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After the Boom:
Volatility and Development in Botswana's Resource-Dependent Economy

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ABSTRACT:
This paper re-examines a frequently cited example of how valuable natural resources can support development: Botswana. In the decade that followed Botswana's transition to independence in 1965-66, the government negotiated the development of significant gem-quality diamond mines with the De Beers-led international diamond cartel. The unusual length of Botswana's diamond boom and the stability of international diamond prices contributed to Botswana's subsequent record of prolonged economic growth. With the De Beers' cartel, however, diamond markets have become more volatile. Will Botswana be able to sustain its developmental record as it confronts the greater difficulty of managing the end of the boom period of diamond development and an increasingly volatile revenue stream?

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The "resource curse" or "paradox of plenty" links highly valuable natural resources with negative developmental outcomes, including lower long-term rates of economic growth, authoritarianism, corruption and poor quality governance, and civil conflict (e.g., Collier and Hoeffler 2005; Karl 1997; Sachs and Warner 2001; Ross 2001). However common these problems are in countries with valuable natural resources, they are not universal. Indeed, natural resources appear to bolster development in some countries (Haber and Menaldo 2011; Mehlum et al. 2006; van der Ploeg 2011). The most commonly cited exceptions to the resource curse include Norway and Botswana (e.g., Acemoglu et al. 2003; Auty 2001; Boshini et al. 2007; Dunning 2005; Haber and Menaldo 2011, 6; Iimi 2006; Mehlum et al. 2006, 1; Robinson et al. 2006; Ross 2001, 357; Sachs and Warner 2001, 827; van der Ploeg 2011, 368; Venables 2016; Weinthal and Jones Luong 2006). While Norway's success might be attributed to its pre-boom level of political economic development, the same cannot be said for Botswana. Diamonds contributed to the country's transformation from one of the poorest countries in the world at independence in 1966 into a middle income country by the 1990s. Despite its heavy dependence on diamond mining, Botswana has enjoyed not only rapid and sustained economic growth, but also political stability with regular multi-party elections.

Ross (2012, 2015) has argued that, if there is a resource curse, it is not a generalized curse associated with natural resource wealth, but an oil curse. Indeed, the countries regularly cited as suffering from the resource curse are exporters of oil and other petroleum products. Botswana, however, is not an oil producer; rather, it is one of the most important producers of gem-quality diamonds. While diamonds and petroleum share some characteristics, global markets for these two commodities contrast sharply. Where oil prices have fluctuated dramatically, diamond prices have been unusually stable, at least until recently. Diamond prices were essentially constant from 1980 to 1985, increased by approximately 30% between 1985 and 1989, and then remained steady through at least 1998 (Spar 2006, 197).[1] As other resource-rich countries struggled with multiple booms and busts, Botswana enjoyed two decades of expanding production with relatively stable prices. Given these differences, does it really make sense to present Botswana as an exception to the resource curse?

This paper highlights the exceptionality of diamond markets compared to oil and other commodities, documents changes in global markets for gem-quality diamonds, and analyzes interactions between global market conditions and the political economy of diamond mining in Botswana. It is only since the 1990s, when Botswana's diamond boom ended and De Beers began to lose control over diamond markets, that resource dependence has presented a significant challenge for Botswana`s development. How well is Botswana adapting to changes in the fundamental economic challenges it confronts? An evaluation of the implications of shifts in the volatility of diamond markets for Botswana's macroeconomic performance offers insight into the appropriateness of presenting a diamond producer as an exception to a record of poor developmental performance associated primarily with the experience of oil producers.

[1] Spar (2006) does not specify whether these are real or nominal prices.

The paper proceeds in five steps. First, we clarify the phenomenon under consideration, highlighting distinctive features of oil and diamonds. Second, we review the arguments and evidence linking macroeconomic volatility to variable developmental trajectories, both in countries with valuable natural resources and more generally. Third, we elaborate on changes to international diamond markets since the 1990s and evaluate the implications for international diamond prices, Botswana`s diamond revenues, and the country's macroeconomic challenges. Fourth, we evaluate the adequacy of the policy responses actually made and their implementation. Fifth, we assess the relative contribution of the life-cycle of mineral developments, increased market volatility, policies and institutions, and political dynamics to Botswana`s economic and political developmental performance.

Natural Resources, Oil, and Diamonds

What is it about valuable natural resources that influences political and economic development? In every day usage, natural resources encompass renewable and non-renewable resources, agricultural commodities, wildlife, and mineral resources. These resources, however, differ in many ways that are relevant for socioeconomic and political development. While price volatility has historically affected a wide variety of both agricultural commodities and minerals, the management of non-renewable resources involves decisions about the timing and pace of extraction and preparations for eventual depletion that do not affect renewable resources.[2] The market value of natural resources varies considerably, as does the extent of global and local market concentration and regulation or liberalization.

As Ross (2012, 2015) underlines, most of the research on the political resource curse is really about an *oil* curse. Even quantitative investigations of the economic resource curse that speak to diverse types of natural resources often rely primarily on data about oil and petroleum products. The characteristics of oil, however, are somewhat distinctive, even among point-source extractive resources (Ross 2015).[3] The dependence of modern industry on oil makes this resource particularly valuable both strategically and in terms of global prices. Of 55 oil and gas producing countries in 2009, almost half (25) earned more than $1000 per capita in oil and gas revenues; oil and gas revenues topped $500 per capita in an additional 8 countries. (Ross 2015, 20 – 22). In many oil producing countries, at least 50% of oil and gas revenues represent rents (Ross 2015, 35 – 26). The dynamics of recurring but imperfect efforts at oligopolistic regulation have exacerbated price booms and busts, with consequences for the global economy.

Diamonds, especially the kimberlite diamond pipes[4] found in Botswana, share some important features with oil; both are typically high rent, relatively easily centralized resources that require capital-intensive extraction. Table 1 demonstrates that the scale of revenues from Botswana's

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[2] For renewable resources, the concern is with maintaining the sustainability of the resource system.

[3] Ross (2015) recognizes that rents vary with geological conditions, but uses revenues per capita to measure the scale of revenues. He distinguishes between revenues from taxes on goods and services on the one hand, and royalties, concession fees, and transfers from nationalized companies, characterized as non-tax revenues (Ross 2015, 33, fn 5).

[4] Kimberlite diamond pipes are subsoil deposits that have a pipe-like form. Alluvial diamonds, by contrast, have come to the surface and been dispersed through erosion and the flow of water. Consequently, they are generally more accessible to artisanal miners.

diamond exports is comparable to that of major oil and gas exporters. While Botswana has not nationalized its diamond industry, the government holds a 50 percent share in the major diamond mining company, Debswana, and is the sole owner of the Okavango Diamond Company, a diamond trading company launched in September 2013. The global trade in diamonds is even less transparent than that in oil. But oil and diamonds differ markedly in terms of market conditions and, especially, price volatility.

Table 1: Total oil and gas revenues for selected countries, 2009 and Botswana's total diamond export revenues, selected years

Country	Year	Income per capita
Oil producers – total income[5]		*2009 dollars*
Kuwait	2009	19,500
Norway	2009	13,810
Saudi Arabia	2009	7,800
Canada	2009	2,530
Angola	2009	2,400
Russia	2009	2,080
Venezuela	2009	2,130
Algeria	2009	1,930
Nigeria	2009	370
Indonesia	2009	140
USA	2009	730
Diamond – total exports[6]		*2006 dollars*
Botswana	1991	1104
Botswana	2001	1166
Botswana	2011	2207

What makes a natural resource valuable? From a global perspective, the value of a natural resource depends on its scarcity relative to demand, role in the global economy, and the availability of acceptable substitutes. For producers, the value of natural resources depends on their contribution to the domestic economy. The literature on the resource curse conceptualizes value primarily from the producer's perspective. Scholars variously depict the phenomenon of interest as one of natural resource *abundance* (i.e., wealth) or natural resource *dependence*. Although some scholars treat natural resource abundance and dependence as synonymous, they

[5] Ross (2015) identifies these eleven countries as major oil exporters (35) and provides calculations of their total oil and gas revenues per capita (20 – 22). Qatar had a higher per capita income from oil and gas in 2009, at $24,940, but was not categorized as a major oil exporter.

[6] Calculations based on total exports in 2006 US dollars (Bank of Botswana 2000, 2010, 2018) and decennial census data (Statistics Botswana 2016, 34). These figures include exports of rough and polished diamonds, including re-exports. Data are not available for total revenues, which would include revenues for domestic trade. [Domestic revenues include sales to Botswana-based polishers. Polished exports have represented more or less 10% of total exports over the past decade. Presumably revenues from sales to polishers would be lower than this. We will be recalculating these figures, excluding revenues from re-exports].

are not (Brunnshweiler and Bulte 2008; Dauvin and Guerreiro 2017, 214). The US, for example, is rich in natural resources, but the performance of its highly diversified economy does not depend on natural resources. On the other hand, a country with a small and relatively undiversified economy may depend heavily on natural resource revenues even if it produces a minuscule fraction of global supply. Natural resource dependence is not an exogenous condition, but rather reflects both investments in developing natural resources - including prospecting - and the health of other sectors. These conditions in turn depend on the overall state of the economy and the political economic environment, so that there is a feedback relationship between natural resource dependence and development (Brunnshweiler and Bulte 2008; Dunning 2005; Ross 2015). On the other hand, known natural resource endowments or even new discoveries are equally endogenous; data on natural resource endowments and new discoveries reflect investments in prospecting and development, which in turn reflect the political economic context (Brooks and Kurtz 2016; David and Wright 1997; van der Ploeg and Poelhekke 2017). In addition, it is not generally financially viable to "prove" reserves (i.e. upgrade them from indicated or inferred status) more than 15-20 years ahead of intending mining operations.

Even if there were measures of natural resource endowments that avoided problems of endogeneity, abundance and dependence are not synonymous (Brunnshweiler and Bulte 2008). Arguments about natural resource wealth or abundance are essentially arguments about a more or less fixed attribute of countries. The level of natural resource abundance may change with the depletion of non-renewable resources, or with the degradation of renewable natural resources, but scholars have conceptualized it as if it were relatively stable, as reflected in references to resource endowments. In operationalizing natural resource abundance with data from a single year and analyzing its relationship to average GDP growth for several decades thereafter, Sachs and Warner (2001) and Mehlum et al. (2006) downplay both the possibility of later resource booms and their influence on long-term growth. This conceptualization of the role of natural resources sits uneasily with both empirical evidence of considerable volatility in commodity prices and explanations that point to unmanaged volatility in revenues as a mechanism by which natural resources influence development. The arguments about the developmental implications of valuable natural resources direct attention to the political and economic challenges of managing large infusions of capital from these resources, especially when those flows of income are volatile. These dynamics concern flows of revenues, not stocks. Measures of resource dependence capture these dynamics better, in general, than do measures of resource wealth.[7] Thus, this paper deals with natural resource *dependence*, both for the overall economy (e.g., as a fraction of GDP or of exports) and for government revenues (i.e., share of government revenues). I acknowledge endogeneity, incorporate it into the theoretical argument, and evaluate it empirically through qualitative case analysis.

Thus, while recognizing that agricultural commodities and renewable natural resources also affect development, this paper focuses on the political economy of point-source non-renewable natural resources that at some point generate substantial rents, emphasizing that market conditions differ across commodities and over time. We both underline the historical

[7] Although data on new oil or mineral discoveries are characterized as data on natural resource abundance, they enable analysis of economic and political dynamics prior to the discovery, between the discovery and beginning of production, and post-production and thus of changes – actual and anticipated – in flows of revenue. See review in van der Ploeg and Poelhekke (2017, 207).

distinctiveness of global markets for gem-quality diamonds and analyze recent changes in those markets.

The Political Economy of Valuable Natural Resources

To make sense of variation in the developmental effects of valuable natural resources, scholars have pointed to the macroeconomic challenges associated with natural resources (e.g., Cavalcanti et al 2015; Corden and Neary 1982; Sachs and Warner 2001; van der Ploeg and Poelhekke 2009), the role of policies and institutions in mediating those challenges (e.g., Acemoglu et al. 2003; Mehlum et al. 2006), and the political conditions that influence institutional development and policy choice (e.g., Bjorvatn et al. 2012; Brooks and Kurtz 2016; Poteete 2009b; Saylor 2014). These arguments echo broader debates about the factors influencing developmental trajectories more generally. While acknowledging other arguments, we now elaborate on and critically discuss arguments related to the life cycle of a boom and market volatility.

