

Resource Curse and Sovereign Debtⁱ

Mare Sarr Erwin Bulte Chris Meissner Tim Swansonⁱⁱ

“Countries don't go out of business....The infrastructure doesn't go away, the productivity of the people doesn't go away, the natural resources don't go away. And so their assets always exceed their liabilities, which is the technical reason for bankruptcy. And that's very different from a company.” Walter Wriston (Citicorp Chairman, 1970-1984)

1 Introduction

An extensive literature documents that resource wealth can be a curse rather than a blessing for many countries. Until the eighties, the general view among economists and political scientists was that a large endowment of natural resources has a positive impact on a country's development prospects. Yet, over the past forty years, casual observation and statistical studies indicate that natural resources often fail to deliver the expected economic benefits. On the contrary, resource wealth seems to impede the economic performance of many countries. In a series of highly influential papers, Sachs and Warner (1995, 1997) present empirical evidence suggesting that natural resource wealth (measured by the GDP share of primary export in 1971) may be negatively associated with per capita GDP growth (see Figure 1). Various explanations have been offered ranging from the Dutch disease, rent seeking, increased indebtedness (Manzano and Rigobon 2001), domestic conflict and political instability (Collier and Hoeffler 2004), and autocratic regimes and poor institutions (Ross 2001; Isham *et al.* 2005).

Our research contributes to a better understanding of the curse of natural resources by focusing on international credit market imperfections and institutional failures within resource-rich economies. In particular, we wish to examine how excessive resource-based lending by external financial institutions can induce debt, default and regime change in autocratic developing countries. Moral hazard in the financial markets on the part of borrowers and lenders leading to excessive lending to sovereigns has been noted previously (Bulow 2002). The connection between inefficient lending, natural resources and political instability is less clear.

The starting point for our work is a casual look at the data which confirms there is a strong connection between international lending and commodity prices.. Figure 2 shows the evolution

of average lending and resource rents between 1970 and 2000. The lending curve mirrors the resource rents curve. This supports earlier claims that international financial markets lend money during commodity “booms” and restrict liquidity during “busts”. The evolution of these two indicators is indicative of the “boom-based borrowing capacity” highlighted by Usui (1997), and Manzano and Rigobon (2001). The latter argue that large credits offered on resource-based collateral in periods of commodity boom resulted in substantial debt overhang when commodity prices fell in the 1980's which may have led to the resource curse.

The paper is organized as follows. Section 2 reviews the resource curse literature focusing on the relationship between natural resource wealth and unsound lending. In section 3, we present a mechanism through which foreign lending to unchecked rulers in resource-rich nations may result in political instability and impede economic growth as well as the empirical evidence that supports our prediction. Section 4 concludes.

2 Some Pieces of the Puzzle from the Previous Literature

Sachs and Warner's statistical analysis confirms the findings made in earlier case studies documenting the apparent paradox that the resource boom in the seventies and early eighties did little to improve the growth prospects of primary commodity exporters (Gelb & Associates 1988; Auty 1994). A number of cross-country studies following Sachs and Warner have found evidence of the resource curse—Leite and Weidmann (2002), Isham *et al.* (2005), Bulte *et al.* (2005). These seemingly robust findings constitute a puzzle to analysts. More resources provide more options to a country and therefore should make it better off or at least as well off. If it was not the case, the possibility of leaving the resources in the ground is always an option. It is also a puzzle in light of economic history. Countries such as the United States, Canada or Australia heavily relied on their large resource endowment and primary commodity exports at earlier stages of their development. For these countries, resources proved to be a blessing or at least did not prove to be a curse.

The crucial question is what accounts for the apparent poor economic performance of resource-rich countries since the seventies? There are at least four different explanations for the so-called resource curse: *(i)* autocratic regimes and poor institutions (Ross 2001; Isham *et al.* 2005), *(ii)* increased indebtedness (Manzano and Rigobon 2001), *(iii)* domestic conflict and political instability (Collier and Hoeffler 2004), and *(iv)* Dutch Disease (Sachs and Warner 1995). We will only discuss the first two explanations which are relevant to our analysis.

