caught on a “carousel”. The capital loss in local currency terms

on foreign debt service (leaving aside the capital loss on the debt stock itself) is greater than the resources generated from seignorage.

The circular nature of this process gives an illusion of gain. The government issues reserve money to buy foreign exchange to service debt whose local currency costs have increased due to the exchange rate depreciation resulting from inflation induced by earlier monetary emission. This capital loss is compounded over time. Seignorage by its nature provides a temporary capital gain (measured as the real increase in reserve money) whereas the shift in the exchange rate raises the local currency cost of debt service for all periods until the debt is retired.

The above suggests that seignorage entails some significant benefits and costs. What are they and how are they measured?

Benefits of Seignorage: In addition to capital transfer from seignorage and the inflation tax, there are a number of other benefits from generating seignorage by increasing the growth rate of reserve money. They include:

- monopoly rents due to yield differentials on official liabilities
- real gains to issuers of financial instruments
- second and higher order effects from market distortions.

Monopoly rents accrue when official financial instruments are held by the private sector at yields below market interest rates. The reserve requirements of financial intermediaries are an example. They typically have a return

of zero. The implied “rent” is widely seen as a tax on financial intermediation.

Rising prices over the period when a fixed coupon bond is issued and when it matures represent a capital gain to the issuer and a corresponding capital loss to the holder. The same applies to any financial contract that is not written in real terms.

Second and higher order benefits associated with the generation of seignorage are reflected in the gain (or costs avoided) by the monetary authority and government arising from restrictions on monetary aggregates. Exchange control is one such restriction. Under a fixed (or “managed”) exchange rate, rising local prices provide the monetary authority with a rent on the foreign exchange that is surrendered through formal channels at sub-market prices. For some countries these gains appear to be large. Frequently, however, the agencies complying with exchange controls are state-owned. The practical effect has been to redistribute assets within the public sector rather than provide the government with access to a “cheap” resource.

Costs of Seignorage: Explicit and implicit costs associated with reserve money creation include:

- the resource costs of generating seignorage
- the social and other costs of inflation
- capital loss (to non-government issuers) of financial instruments
- currency substitution and capital flight
- the dynamic effects (including efficiency losses) of financial repression

- the loss of reputation and credibility by the monetary authority.

An important cost of seignorage (no less so because it is widely ignored) is the resource cost of printing, issuing, storing, and maintaining the stock of fiat money. Money may be “cheap” to produce, but it is not “costless”. For some countries undergoing rapid inflation, a major import item has been the value of new bank notes.

The negative effects of inflation have been widely noted. Its characterization as a “tax” is more than symbolic. In addition to the widely noted redistributive effects of inflation, it is also seen, particularly in low-income countries, as the “the cruelest tax on the poor”.

The capital loss on fixed-value liabilities has been widely ignored in discussions of seignorage and the inflation tax. When a nation makes a commitment to repay a foreign liability, it assumes a number of risks. International interest rates may rise, or the exchange rate may depreciate. Both of these raise the cost of debt service. The former increases the cost in foreign exchange. As already noted, the latter increases the cost in domestic currency.

Currency substitution is one of several consequences of inflation (and the inflation tax) that is not widely treated as an adverse effect of seignorage. Nonetheless, asset substitution enables the public to sharply reduce its holdings of local financial instruments. Due to the increasing globalization of financial markets, asset substitution has become so cheap and convenient that asset holders can readily insulate their income and wealth from the effects of local

monetary disruption.

Capital flight represents a direct transfer of wealth from a particular country. Since the mid-1970s, billions of dollars have been transferred out of African countries. It is one explanation for the rapid increase in foreign debt. It also helps explain why investment rates have declined so precipitously and real per capita incomes have fallen so extensively.

The dynamic efficiency costs of financial repression have been widely studied. A common response by governments to the distortions created by financial repression is to impose further controls. This simply intensifies the degree of repression. Such “cascading” of restrictions aggravates the economy’s financial problems since it does nothing to address the source of the distortions.

Rapid inflation damages the reputation of the fiscal and monetary authorities and undermines their effectiveness. This is evident in general public’s loss of confidence in the competence, integrity, and fairness of the monetary authority. Asset holders do not readily forget their government’s monetary irresponsibility.

A major cost stemming from the loss of confidence is the time and effort needed to induce firms and individuals to reconvert their wealth into local financial assets. A major constraint to the promotion of financial reform in Africa

over the last two decades has been that few governments, or their monetary authorities, behave as though they appreciate the importance of the standards they need to meet if confidence is to revive.

How Should the Benefits and Costs be Measured? Tracing the full impact of any general equilibrium phenomenon such as rapid reserve money growth — and the seignorage and inflation tax associated with it — is difficult. Research conducted under the EAGER project has provided a number of estimates of the relative costs and benefits involved. One approach has been to decompose the changes in key reserve money “formation factors”. Another has been to construct a small-scale simultaneous equation model that captures the relationships over time among changes in reserve money, exchange rate depreciation, and inflation.

Neither of these approaches provides definitive estimates of the benefits and costs of seignorage. Nonetheless, they illustrate for senior policy makers that the costs of rapid reserve money growth in developing countries can be exceedingly high with, at best, modest offsetting benefits.

This policy brief is based on EAGER Research, *Seignorage in Highly Indebted Developing Countries, 1999*, by Malcolm F. McPherson [mmcphers@hiid.harvard.edu], Harvard Institute for International Development, Cambridge, Massachusetts.

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