Macroeconomic challenges

The sudden infusion of cash at the beginning of a resource boom, the volatility and unpredictability of natural resource earnings, and, at least for non-renewable resources, their eventual exhaustion pose serious challenges for economic management. Economists variously attribute these challenges to the mechanical effects of an unmediated boom on relative prices and patterns of investment, known as the Dutch Disease; to the interaction of these mechanical effects with sectoral differences in learning-by-doing; and to the effects of price volatility on investment decisions by both policy-makers and private actors.

If unmanaged, a resource boom allows a rapid expansion in domestic spending that puts upward pressure on real exchange rates. Real exchange rate appreciation decreases the relative competitiveness of the non-booming traded sector and thus encourages investment in non-traded economic activities.[8] The result is de-industrialization – or sluggish industrialization – and accelerating growth in the weight of the booming sector in export earnings, combined with expansion of the (generally non-traded) service sector. Because the health of the non-traded sector depends on that of the booming sector, these shifts in the sectoral allocation of resources magnify the effects of resource booms and busts and reduce the resilience of the economy when commodity prices drop. Although a resource boom does cause a short but dramatic increase in economic growth, these structural changes mean that the boom will be followed by substantially slower growth, and, even if growth rates eventually recover, a permanently lower level of growth (Sachs and Warner 1999). Dutch disease refers to the negative consequences of the end of a boom.[9]

Some economists argue that the shifts in relative prices and the resultant shifts in the allocation of labor and capital triggered by resource booms are only problematic for development when

[8] Traded sectors and goods are those that compete on international markets, either with imports in domestic markets and as exports on global markets. Non-traded sectors and goods do not compete with imports and cannot be exported. The standard example of a traded sector is manufacturing. Services are typically classified as non-tradable. Some services, however, do compete on international markets.

[9] As Cordon and Neary (1982) demonstrate, whether non-booming traded sectors decline during a boom depends on the pre-boom level of unemployment and the relative capital and labor intensity of various sectors.

they are difficult to reverse, and that they are only difficult to reverse in the context of market failures that impede factor mobility (e.g., Hausman and Rigobon 2002; Venables 2016, 175). For example, the reallocation of labor from traded to non-traded sectors often drives down the relative wages of skilled labor, prompting an under-investment in education by both individuals and policy-makers (Glyfason 2001; van der Ploeg 2011, 368).[10] Likewise, if traded sectors that involve processing – including agricultural processing as well as manufacturing - entail greater learning-by-doing than do booming extractive resource or non-traded sectors (Venables 2016), then shifts away from those sectors imply a loss of economies of scale and positive spill-over effects. In addition, under-developed financial markets restrict the possibilities for smoothing consumption by saving during booms and drawing down savings or borrowing during busts (van der Ploeg and Poelhekke 2009).

A third perspective emphasizes the macroeconomic challenges of volatility in commodity prices and resource revenues rather than the life cycle of developing and eventually depleting a non-renewable resource. As Williamson (2002, 196) observes, "Commodity prices have always been relatively volatile, and commodity exporters have always faced more volatile terms of trade" than exporters of manufactured goods. Challenging the Prebisch-Singer hypothesis that a long-term deterioration in commodity prices implies slower long-term economic growth in resource-dependent countries, Cashin and McDermott (2002) argue that price volatility presents a more serious challenge for commodity producers than any long-term trends in commodity prices. Their analysis of average annual prices for 36 commodities from 1862 to 1999 found that there was a slight downward trend in commodity prices, but that the trend was trivial compared to price volatility.[11] Historically, commodity busts tend to last longer than boom periods (Cashin et al. 2001). From the early 1970s through 1999, the duration of cycles of booms and busts decreased while the degree of volatility increased (Cashin and McDermott 2002). The less diversified a country's economy, the more commodity price volatility translates into macroeconomic volatility.

Whatever its source, macroeconomic volatility constrains economic performance by increasing risk and uncertainty in ways that dampen the absolute level of investment and favor short-term, low-risk low-return investments over longer-term and higher risk investments (Loayza et al. 2007; van der Ploeg and Poelhekke 2009; Williamson 2002). These effects on investment result in lower levels of human and physical capital accumulation (Cavalcanti et al. 2015) and discourage innovation (van der Ploeg and Poelhekke 2009, 735). Loayza et al. (2007) and van der Ploeg and Poelhekke (2009) concur that the developmental implications of volatility depend on the development of financial markets, which strongly shape the possibilities for counter-cyclical macroeconomic management of volatile resource revenues. van der Ploeg (2011, 388) concludes that "Volatility thus seems the quintessence of the resource curse" (see also Cavalcanti et al. 2015; van der Ploeg and Poelhekke 2009).

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[10] An exception to this could be if the resource boom leads to an expansion of the government sector, which is often relatively skill-intensive, although the impact depends on wage policy in that sector. In Botswana there has been investment in skills as a matter of public policy, although arguably not the skills that the private sector needs.

[11] Volatility increased markedly in the early 1900s and again after the abandonment of fixed exchange rates in the 1970s.

Long-term economic performance hinges on economic resilience - the strength and duration of periods of expansion relative to periods of stagnation or decline (Abiad et al. 2015; North et al. 2009). Economic resilience, however, depends not only on export earnings – the magnitude and duration of booms relative to busts - but also on the interaction of a range of domestic and external conditions.[12]

Policies and Institutions

A large body of research links long-term macroeconomic performance to the quality of policies and institutions (e.g., Abiad et al. 2015; Acemoglu and Robinson 2012; Auty 2000, 2001; Mehlum et al. 2006; North et al. 2009; Venables 2016). Institutions that secure property rights and the rule of law foster economic growth by lengthening time horizons and encouraging investment. Policies and institutions that buffer the effects of shocks, such as counter-cyclical fiscal policies, keeping inflation low and stable, limiting public debt, and maintaining healthy foreign reserves, contribute to resilience (Abiad et al. 2015).

Recommended strategies for managing natural resource booms strive to limit their distortionary effects by smoothing consumption over time and converting revenues from the inevitably depleting natural resources into productive assets and human capital. In other words, these recommendations focus on maintaining resilience. Not only does the unpredictability of global commodity markets make it difficult to translate these abstract principles into practice, but many recommended policies are hard to sell politically, especially in low and middle income countries where the booming sector dominates the economy. With many immediate needs and few alternative revenue sources, politicians face strong pressures to spend natural resource earnings immediately, rather than forgoing immediate consumption to make long-term investments and build up the financial buffers that contribute to resilience. While more rapid expenditure of natural resource earnings may be defensible in developmental terms in countries that are indebted or have limited stocks of productive or human capital (e.g., van der Ploeg 2011, 405; Venables 2016), resource booms also ease budget constraints in a manner that can encourage wasteful, non-productive consumption through over-investment in low-return public or collective goods, rentier politics and corruption, and mismanagement.

Beyond specific policies, differences in institutional development and the quality of government influence socioeconomic development. Mechanisms of accountability and commitment are particularly important for economic development because they influence the risk of expropriation, and thus willingness to invest. Numerous studies present the quality of institutions in place *prior to* a natural resource boom as mediating the effects of the boom, strongly influencing whether natural resource wealth is, in the language of this research tradition, a blessing or a curse (e.g., Acemoglu et al. 2003; Karl 1997; Mehlum et al. 2006). Mehlum et al. (2006), for example, argue that institutional quality at the time of a resource boom generates two distinctive, self-reinforcing outcomes: strong economic performance in countries with institutions that favor production and poor economic performance in countries with institutions that favor "grabbing." They distinguish between production-friendly and grabber-friendly institutions based on the extent to which they guarantee basic security or reward investments in

[12] As van der Ploeg (2011, 368) observes, Dutch Disease dynamics do not fully account for the severity of economic problems in resource-dependent countries such as Nigeria.

resource grabbing, whether through rent-seeking, theft, or violent conflict.[13] These policies and institutions are less concerned with maintaining "policy space" (in the terms of Abiad et al. 2015) to enhance resilience in the face of exogenous shocks (e.g., shifts in global markets) than with maintaining investor confidence.

Many institutions have increasing returns that make non-incremental institutional change difficult to achieve (North 1990; Pierson 2000). Thus institutions tend to be sticky, resulting in path dependency. What are the implications of path dependency for long-term developmental performance? Acemoglu et al. (2003) and Mehlum et al. (2006), among others, expect the quality of institutions to reproduce itself over time. Policies and institutions that promote development at one point, however, may become less effective or even harmful as circumstances change. Changing conditions, of course, are inherent to resource booms and volatile commodity markets more generally. To the extent that path dependency implies institutional sclerosis,[14] it undermines resilience and thus the ability to sustain developmental performance in the face of evolving challenges.

Not all institutions generate the increasing returns that favor path dependency (Mahoney and Thelen 2010; Pierson 2004). The loosening of budgetary constraints associated with a resource boom, for example, may have a corrosive effect on institutional quality (Ross 2001; Venables 2016; see reviews in Ross 2015 and van der Ploeg 2011). From this perspective, the quality of institutions at the time of a resource boom may offer no more than a short-term bulwark against the potentially harmful effects of such a boom, even in the absence of changing conditions.

Political Coalitions and Competition

What influences whether and when institutions reproduce themselves, change gradually, or undergo dramatic transformations? Other than institutional drift and exogenous shocks, power relations represent important and widely recognized influences on institutional changes. The term "power relations" encompasses a broad variety of phenomena, including relations of authority based on institutions governing decision-making, relatively enduring social orders and political settlements, and the at least potentially more fluid political coalitions that support particular governments, political parties, and individual politicians. We focus on political coalitions precisely because they are more fluid and thus more likely to account for change within a country over a period of a few decades.

Institutions stabilize the distribution of resources so that, usually, power relations and institutions reinforce each other.[15] But then, what accounts for change? For Acemoglu and Robinson (2012),

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[13] For their empirical analysis, Mehlum et al. (2006, 13) create an index of institutional quality from data from Political Risk Services on the rule of law, bureaucratic quality, control of corruption, the risk of expropriation, and the risk that a government will repudiate contracts.

[14] The term "institutional sclerosis" is associated with Olson's (1984), who attributed it to the influence of entrenched interest groups. In other words, Olson's argument see institutions as products and reflections of political action. See the next section.

[15] Institutions are products of political decisions, and thus reflections of the power relations, but they also shape power relations by influencing the allocation of resources. In a schematic representation of this relationship, Acemoglu et al. (2005, 392) depict political institutions and the distribution of resources as influencing de jure and de facto power respectively, which in turn shape economic and political institutions respectively, with economic institutions conditioning both economic growth and the distribution of resources moving forward.

change occurs through institutional drift, which results in small institutional differences, and to the interaction of those small institutional differences with critical junctures associated with exogenous shocks (see also Mahoney and Thelen 2010). This argument implies that, in the feedback relationship between politics and institutions, institutions exert greater influence. North et al. (2009) disagree. They insist that, ultimately, institutional effects depend on the social order. While change may be contingent, arising from the unintended consequences of decisions that set in motion dynamics that cannot be halted or reversed, elites also instigate intentional institutional changes. Likewise, Levy (2014) contends that all political settlements offer political space for interventions that may generate new dynamics that result in substantial change.[16]

But why would domestic elites consent to or even pursue institutional changes that alter domestic political and economic dynamics? North et al. (2009) assert that significant change often occurs when elites fear that factional control of political power could be mobilized for expropriation or to gain control over coercion. More generally, the struggle for power motivates and acts as the motor for change (Mahoney and Thelen 2010; Poteete 2009a; Poteete 2009b; Saylor 2014; Yashar 1997). Institutions influence but do not ensure the reproduction of political coalitions, not only because background conditions – demographics, technology, socioeconomic conditions – change, but also because those excluded from power constantly strive to chip away at ruling coalitions and build rival coalitions that can bring them to power. Thus, ruling elites cannot rely solely on institutions to retain power, but must engage in ongoing coalition building and maintenance (Poteete 2009a). The dynamics of political competition affect the socioeconomic base, breadth, and stability of political coalitions, which in turn influence political practices, policies, and institutions and thus developmental outcomes and trajectories.