The first explanation comes from Ross (2001) who addresses the question of the curse by exploring the link between resource abundance and political regimes. He finds evidence that oil and mineral wealth lead to less democratic regimes. There are two important channels. The first

channel is the so-called “rentier state effect” which holds that oil revenue can be used to sustain authoritarian regimes through low taxation and spending on patronage. The second channel is the “repression effect” whereby authoritarian regimes in oil-rich countries seek to remain in power by relying heavily on defense and security expenditures. Thus, natural resource intensity may lead not only to lower growth, but it may also impede democracy.

The second explanation points to the relationship between resource wealth and debts (Usui 1997; Manzano and Rigobon 2001). Usui (1997) provided a case study on two oil-rich countries Indonesia and Mexico that sheds light on this link. He found that both Indonesia (in 1975) and Mexico (in 1978-1982) became attractive customers in the international credit market, and took advantage of the drastic improvement of the borrowing capacity during the periods of the boom of their resource sector. This unsound “boom-based borrowing” and lending resulted in the Pertamina crisis in 1975 in Indonesia and to Mexico's debt crisis in 1982.

Manzano and Rigobon's argument is based on debt overhang triggered by imperfect capital markets where credit is based on collateral, and where resource stocks might serve as collateral. In the 1970s and early 1980s, international banks, such as Citicorp and Chase Manhattan, lent vast amounts of money to developing nations based on their natural resource endowment, virtually irrespective of their ability to repay such debts (Sampson 1982). The boom in resource prices in the 1970s increased the value of in situ resources, stretching the ability of resource-rich economies to attract foreign loans and run up debts. When resource prices subsequently came down, international credit became scarce and debt servicing turned out to be problematic with adverse consequences for growth.

The third explanation was popularized by Collier and Hoeffler (1998 and 2004). They argue that the presence of easily appropriable natural resources has a destabilizing effect in that it exacerbates power contest and violent conflicts. Their results suggest that resource abundance increases the likelihood of a civil war albeit non-monotonically. However, these results have been recently challenged both by political scientists (Fearon 2005) and economists (Brunnschweiler and Bulte 2009).

The fourth explanation points to the Dutch Disease (Neary and van Wijnbergen 1986). The theory postulates that the rapid growth of primary exports will cause exchange rate to appreciate, which in turn induces a contraction in manufacturing exports, or draws capital and labor away from manufacturing. This eventually results in poor economic performance. This theory, however, rests on the crucial assumption that the contraction in the manufacturing sector, the engine of growth, outweighs the boom in the resource sector.

While all four of these leading explanations have been informative, there is still a missing link. No research we are aware of has studied how governments make the joint choice regarding debt, investment, resource reliance, and oppression. The normative solution turns out to depend on a

number of interesting inter-temporal trade-offs. Interestingly, we find strong support for such a stylized model in a data set covering a panel of 44 countries between 1972 and 1999.

3 Mechanism and Empirical Results

This section elaborates upon the mechanisms by which resource-based lending contributes to low growth and political instability. A fundamental driver in our paper is moral hazard: international financial institutions perceive no downside risk to lending on the basis of resource-based collateral. Lenders have little reason to be concerned about the incentives their loans generate since the collateral, (i.e. the resources) remains behind even when the regime changes (see the quote above).

Our view is that the resource curse can manifest itself as a form of looting. , Akerlof and Romer (1994) proposed the idea of looting – bankruptcy at public expense and personal emolument – to describe the S&L crisis of the 1980s in the United States. In our model, states hold their natural resource stocks directly as sovereign assets so that no private entities (corporations, individuals) hold rights to these resources. The potential for poor governance is present in the form of an unchecked ruler with implicit property rights in the resources of the state. We are interested in how such an autocrat will elect to achieve a payout on these property rights and, in particular, the impact of lending market imperfections upon the dictator's choice between staying and looting. Staying involves the dictator's commitment to acquiring a return by holding onto power and investing in the country. Looting involves opting for a short term “hit and run” strategy of maximum indebtedness, minimal investment, and immediate departure.