The stability of a ruling coalition influences the time horizons of political leaders, while their breadth and social base inform the substantive interests advanced through political practices, policies, and institutions (compare, e.g., Acemoglu and Robinson 2012; Hickey et al. 2014; Khan 2010; North et al. 2009; Levy 2014; Poteete 2009b). By increasing time horizons, stable coalitions should encourage leaders to adopt policies and build institutions supportive of long-term macro-economic development, while unstable coalitions encourage politicians to focus on the political requisites for short-term survival. The shorter time horizons associated with competitive political environments may discourage long-term planning or measures to maintain economic resilience. On the other hand, increased competition also implies an increased risk of losing power, which encourages politicians to adopt institutions to protect themselves from expropriation or political victimization (North et al. 2009; see also Moe 1990; Rustow 1970). Broadly inclusive coalitions promote policies that generate broadly inclusive benefits, at least in the short term. The social basis of coalitions influences policy priorities, especially when political coalitions are not broadly inclusive. Institutional change is more likely when undertaken by coalitions that represent more homogenous interests, whether because their composition is more homogenous or less inclusive (Tsebelis 2002).

While broad support for a ruling coalition generally enhances its stability, a narrowing of support need not threaten survival in office. This relationship depends on the institutional arrangements for gaining and retaining power. While a highly centralized regime may enjoy broad support,

[16] Levy is concerned with the possibilities for constructive interventions by reformers, especially international aid practitioners.

centralization reduces the minimal breadth of a coalition required to retain power. In countries that elect governments through multi-party elections, features of the party system – especially the degree of institutionalization and fractionalization – and the extent of coordination among political parties also influence how a narrowing of support influences security in office. Plurality electoral systems manufacture majorities with some regularity; incumbency advantages and the challenges of electoral coordination can make these manufactured majorities difficult to defeat. Especially in more proportional systems, party system fractionalization may result in coalition governments in which continuation in the ruling coalition is imperfectly related to shifts in electoral support.

The most relevant political positions for macroeconomic policy concern the appropriate economic role of the state in redistributing material resources; facilitating or regulating productive activities or engaging in production directly; and facilitating or regulating trade. A long tradition in political economy attributes cross-national differences in policies, regime characteristics, and developmental trajectories to differences in the relative political influence of socioeconomic groups, variously defined in terms of class, sector, or asset specificity (Bates 1981; Frieden 1991; Moore 1966; Rogowski 1989; Saylor 2014). These studies expect governments to adopt policies that represent the socioeconomic interests of their supporters, so that differences in sources of support yield policy differences, but generally emphasize cross-national differences more than changes over time (but see Frieden 1994; Poteete 2009b). Socioeconomic structure defines the relevant set of social groups. This tradition often treats the relative political salience and influence of the various groups in society as given and exogenous to both policies and institutions. When shifts in political power are considered, they are often attributed to technological or demographic changes, the dynamics of global markets, and other sources of changes in relative prices.

Leftwich (2010) defines coalitions "as formal or informal groups which come together to achieve goals which they could not achieve on their own" (105). Coalitions may be short-lived coalitions of convenience or endure for decades. Even when coalitions endure, they do not do so automatically; they have to be reproduced. Many realms of social, economic, and political interaction present incentives to cooperate, "to achieve goals which they could not achieve on their own" (Leftwich 2010, 105), but also to compete "as they build their own coalitions and seek to splinter those of their rivals" (Poteete 2009a, 282). The dynamics of competitive coalition formation and reproduction encourages efforts to reframe the relevant social groups and their relations with each other. Although politically relevant social groups are not structurally defined, coalitions must adapt to changing structural conditions (e.g., demographics, economic activities) as well as changes in the configurations of organized actors. The on-going reproduction and reformulation of coalitions, understood in this non-structural manner, represents a source of dynamism over the short- to medium-term that is absent in both the structural work on power configurations and in research emphasizing the typically self-reinforcing nature of political settlements (Hickey and Bukenya 2014) or the long-run stability of access orders (North et al. 2009).

Expectations

What are the implications of the end of a resource boom, a sharp crash such as the one triggered by the 2008 financial crisis, and increasing volatility in global markets for a country's main natural resource export? If the effects of a resource boom on a country's economic structure is the main developmental challenge, then macroeconomic performance should be strong for the duration of a resource boom, with rates of economic growth reflecting the magnitude of the boom. After the boom ends, and especially during a bust, macroeconomic performance depends on the extent of structural changes to the economy during the boom, the nature of macroeconomic policy, and whether there are barriers to factor mobility that constrain reversal of those shifts. The depth and duration of dampened macroeconomic performance during busts should increase with the severity of these dynamics. If, however, the life cycle of a boom is less important than volatility in prices and revenues, then medium- to long-term macroeconomic performance should decrease as the volatility of natural resource revenues increases. Policies to limit Dutch Disease dynamics and the effects of volatility should reduce the depth and duration of macroeconomic downturns after a boom and during busts in earnings. The adequacy of policy responses to these challenges depends not only on institutional dynamics of reproduction and change, but also on political dynamics.

As summarized in Table 2, the past four decades brought changes in global diamond markets, the life cycle of Botswana's diamond boom, political conditions in the country, and its macroeconomic performance. For heuristic purposes, we refer to four post-colonial periods: (1) the pre-boom period (prior to 1971), (2) the boom (1971 – 1989), (3) the post-boom plateau from 1989 – 2004, and (4) the period of increasing volatility since 1998. The boom began with production in Orapa in 1971. During this period, the international diamond cartel stabilized global prices by managing stockpiles of diamonds. When did the boom end? Although the Jwaneng mine reached full production in 1985 (Kojo 2010), Botswana's total production continued to increase through the late 1980s (Bain and Company, Inc. 2011, 10) and beyond; measured in carats, production peaked in 2007. The general elections of 1989 offers a convenient point of reference for the end of the boom that emphasizes mine developments. While the international diamond cartel came under increasing market and regulatory/legal pressure in the 1990s, De Beers continued to dominate global markets until 2005, when it has liquidated its stockpiles and adopted its "Supplier of Choice" marketing strategy.

Looking at the life-cycle of Botswana's diamond boom, one would expect moderate developmental progress during the pre-boom period, as investments to develop the mines flowed into the country, strong development during the boom, and moderate to poor development after the end of the boom. If the degree of price volatility drives developmental performance, then Botswana's performance should be strong both during the boom and during the post-boom period of relatively stable prices; a deterioration would be expected only after the diamond cartel collapsed.

If features of political coalitions and the dynamics of competition mediate the relationship between economic changes and developmental outcomes, however, shifts in developmental performance should be linked to political developments. During the pre-boom period, political consolidation of a broad coalition should be associated with an inclusive and increasingly long-term development strategy. The boom coincides with the dominance of the BDP, with a gradual erosion of its electoral base posing little to no threat to its hold on power; these conditions do

little to prevent a drift away from a focus on inclusive, long-term development strategy toward elite rent-grabbing (see discussion below). From the late 1980s until 1998, however, further declines in the BDP's electoral support and consolidation of the opposition decreased both the inclusiveness of the ruling coalition and its security in office. In 1998, the opposition imploded. Since then, the inclusiveness of the BDP's coalition continued to narrow, probably more than is reflected in its vote share, but its security in office has fluctuated with the degree of cooperation among opposition parties. The BDP has also experienced two splits, in 2010 and 2019 (as this paper was being finalized). These conditions are not propitious for consistent policies for inclusive development over the long-term.

The next section traces changes in international diamond markets. It is followed by evidence substantiating the claims made about shifts in economic and political developments in Botswana, an evaluation of changes in the quality of institutions, and an assessment of developmental performance..

Table 2: Four Political Economic Periods in Post-Colonial Botswana

Period (Approx. dates)	**International markets**	**Botswana**		
		Diamond mining	**Politics**	**Macroeconomic**
Pre-boom (1966 – 1970)	De Beers led cartel resulted in unusually stable prices	Diamond discoveries announced (1967) Transfer legal rights to sub-soil resources from traditional leaders to the state	Independence (1966) BDP government led by President Seretse Khama BDP dominance in vote shares and legislative seats	One of the poorest countries in world
Boom (1971 – 1989)	Moderate market instability, mid-1970s to mid-1980s New production in Australia and USSR	Major mines open: Orapa, Lethlakane, and Jwaneng Rapid expansion of production and revenues	Dominant party system QJK Masire succeeds S. Khama as president (1980)	Rapid economic growth
Post-boom plateau (1990 – 2005)	Relatively stable markets End of the cartel Managed liquidation of stockpiles after 2000	No new diamond mines Relative stability in production and exports	BDP continued legislative dominance, erosion of electoral support F. Mogae becomes President following retirement of QJK Masire in 1998	Respectable but more modest economic growth
Increasing volatility (2005 – present)	Highly concentrated but uncoordinated market Increasing market volatility Largest suppliers modulate production to stabilize markets	Several new but less profitable mines De Beers shifts various operations to BW: sorting (2006),[17] aggregation (2012), and head office (2013) Large-scale expansion of diamond cutting and polishing. Exports of polished diamonds begin (2008)	I. Khama becomes president after F. Mogae reaches the (new) presidential time limit in 2008. BDP splits in 2010. It loses electoral majority (2014) but retains super-majority in legislature. Opposition unites briefly, then splits in 2017. BDP splits again in 2019.	Respectable but more modest economic growth with increased volatility

[17] At least some sorting and valuing took place in Botswana much earlier (1980s?).

Transformation of International Diamond Markets

For over a century, a single firm dominated the international market for gem-quality diamonds.[18] The founding of De Beers in 1888 followed consolidation of South African diamond mining (Bain & Company 2011). By the turn of the century, the company produced 90% of the global supply of diamonds (Bain & Company 2011). With the geographical expansion of diamond mining beginning in the 1930s, De Beers retained market control through a combination of controlling the development of some new mines and negotiating exclusive long-term purchasing agreements with others. The resulting monopsony stabilized diamond prices by regulating global supplies, buying up all diamonds on offer, stockpiling them when demand was weak, and drawing down stockpiles when demand strengthened. Eighty years later, De Beers still controlled 80 – 90% of the supply of rough diamonds (Ariovich 1985; Auer and Schuhmacher 2012). As seen in Figure 1, diamond prices compared favorably with those of other highly valuable mineral and petroleum resources in both stability and upward trend through the late 1990s.

The global market for diamonds, however, has changed in ways that make increased price volatility likely. By the 1970s, the development of major new mines in Russia, Australia, Botswana, and Canada dramatically increased the global supply of rough diamonds and threatened De Beers' dominant position. From the mid-1970s through the mid-1980s, De Beers used its market power to defend its gate-keeper role, building up or drawing down stockpiles according to the situation. Nonetheless, defections by Russian and Australian producers weakened the cartel. Pressure on the cartel intensified in the 1990s as the growing flow of conflict diamonds threatened both demand for diamonds and the ability to stabilize prices by managing supply. The cartel also faced charges of anti-trust violations in European and US courts in the 1990s that ultimately forced De Beers to relinquish market control in the early 2000s. De Beers market share fell from over 80% in the 1980s to 55% by 2004 (The Economist 2004). Within a decade, Russia's Alrosa displaced De Beers as the largest supplier of rough diamonds to global markets (Bain & Company 2016, 20).

Consumer markets have also changed. As of 2000, nearly half (48%) of the global sales in diamond jewelry were to the US market (White and Mason 2011). Ten years later, that figure had dropped to 38% as demand for diamond jewelry grew rapidly in East Asia, especially China and India (White and Mason 2011). For these new markets, diamonds represent a secure and easily stored investment. Ironically, the creation of a reliable market for diamond engagement rings in the United States helped make diamonds a relatively safe investment. The decline of that set of consumers relative to investors may make diamonds more vulnerable to price volatility.