To gain the ability to loot, dictators must have the opportunity to leverage or “liquefy” their real assets. International financial institutions (banks, multilateral institutions, bond markets) consider natural resource stocks implicit collateral for their loans, and provide “liquidity” to resource-rich states in recognition of the expected future flows of value from the resource base. The discussion in the literature of odious debt highlights that contracts entered into by a ruler continue as obligations of that state beyond the individual tenure of that ruler (Jayachandran and Kremer, 2006).

The ruler of the state concerned has unchecked power over the resource wealth and other assets of the state for the duration of his tenure. His problem is to determine how best to appropriate maximum personal benefit from his period of tenure over these resources. The basic decision comes down to whether to abscond with maximum liquidity today, or whether to stay and invest in tenure and productivity of the non-resource-based economy in order to acquire a return from holding control over the productive capacities of the enterprise in the future. The ruler can affect the length of his tenure by means of investments in societal betterment and/or repression but

faces the possibility of being ousted, and losing everything along with his loss of control. Thus, international lending gives the ruler the option of liquefying some additional proportion of the state's resource wealth, at the cost of an increase in the state's debt.

The dictator's fundamental trade-off concerns the refusal of amounts currently appropriable from the economy (via liquidity and looting) in pursuit of the amounts potentially producible in future periods (via investment and retention of tenure). The incentives to loot or to invest are determined by: a) the rate of return on investment; b) the security of the autocrat; and c) the level of liquidity on offer. The optimal tenure of a dictator is more than one period, only if there is sufficient security and expectation of returns to render investment the preferred option. Our paper demonstrates how an inefficient sovereign debt contract (Bulow and Rogoff 1989; Kletzer and Wright 2000) is capable of inducing political instability and default, and demonstrates what is “excessive” liquidity in the context of a resource-rich but autocratic state.

We provide simulations to illustrate how liquidity is able to induce instability and hence underinvestment and lack of growth. These simulations demonstrate that an incoming autocrat may act as an “owner” or as a “thief” in regard to the economy, depending upon the level of liquidity on offer. Low levels of liquidity maintain the incentives to stay and to invest as the owner of the economy. The returns from control are secured by staying on the scene, maintaining control and securing the flow of returns from earlier investments (see Figure 3). On the other hand, high levels of liquidity act as a prize to the winner of the contest for control, and create incentives for an ongoing system of hits and runs (see Figure 4). The returns from control in this case are secured simply by virtue of having control of the economy—then the banks pay the prize and the contest winner exits the stage.

Our key prediction is that unstructured lending into a country with resources heightens the incentive to loot and under-invest in the economy. This leads to slow economic growth due to lower investment. This result translates into empirically observable outcomes regarding lending, political instability, and economic growth.

To test our hypothesis, we use a sample of 44 autocracies between 1972 and 1999. Following Londregan and Poole (1990) and Alesina et al. (1996), we estimate two equations: a) the probability of political instability (or looting), and b) annual economic growth. The key determinants of looting are resource stocks, foreign lending and their interaction. Our looting prediction would be substantiated if the marginal effect of lending in the presence of high resources were to be positive. Our growth equation includes determinants standard to the empirical growth literature (including a control for the Dutch Disease hypothesis) augmented with our looting indicator. We are interested in the indirect effect of lending and resources on growth due to political instability which we identify as partially associated with looting behavior.

Our estimation results are consistent with our theoretical model. We find that the marginal impact of lending is positive and hence associated with a greater likelihood of turnover. This

effect becomes more significant the greater the resource wealth. We also find a substantial rise in the predicted probability of looting (from 0.07 to 0.15) in resource-rich countries with poor governance. Both results indicate that greater lending in resource-rich countries is associated with greater political instability.

Furthermore, the effect of our looting indicator, proxied by a non-democratic political turnover is interesting. Here the impact of turnover on growth is negative and statistically significant. We find that output per capita drops by nearly 9% in the year of a political turnover. Since lending and natural resources are partially associated with this turnover, these factors have an impact of incomes and growth. We show that the effect of one standard deviation increase in lending results in an expected decrease in economic growth ranging from 0.47 to 0.72 percentage points. Together these findings provide strong evidence to support our predictions. Lending to resource-rich dictators raises the chance of political instability, leading to low growth.

4 Conclusion and Policy Implications

This paper attempts to unravel a mechanism through which the much-discussed resource curse operates. We view the problem as one of sovereign looting. Our main contribution is to model the impact of credit market imperfections on the inter-temporal choices of dictators in resource-rich countries. Under certain conditions, instability and slow growth are optimal choices for a dictator. Our model suggests that a dictator will be fundamentally influenced in the choice between staying and looting by the level of lending afforded by external banking institutions. The opportunity cost to staying and investing in the economy increases directly with any increase in the liquidity being afforded.

Our story is closely related to the literature on “odious debt” (Jayachandran and Kremer 2006) and on efficient contracts for sovereign lending (Bulow 2002; Kletzer and Wright 2000). Odious debt may result when lending to autocrats results in little for the country concerned other than debt. We have demonstrated here that unstructured resource-based lending is the antithesis of efficient sovereign loan contracting, and odious debts are the result. Our point here is that the indebtedness and poor performance of these resource-rich economies is as much a result of the poor contracting by the financial sector as it is the unchecked power and poor institutions within the debtor regimes. It takes negligence or malfeasance by both the parties to make a bad contract. These bad contracts, together with the weak institutions in the resource-rich nations, create the environment within which non-investment, instability, and debt are generated—hence the resource curse.

The importance of restricting short term liquidity to aid the enforceability of loan agreements has been long-noted (Bulow and Rogoff 1989) as has been the tendency of banks to ignore such

advice (Bulow 2002). The problem is argued to be one of moral hazard in the financial markets, where banks fail to internalize the risks of default because of the belief that sovereign debts will ultimately be “worked out” and particularly those with large amounts of natural resources underlying them.ⁱⁱⁱ The failure of the financial sector to internalize these risks places these costs upon the peoples of the countries concerned.

There are many approaches advocated to deal with this sort of moral hazard. Bulow (2002) believes that the problem is traceable, fundamentally, to the intervention of central banks and fiscal authorities in rescuing commercial banks and other creditors from defaults. Lenders engage in moral hazard in these lending practices on account of a fundamental failure of belief in the possibility of default. He recommends that banks should be made to execute loan agreements under domestic laws, enforceable only in domestic courts, in order to ensure that the debtor state's interests are taken into consideration. It is also argued by some that advance due diligence in lending should be a requirement for the enforceability of the resulting debt (Jayachandran, Kremer and Schafter 2006). The result of requiring such a process would presumably be lower lending and lower incentives to loot the resources of nation.

One other possibility is to require that loans come more in the form of structured obligations relying on specific investments rather than general assets. This would ensure that banks required hard investments as a result of loans, and that these investments were of a sort that could generate returns to the bank. It may also be more appropriate to encourage FDI rather than sovereign funding for local enterprises, again rendering recourse to domestic institutions necessary. All of these approaches may reduce the availability of debt in general, but our analysis indicates that this may be a good thing.

References

Akerlof, G. and Romer, P. 1994. “Looting: the economic underworld of bankruptcy for profit.” *NBER Working Paper*, No. R1869, Cambridge MA.

Alesina A., Özler, S., Roubini, N. and Swagel, P. 1996. “Political instability and economic growth.” *Journal of Economic Growth*, 1: 189-211.

Auty, R.M. 1994. “Industrial Policy Reform in Six Newly Industrializing Countries: the Resource Curse Thesis”. *World Development*, 22(1): 11--26.