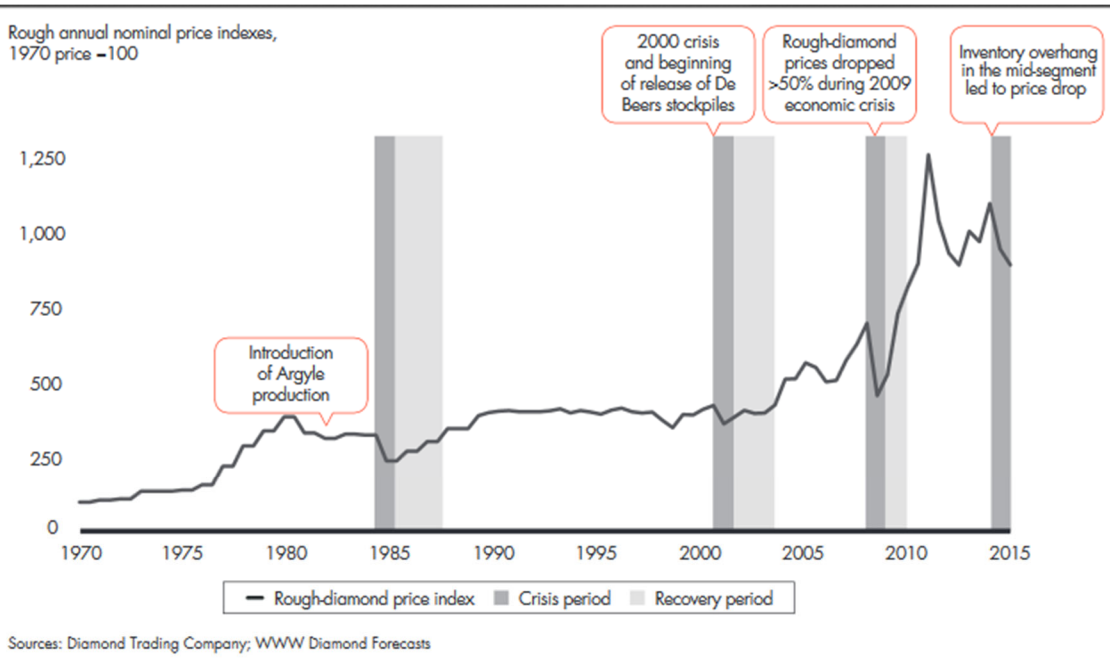
Despite these changes, the international market for diamonds continues to operate in a non-transparent manner. De Beers and Alrosa still dominate global production and sales. Auctions and spot sales have developed since the 1970s, but many other producers of rough diamonds still negotiate exclusive long-term purchase agreements with De Beers, Alrosa, and a limited number of other firms. Most rough diamonds are sold to a few hundred traders at auctions that take place only ten times each year (Bain and Company 2016), and which remain structured around the De

[18] The diamond market is segmented, with the main distinction being between industrial and gem-quality diamonds. This paper is not concerned with industrial diamonds.

Beers sightholder sales cycle.[19] The market for polished diamonds is only moderately more open, involving a few thousand diamond trading centers and, increasingly, online platforms (Bain and Company 2016; D'Ecclesia and Jotanovic 2017).[20]

In the absence of publicly available data on prices for rough or even polished diamonds,[21] both commercial and academic analyses rely on proprietary data. Bain and Company, Inc. (2015), for example, tracks nominal price indices for rough diamonds from 1970s through 2015, a period that encapsulates Botswana's diamond boom. As depicted in Figure 1, nominal prices experienced some instability in the 1970s through the mid-1980s, when major new mines opened in Australia and Russia. Prices recovered in the late 1980s and stabilized for more than a decade. The sell-off of stockpiles by De Beers in the early 2000s marked the end of the cartel and the beginning of a period of greater instability. In addition, following a strong recovery in rough (and polished) prices after the global financial crisis, prices have generally trended downward. This stands in sharp contrast to the cartel era, when prices went up slowly but steadily in real terms,

Figure 1: Annual Diamond Price Indices, 1970 - 2015



Source: Reproduced from Bain and Company (2015, 5).

[19] While the De Beers sightholder system has just under 100 sighholders, there are more, e.g. ODC has over 200 accredited buyers.

[20] Bain & Company estimated that approximately 100 firms sold rough diamonds to approximately 5000 polishers in 2015 – 2016 (2016, 3). NB some polishers buy directly (i.e., are sightholders).

[21] The Kimberley Process Certification Scheme publishes data on the volume and value of diamonds traded. While it is possible to calculate the average value per carat, heterogeneity in the value of diamonds renders the average value per carat a poor indicator of prices.

Figure 2 confirms the relative stability of diamond prices during the 1980s and 1990s and places them in a comparative perspective (Spar 2006). Diamond prices fluctuated much less than prices for oil and other commodities. They also trended upward slightly during a period when prices for most other commodities slumped (Spar 2006). [If the source data can be acquired, future analysis will determine whether a positive trend holds up after controlling for inflation.]

Figure 2: Diamond and other commodity prices, 1980 - 1998

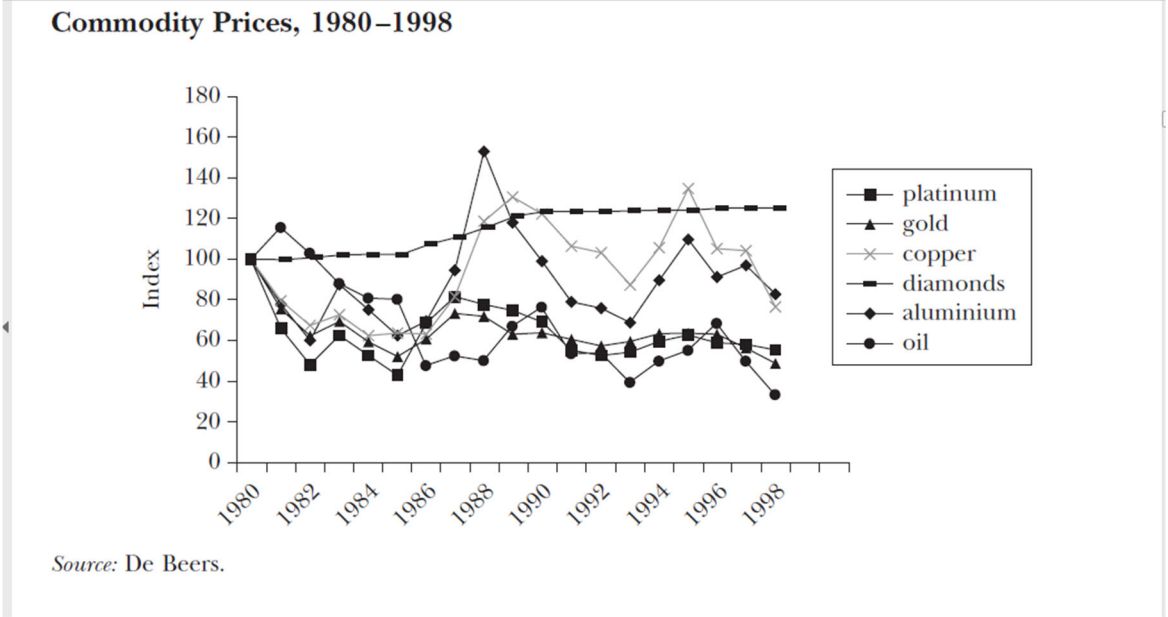


Figure reproduced from Spar (2006, 197).

Although some claim that demand now drives diamond prices (Kojo 2010, 13), it seems more accurate to say that efforts at supply management are now loosely coordinated. The market remains highly concentrated. Since 2004, five countries have produced approximately 80% of all rough gem-quality diamonds by value, with two countries alone – Botswana and Russia – accounting for about half the global supply (KPCP various years). Similarly, Alrosa and De Beers together supply more than half of the world's rough diamonds, with fluctuations in market share reflecting decisions about supply management as much as the growth of rivals. Bain and Company report, for example that "[t]he combined market share of ALROSA and De Beers fell from about 70% in 2014 to about 60% in 2015 due to considered efforts to decrease supply. Smaller players held production steady and increased their shares" (2016, 8). Even if large suppliers continue to influence global diamond markets, their strategies for exercising market control have changed. Increasingly, major suppliers respond to pressures on global diamond prices by modulating production rather than stockpiles.

These observations have three implications. First, the shift in strategy for managing supplies pushes the costs and risks of supply management down the value chain, to producers of rough diamonds. Indeed, as Figure 3 shows, the increase in price volatility since the 2000s has affected

rough diamonds more forcefully than polished diamonds (D'Ecclesia and Jotanovic 2017). As expected, producers have been affected more than intermediary traders.

Figure 3: Diamond Price Indices, 2002 - 2014

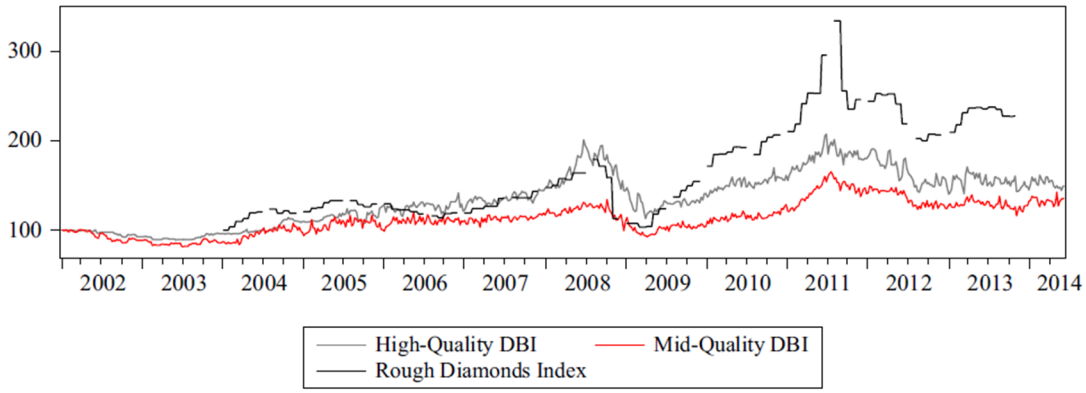


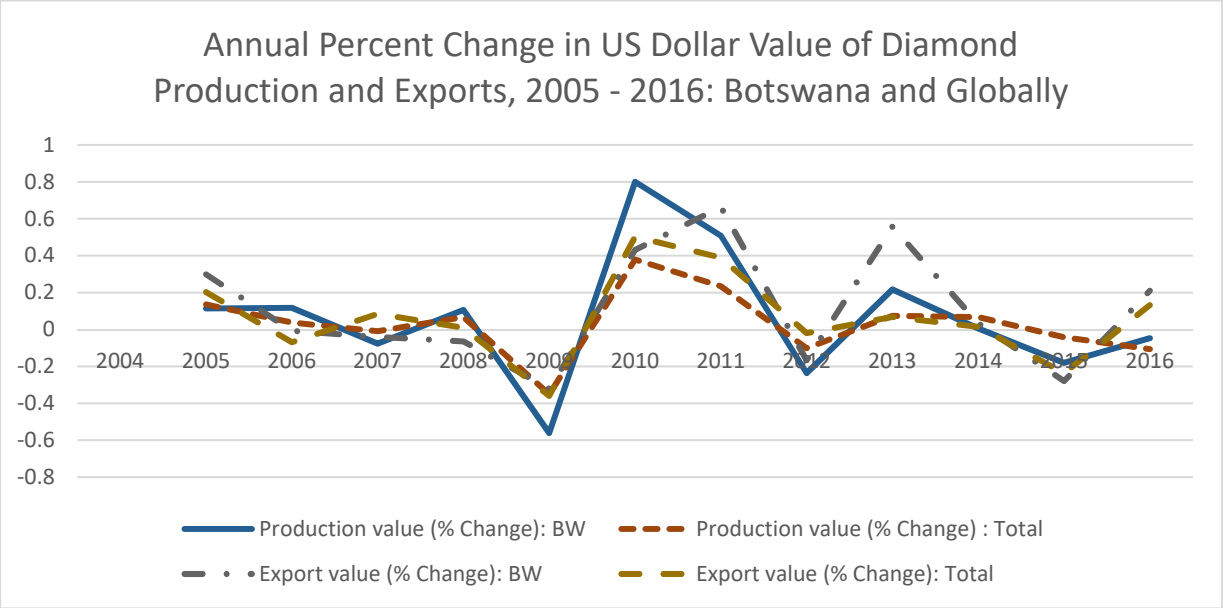
Fig. 2 Rough and Polished diamonds prices. *Notes*: rough diamond prices computed by Polished Prices data platform starting from 2004. Rough diamonds are traded only 10 times a year and the values of the index are reported and matched with two other series only for the months in which the trade occurs *Source*: extracted from Polished Prices data

Figure reproduced from D'Ecclesia and Jotanovic (2017).