Brunnschweiler, C. and Bulte, E.H. 2009. Natural Resources and Violent Conflict: Resource Abundance, Dependence and the Onset of Civil Wars. *Oxford Economic Papers*, 61: 651-674

- Bulow, J., 2002. First world governments and third world debt. *Brookings Papers on Economic Activity*, Vol. 2002(1): 229--255.
- Bulow, J. and Rogoff, K. 1989. "A constant recontracting model of sovereign debt." *Journal of Political Economy*, 97(1):155-178.
- Bulte, E., R. Damania and Deacon R. 2005. "Resource Intensity, Institutions and Development." *World Development*, 33: 1029-1044
- Collier, P. and Hoeffler, A. 2004. "Greed and grievance in civil war." *Oxford Economic Papers*, 56(4): 563-595.
- Fearon, J. D. 2005. Primary Commodity Exports and Civil War, *Journal of Conflict Resolution*, 49(4): 483--507.
- Gelb, A.H. and Associates. 1988. *Windfall Gains: Blessing or Curse?*, New York: Oxford University Press.
- Isham, J., Woolcock, M., Pritchett, L. and Busby, G. 2005. "The varieties of resource experience: Natural resource export structures affect the political economy of economic growth." *World Bank Economic Review*, 19: 141-174.
- Jayachandran, S. and Kremer, M. 2006. "Odious debt." *American Economic Review*, 96(1): 82-92.
- Jayachandran, S., Kremer, M. and Shafter, S. 2006. "Applying the odious debt doctrine while preserving legitimate lending." Paper presented at the Center for International Development.
- Kletzer, K. and Wright, B. 2000. "Sovereign debt as intertemporal barter." *American Economic Review*, 90(3): 621-639.
- Klingen, C.A., Weder, B. and Zettelmeyer, J. 2004. How private creditors fared in emerging debt markets, 1970-2000. IMF Working Paper, WP/04/13.
- Leite, C. & Weidmann J. 2002. "Does mother nature corrupt? Natural resources, corruption and economic growth." Chapter 7 in Abed, G. & S. Gupta (eds.): *Governance, Corruption, and Economic Performance*, Washington DC: International Monetary Fund, 159-196.
- Londregan, J.B. and Poole, K.T. 1990. "Poverty, the coup trap and the seizure of executive power." *World Politics*, 42: 151-183.
- Manzano, O. and Rigobon, R. 2001. "Resource curse or debt overhang?" *NBER Working Paper* No 8390, Cambridge MA.
- Neary, J.P. and van Wijnbergen, S. 1986. *Natural Resources and the Macroeconomy*, MIT Press, Cambridge, MA.

Ross, M. 2001. "Does oil hinder democracy." *World Politics*, 53: 325-361.

Sachs, J., and Warner, A. 1995. "Natural resource abundance and economic growth." *NBER Working Paper 5398*, Cambridge MA.

Sachs, J. D., and Warner, A. 1997. Sources of slow growth in African economies. *Journal of African Economies*, 6: 335-376.

Sampson, A. 1982. *The Money Lenders: Bankers and a World in Turmoil*. New York: Viking Press.

Sarr, M., Bulte, E., Meissner, C. and Swanson, T. 2010. "On the looting on nations." *Public Choice*, Forthcoming.

Usui, N. 1997. "Dutch Disease and policy adjustments to the oil boom: A comparative study of Indonesia and Mexico." *Resource Policy*, 23: 151-162.

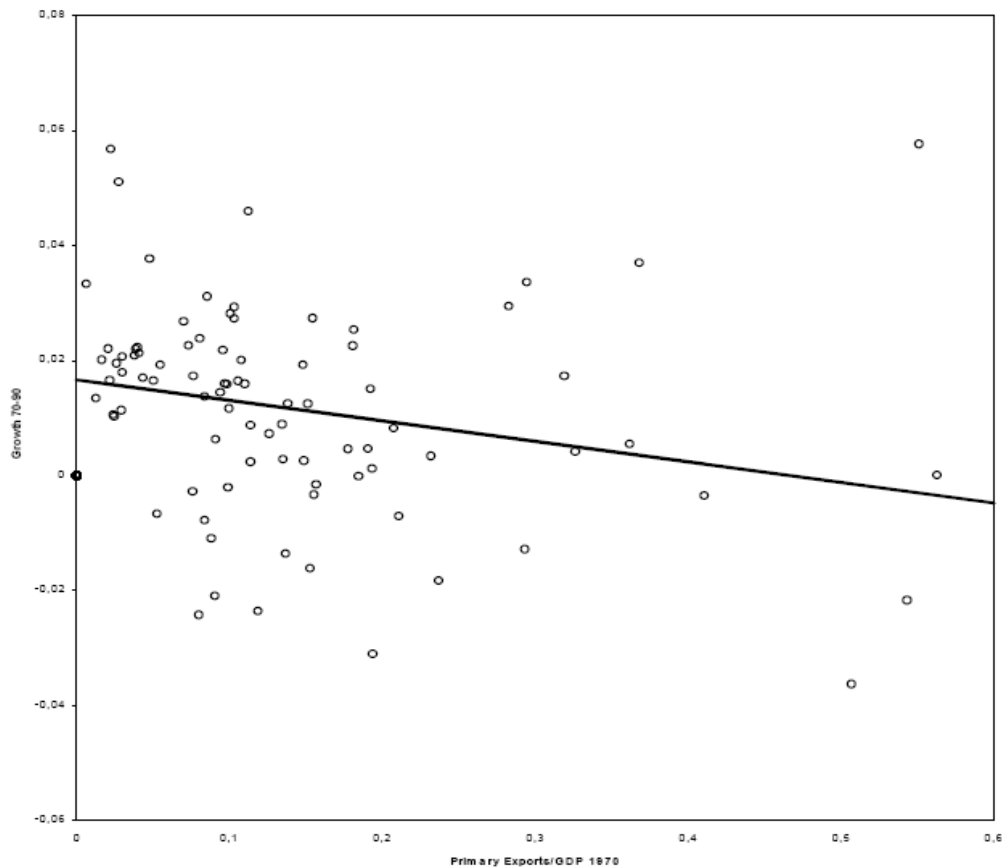


Figure 1: Natural Resource Abundance and Growth

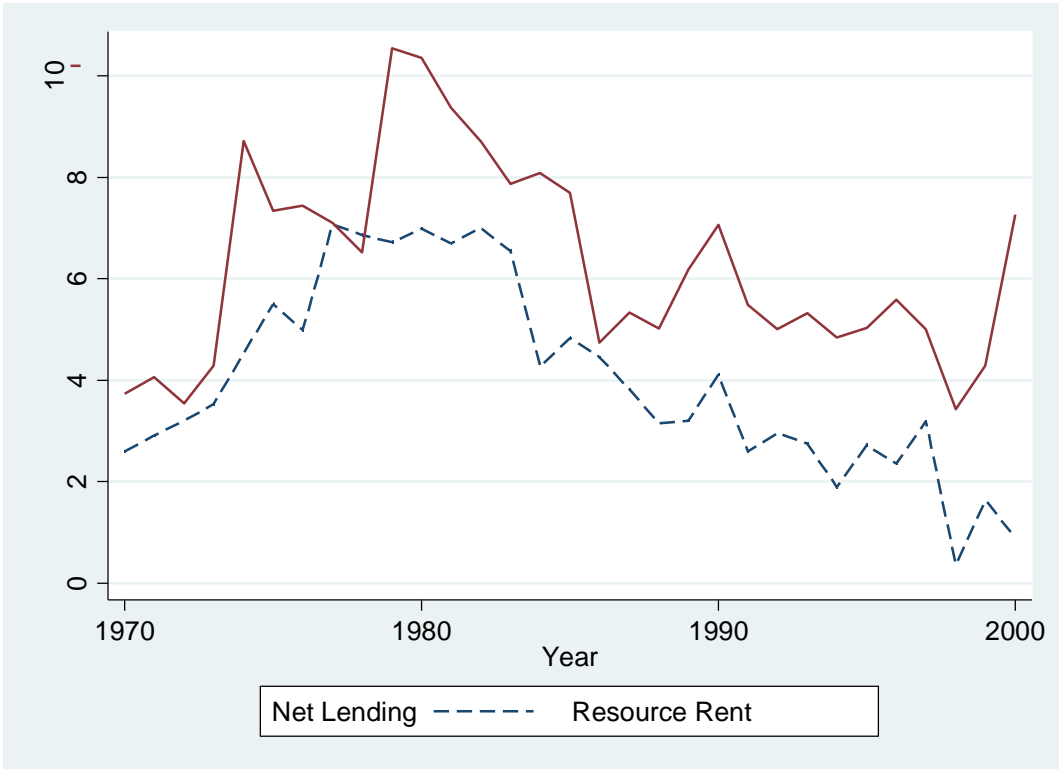


Figure 2: Evolution average net lending and resource abundance

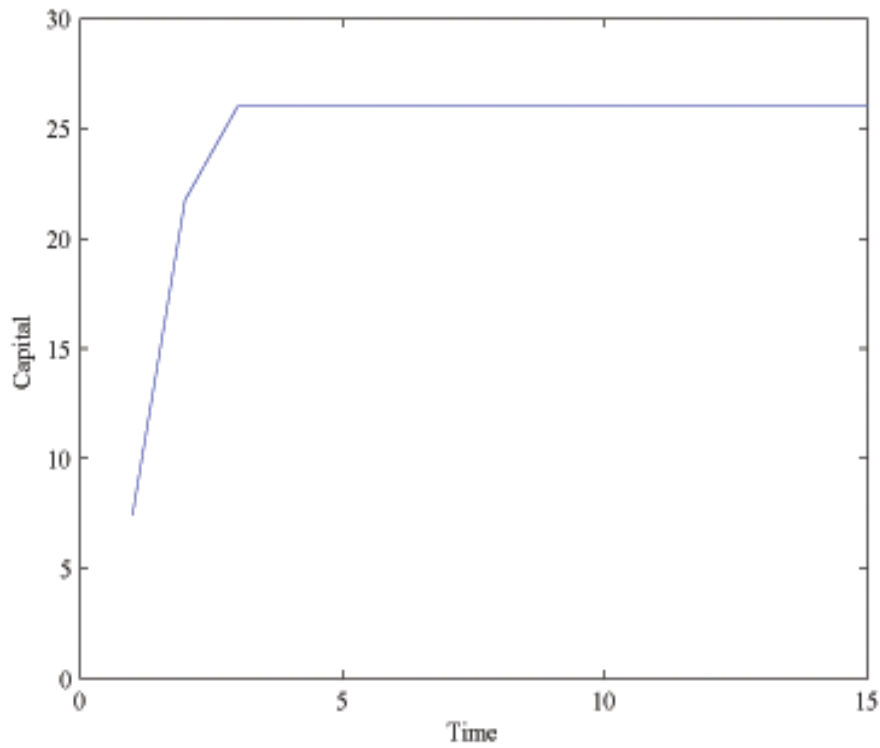


Figure 3: Simulation of capital accumulation without unstructured lending. The dictator chooses to accumulate capital and growth is high. The steady state level of capital is reached quickly and growth is stable.