Second, fluctuations in diamond prices underestimate fluctuations in production and revenues for the largest firms and producing countries like Botswana that have enough market share to influence global markets. Third, for these actors, volatility in production may exceed volatility in earnings, and both volatility in both production and earnings may exceed volatility in global prices. An analysis of data on the value of diamonds produced and exported as reported through the Kimberley Process Certification Scheme (various years) supports these expectations. Botswana experienced greater volatility in the value of both its diamond production and exports than observed globally. The standard deviation for year-to-year changes in the value of Botswana's diamond production was nearly twice that for the global total (0.350 versus 0.183). (See Figure 4.) The gap in the standard deviation in the value of diamonds exported is slightly smaller but still substantial (0.322 for Botswana versus 0.238 globally). In the aggregate, volatility in export earnings since 2005 has exceeded volatility in production. For Botswana, however, export earnings varied slightly less year-to-year than did production, reflecting its ability to influence global prices by modifying supply.

The collapse of the diamond cartel led by De Beers brought centralized supply management to an end, but did not usher in a demand-driven market. Large producers, including Botswana, are still able to influence global prices. Lack of coordination and cooperation, however, makes supply management more difficult and risky, as reflected in increased volatility in production and revenues as well as prices. The consequences of these changes for individual producer countries depend on their effects on revenues, and how those revenues are managed.

Figure 4: Year-on-year changes in the value of diamond production and exports, 2005 – 2016: Botswana and Global Total



Source: Kimberley Process Certification Scheme (various years).

The rest of the paper focuses on conditions in Botswana. We begin by tracing the development of diamond mining in Botswana and then consider interactions with changing global market conditions. Finally, we assess the challenges changes in market volatility present for the sustainability of diamond-development in Botswana

End of the Boom in Botswana, & Increasing Volatility, and Macroeconomic Performance

"Since 1967 some 397 kimberlites have been discovered in Botswana …, but all operating mines were found during the first wave of exploration between 1966 and 1978, all by De Beers" (De Wit 2018, page 14 of online first version).

This section provides first a synopsis of the development of diamond mining in Botswana, followed by an overview of macroeconomic developments from independence to the present. It answers two questions: How did international market conditions interact with the boom-bust dynamic in Botswana? And what is Botswana's developmental record over this period?

The Diamond Sector in Botswana

In 1967, one year following Botswana's independence from the UK, the government announced the discovery of a major diamond deposit at Orapa. In the same year, the government passed legislation to govern mines and mining. The Mines and Minerals Act provided a framework for prospecting and the development of mines, while the Mineral Rights in Tribal Territories Act transferred property rights over sub-soil resources from the traditional authorities to the post-colonial state. These acts ensured that mineral development and the management of mineral

revenues in Botswana would be centralized. Negotiations with De Beers resulted in the establishment in 1969 of Debswana as a public-private partnership for the development of Orapa and subsequent diamond deposits. Initially, the government held a minority (15%) share in Debswana.

Botswana's boom period got underway in earnest with production at Orapa in 1971. Growing recognition of the value of the Orapa mine and discovery of a second rich deposit nearby at Letlhakane prompted a renegotiation of the government's partnership with De Beers. The development of new mines in Australia and the USSR and threats of by-passing De Beers from these countries strengthened Botswana's hand. In 1975, Debswana became a 50-50 partnership and a management committee with representation from the government, DeBeers, and operating company representatives was established. Mining operations began at Letlhakane in 1977 and at a third major site, Jwaneng, in 1982. Jwaneng reached full production in 1985 (Kojo 2010). With the exception of a few short-lived downturns early and late in the decade, the 1980s were a period of expansion.

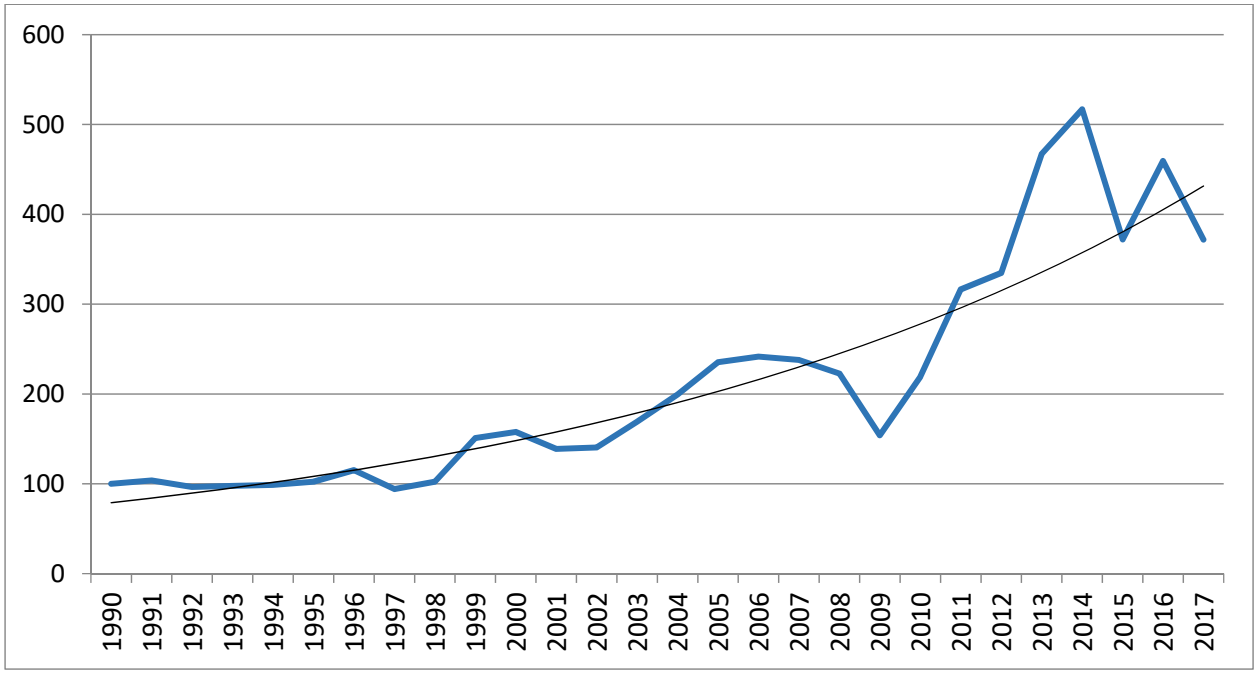
In the 1990s, as the most important period of expansion ended, diamond production and revenues became more sensitive to international market conditions.[22] Defections from the De Beers led cartel prompted production cuts in Botswana in the early 1990s that resulted in a 7% decline in US dollar revenues from diamond exports in 1992. Overall, however, this was a period of relative stability, during which production and revenues leveled off, rather than a bust.

This period of post-boom stability ended in the late 1990s. Exports contracted sharply in 1998-99 (31%) and again in 2001 (12%, in the wake of 9-11) (Bank of Botswana 2000, 2005). Between 2002 and 2008, production at Jwaneng and Orapa surged and Botswana's exports increased sharply. Concerns about the eventual exhaustion of existing mines, combined with a global commodities boom, encouraged an intensification of prospecting activities. Several new diamonds mines opened after 2000, including Damtsha (2003), Lerala (2008), Karowe (2012), and Ghaghoo (2014). None of these mines, however, approach the size or profitability of Jwaneng or Orapa. The global financial crisis curtailed this second boom. Production and dollar revenues plummeted in 2007-09 (36%) and again in 2015 (28%) (Bank of Botswana 2010; Statistics Botswana 2014, 2017). As market volatility increases, so do temporary mine closures and sales of less profitable mines. Lerala, for example, has halted production at least three times and changed ownership at least once over the past decade. The severity of the global financial crisis even prompted Debswana to halt production at all of its mines for a few months in 2009. Figure 5 traces changes in Botswana's total diamond exports from 1990 to 2016 relative to 1990.

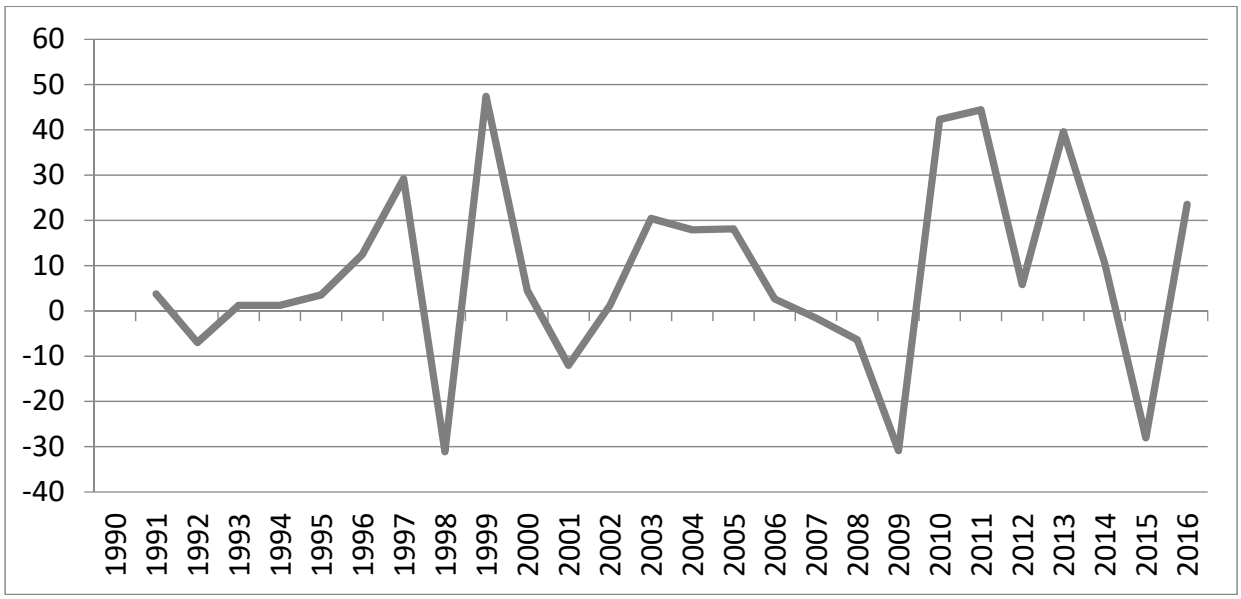
[22] The instability in diamond markets in the late 1970s and early 1980s did affect Botswana. Because it coincided with the ramping up of diamond production, however, Botswana was not yet as dependent on mining revenues as it was from the late 1980s onward.

Figure 5: Volatility in Total Diamond Exports (US Dollars) from Botswana, 1990 – 2016

A) Index of export earnings with 1990 = 100 and exponential trend line



B) Year-to-Year Percentage Change



Sources: Bank of Botswana (2000; 2005; 2010); Botswana Financial Statistics (2006, 207; 2018).

NOTE: Total diamond exports include polished as well as rough diamonds since 2008. Since 2012, they also included re-exported diamonds (i.e., diamonds that were previously imported). [To be reworked without re-exports]

Table 3 presents standard deviations in year-to-year changes in the value of total diamond exports for five periods of five year each (1991 – 2015). It confirms that volatility spiked dramatically from the early to late 1990s, moderated in the early 2000s, but then has increased again since the mid-2000s.

Table 3: Standard Deviations in Year-to-Year Changes in the Value (USD) of Total Diamond Exports for five year periods, 1991 – 2015

Period	1991 – 1995	1996 – 2000	2001 – 2005	2006 – 2010	2011 – 2015
Standard Deviation	4.38	29.41	14.11	26.39	29.26

Sources: Bank of Botswana (2000; 2005; 2010); Botswana Financial Statistics (2006, 207).

Botswana's long-standing efforts to move up the value chain began to bear fruit during this period of instability. In 2006, the Diamond Trading Company (DTC) opened a center in Botswana that has become the largest such center in the world (Diamond Trading Company Botswana 2015). Several diamond cutting and polishing companies also began operations in Botswana in 2006. Since 2008, Botswana exports polished as well as rough diamonds, including some polished diamonds that were mined elsewhere. De Beers moved the DTC (now DBGSS) from London to Gaborone in 2013; it had relocated diamond aggregation the previous year (Thomas 2013).

These efforts at vertical integration have thus far had mixed success. Cutting and polishing companies have struggled to survive. It did not help that the financial crisis unfolded when they were still getting their bearings. The problems, however, appear to be more fundamental. Value-chain analysis reveals modest value-added from cutting and polishing; diamond miners, jewelry makers and retail sales reap much more significant gains (Bain and Company, Inc. 2016). Thus far, however, vertical integration in Botswana has not extended to jewelry-making. The vertical integration probably has not increased the economy's resilience greatly. It has, however, made it more difficult to distinguish the contribution of the diamond industry to national accounts, since cutting and polishing activities are aggregated with other manufacturing activities.[23]

Overall, international market conditions probably prolonged Botswana's boom period, enhanced Botswana's leverage in negotiations with De Beers, and softened the end of the boom in the 1990s. As long as Botswana's market share allows it to influence global markets by managing supply, the sector is likely to experience greater fluctuations in production than in revenues.

[23] In addition, diamond trading is in the "Trade" sector of the NA and diamond sorting and valuing is in the "Business Services" sector.

Slower rates of extraction should extend the profitable lifespan of existing mines, thus providing a longer "glide path" in the transition to a post-diamond economy.

There are at least two caveats to these expectations. First, neither Botswana nor any other single producing country has the ability to regulate global supplies in the absence of coordination. In recent years, production cuts by Botswana and others have been balanced by expanded production by Russia, Australia, and others (Bain and Company 2016). Botswana runs the risk of cutting production without gaining any significant increase in prices. As its market share declines, this risk increases. Second, even if production cuts help maintain price levels, opening and closing mines implies increased volatility in labor markets and spills over into other economic activities, especially via government revenues. This sort of stop-go dynamic poses important economic and political challenges. Even as market volatility has increased since the international diamond cartel collapse, however, the relative stability and upward trends in diamond markets still compare favorably to most other commodity markets. In this sense, Botswana still faces less onerous macroeconomic challenges than do exporters of oil or other mineral resources.

Macroeconomic transformations

Mineral-led economic growth transformed Botswana from one of the poorest countries in the world at independence in 1966 into a middle-income country by the 1990s. For roughly 40 years after independence, Botswana's economy grew more rapidly than that of any other country (World Bank 2005) and the country seemed an island of political stability in a turbulent region. Botswana has never experienced a coup or coup attempt, has avoided civil conflict, and is the only African countries to have held regular multi-party elections with no interruption since independence.[24] The country consistently earns high marks relative to other African countries in cross-national assessments of human development and welfare, reflecting dramatic improvements in access to education and health care. These accomplishments earned Botswana its reputation as an exception to the natural resource curse.

Botswana's reputation reflects accomplishments in the 1970s and 1980s, during the country's lengthy diamond boom. Its more recent performance has been less exceptional. Figure 6, which reports average growth rates for five-year periods from 1971 through 2015, reveals a sharp break from the boom in the 1970s and 1980s to the post-boom period since the 1990s.[25] The exceptional rates of growth during the boom still weigh heavily in calculations of long-term average growth rates, obscuring less distinguished performance in recent years. Botswana still ranked as the fastest growing economy in the world for the period 1960-2004 (Poteete 2009b). By 2016, it had fallen to fifth place among countries with at least 35 years of GDP data in the World Development Indicators (World Bank 2017).[26] Unless the economy becomes more dynamic, Botswana's ranking will to fall further as its boom period recedes.

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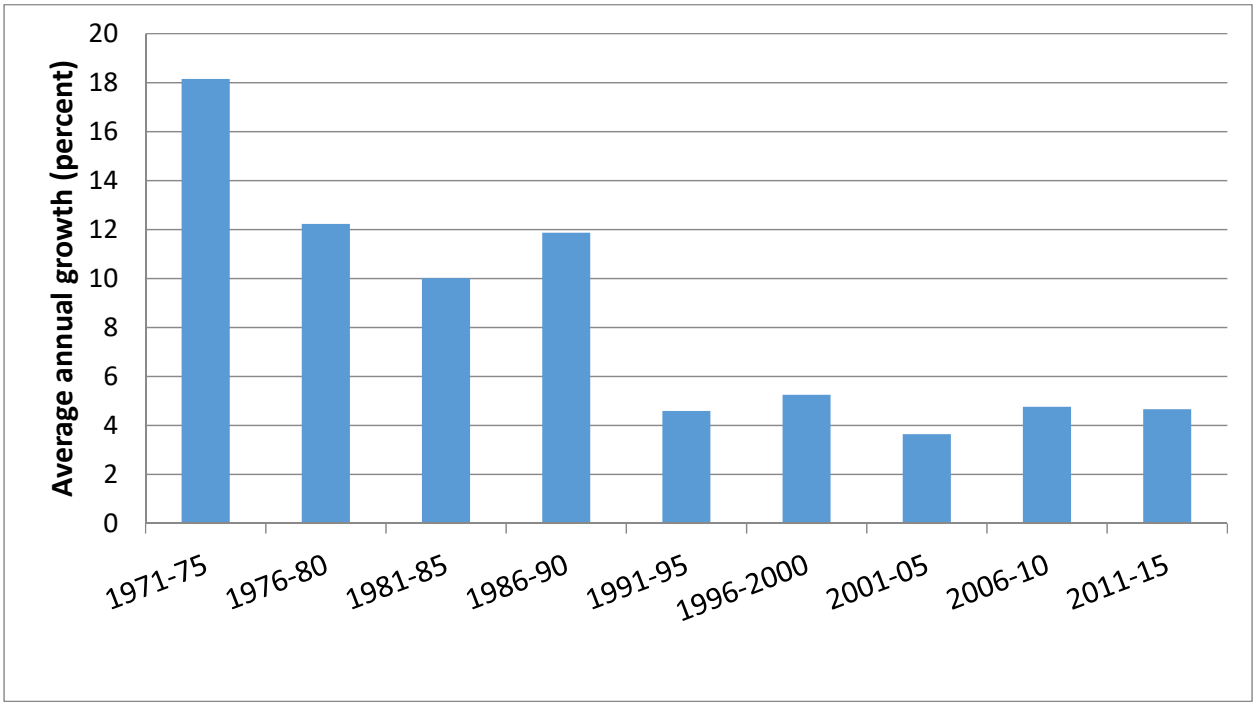
[24] Mauritius cancelled general elections scheduled for 1972, but has held regular elections since 1976.

[25] GDP data for 1966 – 1970 are unreliable. Estimates of GDP growth over this period vary by data source, ranging from 7% (Penn World Tables) to 16.8% (official government statistics. See Jerven (2010).

[26] Based on calculation of average GDP per capita growth rates reported in the World Development Indicators 2017, available online: http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators#.

Figure 6: Average Five Year Growth Rates (GDP %), 1971 - 2015



Source: Jefferis (2017). [To be updated with 1966 – 1970 data]

By definition, a mineral boom implies a rise in the contribution of mining to GDP. Figure 7 captures the effects of the diamond boom in Botswana. Mining's share of GDP exploded, ultimately peaking at 53% in 1988/89 before tapering off. Economic resilience after a boom, however, depends on economic diversification, particularly into economic activities that are not dependent on the health of the booming sector. Botswana's economic structure has diversified. There is, however, considerable debate and uncertainty about the resilience of the current economic structure. Agriculture, once the mainstay of the economy, accounted for less than 20% of the GDP by the end of the 1970s; it now represents roughly 2% of economic activity. The near elimination of this traded sector would appear to be a classic symptom of Dutch Disease, with the effects of a mineral boom crowding out other traded activities. Agriculture, however, is a marginal activity in Botswana's semi-arid climate, vulnerable to droughts and livestock diseases. Arguably, its prominence at independence reflected a lack of more attractive economic opportunities. Incredibly, another traded sector, manufacturing held its own. Although manufacturing has struggled at times, and has not taken off to lead non-mining growth, its share of GDP hovered between 3.6% and 7.0% before, during, and after the boom.[27]

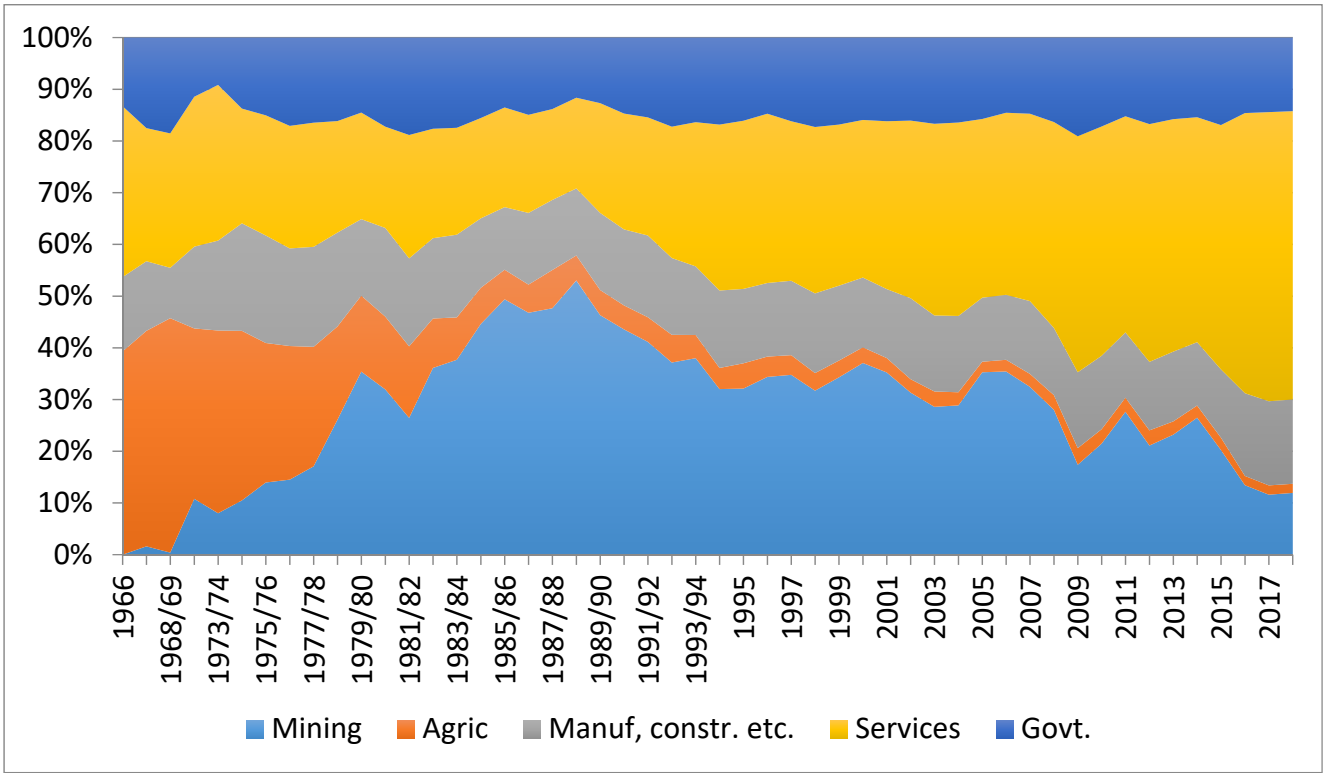
[27] Note that the chart below has a broader sectoral classification, putting manufacturing together with construction, water & electricity. As noted above, recent figures for manufacturing include diamond cutting and polishing, blurring the distinction between these sectors. If cutting and polishing are only marginally viable activities, net output (i.e. value added, which is what GDP measures) is likely to have been quite small.