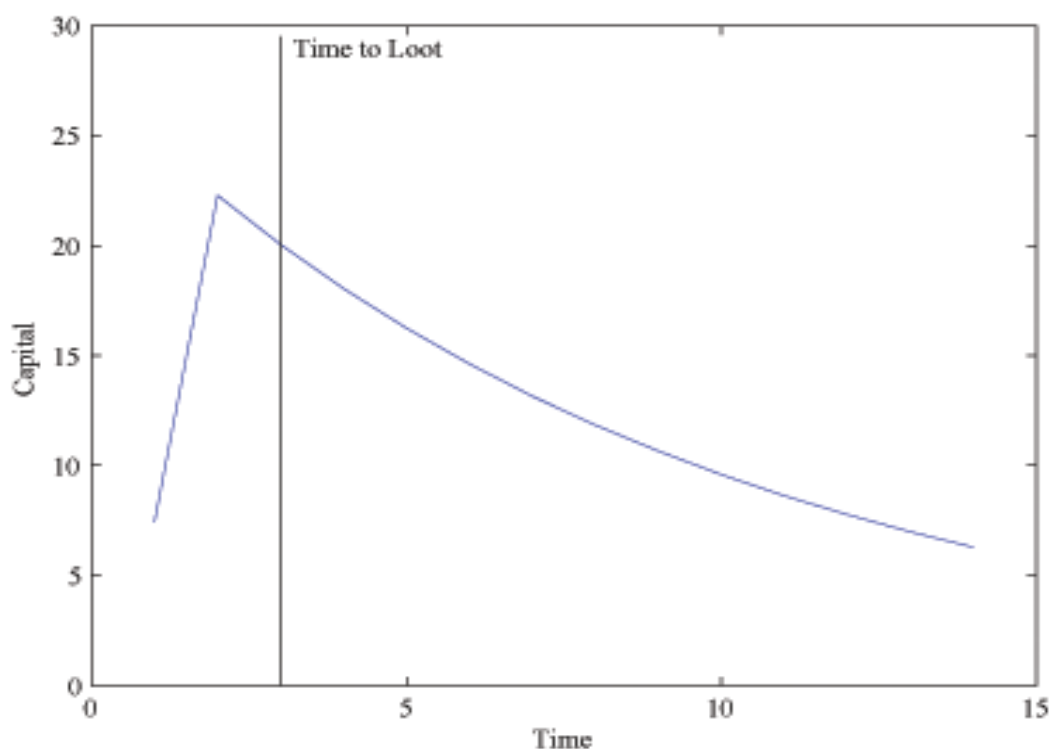


Figure 4: Simulation of capital accumulation when lending is unstructured. The dictator invests less than needed to achieve steady state, borrows heavily to consume privately and departs/loots in order to avoid rebellion and zero utility. He can then continue consuming from the proceeds of prior lending. The country's growth slows subsequent to this due to non-investment from future rulers

¹ This paper is an abridged version of Sarr, *et al.* (forthcoming). We would like to thank, Toke Aidt, John Hartwick, Chris Knittel, Chen Le-Yu, Simon Lee, Lars Nesheim, Nicola Pavoni, Imran Rasul, Ragnar Torvik, , and seminar participants at the University of Birmingham, University College London, University of Oxford, University of Cape Town, University of Warwick, Cornell University, Venice University, UCLA, Stanford GSB, and the Indian Statistical Institute Delhi for their valuable comments. We also thank Kirk Hamilton and Giovanni Ruta for sharing their data on natural resources with us. Public Choice Editor in Chief William Shughart and anonymous reviewers also provided helpful comments. Finally, Mare Sarr gratefully acknowledges financial support from Economic Research

Southern Africa (ERSA) and Erwin Bulte would like to thank the Dutch Organization for Scientific Research (N.W.O.) for financial support (grant nr. 452-04-333). The usual disclaimer applies.

ⁱⁱ Mare Sarr: School of Economics and Environmental Economics Policy Research Unit, University of Cape Town, Private Bag, Rondebosch 7701, South Africa, e-mail: mare.sarr@uct.ac.za

Erwin Bulte: Department of Economics, Tilburg University and Wageningen University, P.O. Box 8130, 6700, EW Wageningen, The Netherlands, e-mail: erwin.bulte@wur.nl

C. Meissner: Department of Economics, University of California, Davis, CA 95616, USA, e-mail: cmmeissner@ucdavis.edu

T. Swanson: Department of Economics and Faculty of Laws, University College London, London, WC1E 6BT, UK e-mail: tim.swanson@ucl.ac.uk

ⁱⁱⁱ Empirical work documents that private holdings of sovereign debt are not harmed by the fact of default. As Kltingen et al. (2004) have demonstrated, “the strategy of rolling over and waiting for a debt restructuring with official backing seems to have worked well in containing losses and even making profits in some cases. From the banks’ perspective, the write downs (...) were offset by the high prices of the restructured instruments, i.e., an expectation that the new claims would probably be honored.”