The Dutch Disease entails a shift from traded to non-traded activities, including government and the service sector. To the extent that these activities represent appendages to the mining sector, shocks to the mineral sector will ripple through the non-traded sector, amplifying rather than cushioning their effects. In Botswana, the development of the non-traded sector kept pace with general economic growth during the boom. As GDP ballooned, so did the public sector and services. Considering the barebones administrative apparatus that Botswana inherited at independence, public sector expansion should not be dismissed as simply unproductive or an indication of political clientelism. In fact, Botswana gained a reputation for its unusual adherence to meritocratic standards in public sector staffing in the 1970s and 1980s (Isaksen 1981; Picard 1987). Equally important, public sector growth generally did not outpace economic growth; the government's share of GDP stabilized at between 11 and 17%, around a flat trend.

The same cannot be said about non-government services. Their relative weight increased as the contribution of mining to GDP declined. Non-government services now account for more than 45% of GDP. Not all services depend directly or indirectly on the health of the mining sector. International tourism, for example, mostly entails the provision of services, but demand for those services depends more on international economic conditions and Botswana's competitiveness than on fluctuations Botswana's diamond revenues. While government and the tourism industry tout tourism as the second most important sector in Botswana's contemporary economy, the sectoral categories used in the national accounts do not allow an objective assessment of tourism's economic contribution[28]. There is no doubt that Botswana's economy has diversified. It remains to be seen how the structural changes that have occurred will affect Botswana's resilience as increasing volatility in diamond markets interacts with a gradual loss of market share. Largely because the GDP diversification has been into (mostly non-traded) services, exports have not diversified.

[28] But such assessments are available following the internationally accepted tourism satellite account methodology. It is of a similar size to manufacturing.

Figure 7: Structural changes in GDP, 1966 - 2018



Source: Jefferis (2017); Botswana Financial Statistics (March 2019).

Institutions, Politics, and Developmental Performance

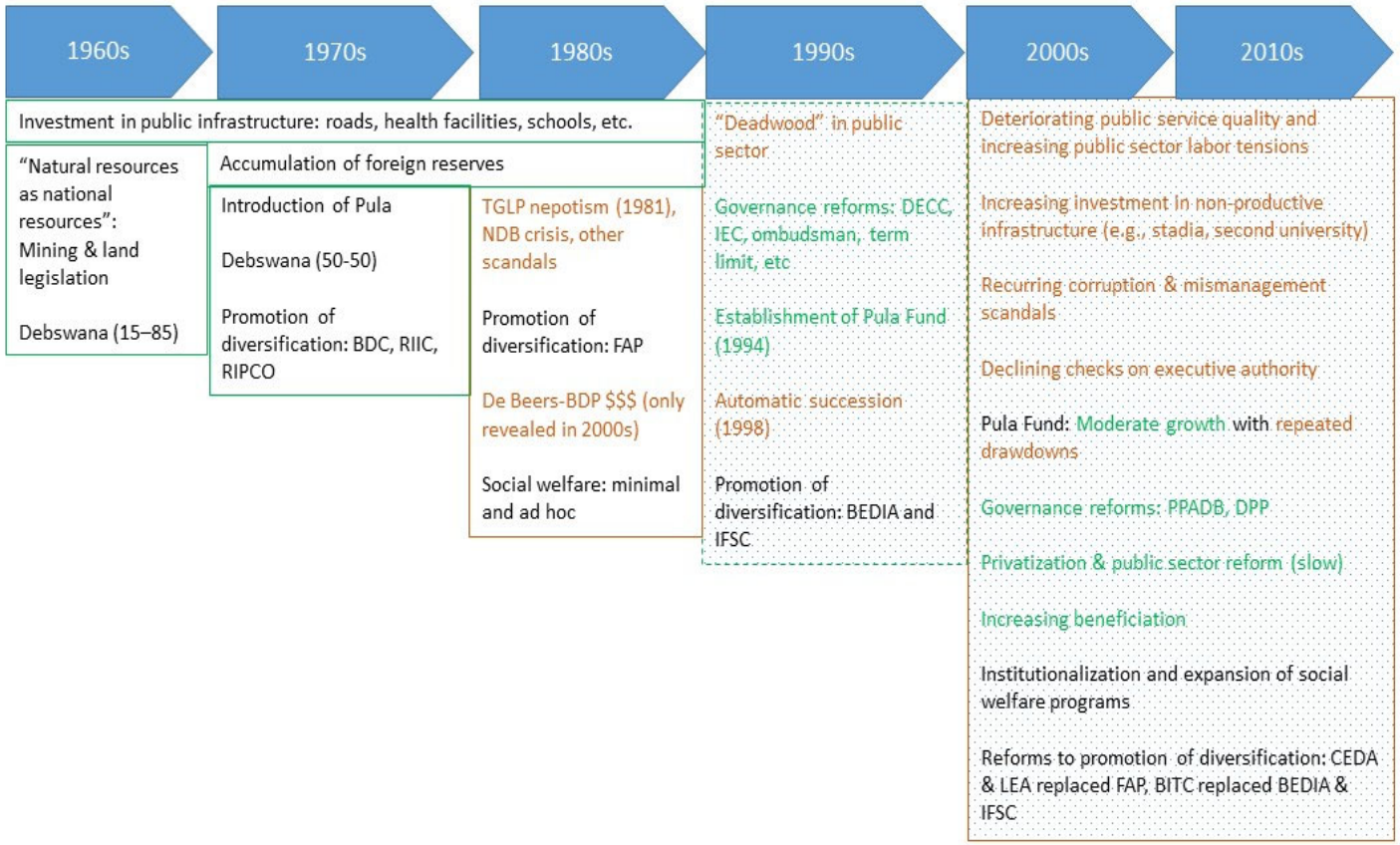
Policies and institutions mediate developmental performance. They are in turn influenced by political conditions and dynamics.

As can be seen in Figure 8, the BDP government put in place several key institutions and policies before the diamond boom began. In the 1970s, the government managed the revenues in line with the conventional wisdom by building up savings and investing in public infrastructure supportive of private economic activities. To encourage economic diversification, a number of parastatals encouraged innovation and brokered investment. This promising foundation did not prevent the emergence of elite corruption in the 1980s, when the boom – and BDP dominance – began to wane. By 1994, the BDP faced a credible and growing opposition, buoyed by public dismay at corruption scandals, deteriorating public services, and labor tensions. The BDP retained power, but responded to the new competitive pressure with a number of governance reforms. Early hopes for the reforms of the 1990s faded as their limitations became apparent, fragmentation of the opposition reduced its ability to challenge the government, and reports of corruption scandals, mismanagement of seemingly increasing scale have become increasingly frequent.[29] The government also increased social expenditures through the institutionalization of

[29] In addition, the emergence of HIV/AIDS as a major development issue in the early 1990s consumed both policy attention and resources

social welfare programs and increased public investment in amenities and prestige projects (e.g., stadiums, a second university). While a social welfare net may have a stabilizing effect on the economy, the shift from basic to social infrastructure is a shift from productivity enhancing investments to consumption. There are also major concerns about the quality of Botswana's public spending (e.g., health and education outcomes relative to expenditures). Botswana's fiscal management remains relatively conservative overall and the government has adopted some reforms since 2000 that should increase Botswana's economic resilience. Indeed, at least thus far, short-term fluctuations in diamond revenues have had relatively short-term effects on Botswana's economic performance. Thus, while GDP declines with diamond earnings, it also rebounds with diamond markets. Nonetheless, problems of governance, if not checked, can be expected to undermine economic resilience, and thus long-term growth, moving forward. Figure 8 summarizes some of the key institutional developments and governance trends.

Figure 8: Institutional Developments and Trends in Governance, 1960s – 2010s



NB: Automatic succession refers to a time limit on the presidency. This reform initially appeared to be a positive development. Its design, however, allowed for a problematic disjuncture between limits on presidential tenure and the electoral cycle.

Before and during the boom

Following its founding in 1962, the Botswana Democratic Party (BDP) built a broad coalition that crossed ethnic and regional lines. The BDP won more than 80% of the vote in the self-government elections of 1965 against two regionally based parties associated with non-Tswana ethnic groups. The BDP campaign promised to treat natural resources as national resources. Once elected, it began to construct a legislative framework consistent with this notion. This included the Mines and Minerals Act of 1967 (on mineral prospecting and development), the Mineral Rights in Tribal Territories Act of 1967 (which nationalized sub-soil resources), and the Tribal Land Act of 1968 (which transferred land administration from traditional authorities to the state). These moves directly challenged traditional authorities, prompting an important traditional leader, Bathoen Gaseitsiwe, to join the opposition.[30] The government responded by calling early elections in 1969. The BDP's electoral support dipped to 68%, but then bounced back to 75 – 76% for the rest of the 1970s as the party consolidated its dominance. The breadth of its political support meant that the BDP could take a longer term approach to managing diamond revenues and socioeconomic development without worrying about its political survival.

The creation of the Ministry of Finance

Botswana's first president, Seretse Khama (1965 – 1980) named Quett Ketumile Masire as his Vice President and the first Minister of Finance. In 1968, Masire's portfolio was expanded to include Development Planning. Masire had a deep respect for technical expertise and economics (Masire 2006). Under his leadership, the Ministry of Finance and Development Planning (MFDP) acted as a lead ministry, coordinating development planning and public expenditure. MFDP continued to play this coordinating role during Masire's presidency, from 1980 to 1998. As the first diamonds mines were developed, the government signaled that it would take a cautious and pragmatic approach. Coordination of expenditures, in Botswana as elsewhere, played a critical role in respecting budget constraints and official development priorities.

During the boom

Three challenges feature prominently in debates about macroeconomic management and development in resource-dependent countries: the inevitable depletion of non-renewable resources, economic diversification, and volatility in global commodity markets. Botswana's post-colonial government adopted a development strategy that reflected conservative economic advice for responding to these challenges and contributed to the imperatives of coalition maintenance.

First, because non-renewal resources eventually run out, economists recommend that revenues from non-renewal resources be converted into productive assets to the extent possible. Even before diamond production began, the government of Botswana prioritized the development of above-the-ground infrastructure and public services, resulting in an increasingly dense network of roads, schools, medical facilities, and administrative offices (Poteete 2009b). The provision of public goods and services supported rather than supplanted private sector activity, as recommended by economists. Given the nearly complete absence of such goods and services prior to independence, these were not minimalistic investments. They brought tangible improvements in the quality of life of a broad cross-section of society and thus reinforced support for the BDP.

[30] Another traditional leader, Linchwe II, did not join party politics but encouraged the opposition.

Second, commodity booms put upward pressure on local currencies, but currency appreciation renders productive sectors less competitive, amplifying the weight of the booming sector in the economy. This a problem because, third, commodity prices are never stable over the long run. To limit the deleterious effects of commodity booms on productive sectors and encourage economic diversification, governments can pursue monetary and exchange policies that limit currency appreciation, restrict the flow of revenues into the economy by resisting upward pressures on wages, and building up savings, and encourage investments in non-mineral economic activities. Botswana left the Rand zone and introduced its own currency, the Pula, in 1976; it reduced the risk of currency appreciation by linking the Pula to a basket of currencies that included Botswana's most important exporting and importing partner countries, rather than having a floating exchange rate. The government took advantage of its position as the main formal sector employer to limit wage inflation (Leith 2005). Wage restraint and adherence to centrally coordinated development plans enabled Botswana to build up savings in the form of foreign reserves; by the 1980s, foreign reserves provided more than 18 months of import cover (Poteete 2009b). Expanding revenues reduced the political costs of saving by making it possible to invest significantly in public goods *and* build up substantial savings. In 1994, Botswana established a sovereign wealth fund, the Pula Fund, for long term investment of mineral earnings for future generations. Critics called for reduced savings, increased development spending, and more generous wages. Nonetheless, tangible improvements in government services and the quality of life, combined with limited exposure to critical perspectives in the absence of private media with broad circulation, resulted in consistently high levels of support for the BDP.

Wage restraint, development planning, the accumulation of foreign reserves, and conservative management of the Pula may have reduced but did not fully eliminate the negative effects of the diamond boom on other sectors. The agricultural sector, once the mainstay of the economy, stagnated despite significant public investments in infrastructure and services, particularly services to support the livestock industry. The constraints on agriculture and livestock production posed by Botswana's drought-prone environment and intermittent outbreaks of cattle diseases only underline the importance of diversification through the development of new economic activities. To promote economic diversification, the government invested in research and development (e.g., the Rural Industries Innovation Centre), created programs to support investments (e.g., the Financial Assistance Program, replaced by the Citizen Entrepreneurial Development Agency in 2001)[31], and charged various agencies and parastatals with attracting and partnering with foreign investors (e.g., the Botswana Development Corporation). Despite these efforts, insufficient new productive activities emerged that might compensate for declines in agricultural production or act as a counterweight to mining. In principle, Botswana's location and its membership in the Southern African Customs Union (SACU) should make it an attractive point of entry into regional markets, especially that of South Africa. In practice, South Africa's dominant position in SACU discourages foreign investors from setting up factories in other member states. In addition, Botswana does not offer potential investors a large pool of cheap labor. Other than mining, the most important growth occurred in the public sector – itself a product of mineral growth.

[31] FAP was not restricted to citizens, unlike CEDA. The other crucial difference is that FAP was restricted to manufacturing and certain other tradeables, whereas CEDA finance is available for any activity, including non-tradeable services.

During this period, De Beers effectively controlled the world supply of diamonds; it used its market position to keep diamond prices relatively high and stable. From the 1970s until the 1990s, while fluctuations in global prices for oil and copper and other minerals inhibited growth elsewhere, Botswana's diamond revenues expanded steadily with production. The unusual stability of global diamond markets and the extended period of increasing revenues presented Botswana with exceptional opportunities to improve socio-economic conditions for a relatively broad cross-section of the population. Although socio-economic inequalities remained severe, the majority of the population experienced significant improvements in their living conditions.

Post-Boom Developments through 1998

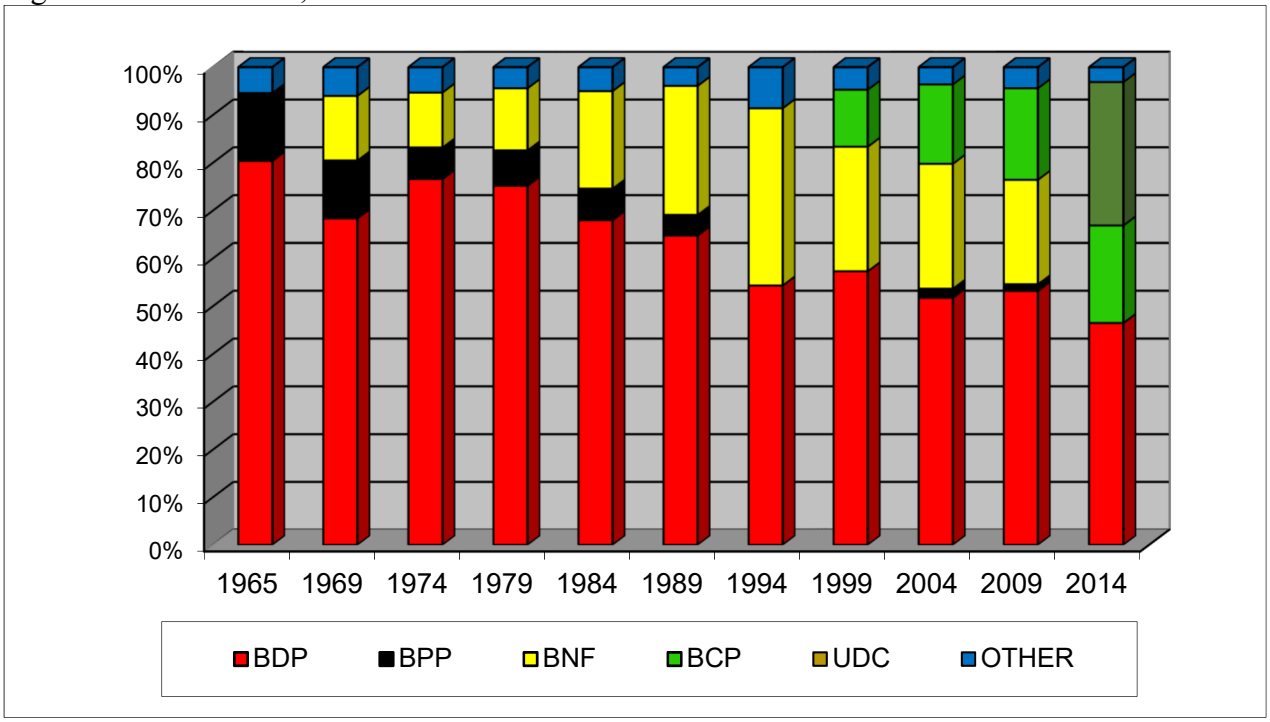
By the 1990s, Botswana's diamond boom had ended. The boom and post-boom periods brought numerous changes, including accelerating urbanization, the rise of tourism and financial services as important economic sectors, and growing problems of corruption and public sector management. Although the BDP continued to dominate the legislature, elections were increasingly competitive and electoral turnover became a real possibility. The 1990s also brought dramatic changes in international conditions, as discussed above.

As Botswana expanded its bureaucracy and transformed its diamond wealth into infrastructure and public services, it also developed an international reputation for good governance and relatively limited corruption. Since it first entered the rankings in 1998, Transparency International's annual reports have consistently designated Botswana as the African country with the lowest levels of perceived corruption (Transparency International 2017). While the country's accomplishments are significant, it is by no means immune to problems of mismanagement and corruption. The expansion of the state increased opportunities for malfeasance while the development of the private media since the 1980s made it more difficult to hide these problems. Elite corruption threatened the survival of the National Development Bank in the late 1980s, undermined the Botswana Housing Corporation in the early 1990s, and reportedly contributed to the failure of high profile development projects (e.g., the Fengyue glass manufacturing plant in Palapye; the Morupule B power plant), and undermined both the effectiveness of policy implementation and the quality of public administration (Good 2008; Poteete 2013). In 2018, large unauthorized diversions reduced the ability of the National Petroleum Fund (NPF) to stabilize domestic fuel prices. Since the early 1990s, corruption and accusations of corruption have forced the resignation of a vice president and several senior cabinet members, prompted the formation of several commissions of inquiries and anti-corruption bodies, and called into question the developmental orientation of the long-ruling BDP.

With less consistent economic growth, a more literate, urbanised and connected population, and increasing complaints about government performance, elections have become more competitive. Support for the BDP began to decline in the 1980s and, especially in urban areas, the opposition began to consolidate behind the Botswana National Front (BNF). In the wake of a series of corruption scandals and a major strike by low-grade or industrial public sector workers in 1991, the BNF's electoral share surged more than 10% in five years, from 27% in 1989 to 37.1% in 1994. (See Figure 10.)

If that rate of growth had continued, Botswana might have experienced electoral turnover in 1999 or 2004. The BDP took this possibility seriously. In the 1990s, the government coopted elements of the opposition's agenda for reforms by lowering the voting age to 18, establishing the Independent Electoral Commission (IEC) and Directorate on Corruption and Economic Crime (DCEC), introducing a presidential term limit, and embarking on public sector reforms.

Figure 10: Vote Shares, 1965 – 2014



Post-Boom Developments since 1998

The BNF's implosion in 1998 gave the BDP a reprieve in the 1999 elections. Subsequently, the downward trend in BDP's electoral support resumed, falling to 46.5% of the vote in the most recent elections in 2014. Distortions arising from plurality elections involving more than two competitive parties have enabled the BDP to stay in power with a substantial legislative majority Very much aware that a lack of unity makes a change of government through elections more difficult to achieve, the various opposition parties attempt to form a common front before every election. Pacts formed for the 2004 and 2009 elections failed to unite the most important parties and had limited effects. An umbrella party formed prior to the 2014 elections had greater, if still partial, success. Since 1998, the electoral threat to the BDP has fluctuated with the degree of opposition unity or in-fighting. Dynamics within the BDP also influence the time horizons of politicians and thus institutions, policies, and practices.

Despite the implosion of the opposition in 1998, the early 2000s brought a second wave of anti-corruption measures, including the creation of the Public Procurement and Asset Disposal Board (PPADB) (in 2002) and the Directorate of Public Prosecution (DPP) (in 2005). Reforms to the Public Service Act in 2005 brought Botswana into compliance with several International Labor

Organization conventions. Since 2008, however, the BDP has a series of challenges from within factional conflict as well as the opposition and civil society. During flash points, the president and the BDP have appeared to be more focused on managing political threats than developing and implementing strategies for economic development.

The introduction of a ten-year limit on presidential tenure, for example, responded as much to succession struggles within the BDP as to opposition demands for more checks on executive power. Indeed, after the 1994 elections, the BDP went through a period of managed generational renewal. President Masire and several long-serving cabinet members retired. In 1998, Masire's Vice President, Festus Mogae, ascended to the Presidency, the first to do so under the new automatic succession provision in the Constitution. In an effort to stifle factional competition, President Mogae and the BDP recruited Ian Khama, son of Botswana's first president and traditional leader of the populous Ngwato *morafe*, into politics from his position as head of the Botswana Defense Force. Khama was appointed Vice President in 1998, upon Masire's retirement, and became President in 2008 when Mogae reached the presidential time limit. At least initially, a broad cross-section of Botswana society welcomed Khama, whether on account of his traditional status, professional reputation, or populist style. His populist and more personalistic approach to governing, however, antagonized senior civil servants.[32] And, not surprisingly, Khama faced resentment from ambitious BDP politicians who felt that they had been sidelined.

Rather than uniting the party, Khama's arrival fueled factionalism. Following his succession to the presidency in 2008, Khama openly identified with one of the factions and campaigned on its behalf during internal party elections in 2009. When the other faction won all elected positions on the BDP's central committee, Khama sought to circumvent them. The conflict ended up before the courts, which refused to rule on the merits of the case on the grounds that Khama, as president of the country, enjoys immunity from prosecution. This conflict had an electrifying effect in the run-up to the 2009 elections (Poteete 2012). With BDP factions competing for representation in the National Assembly, the BDP actually increased its vote share slightly, from 51.7% to 53.3%, and won 78.9% of the elected seats.

After the elections, efforts by Khama and his supporters to quash factional rivals ultimately split the party. After either being expelled from the BDP or resigning in defiance, several dynamic young parliamentarians and activists established the Botswana Movement for Democracy (BMD). The BMD partnered with the BNF and a much smaller regional party as the Umbrella for Democratic Change (UDC). The UDC, however, excluded the Botswana Congress Party (BCP).

The opposition in general and the UDC in particular gained support from the labor movement. Reforms to the Public Service Act in 2005 allowed unionization of the public sector.[33] After collective bargaining stalled and with authorization from a state-appointed mediator, the Botswana Federation of Public Sector Unions (BOFEPUSU) embarked on Botswana`s first legal

[32] [Also the influence of his military background, leading to a less consultative and more "top down" style. Plus his lack of education and lack of interest in technical issues, policy analysis/evaluation etc.]

[33] Previously, only the lowest paid members of the public sector, those designated as industrial grade, had been allowed to unionize.

public sector strike on 18 April 2011. The government took a hard line and the conflict escalated. Worried that increasing violence would undermine public support, BOFEPUSU leaders eventually "suspended" the strike on 13 June 2011. After the strike ended, tensions between government and the unions played out in other fora, including the courts and electoral politics as well as in the workplace.

Almost as soon as he came into power, Khama had to deal with the impact of the global financial crisis and the impact on the diamond industry, in 2008-9, and accompanying macroeconomic impacts. Throughout 2010 and 2011, Khama and the BDP more generally seemed more concerned with squashing challenges, whether from rival factions, the opposition, or labor unions, than with macroeconomic management. With a fairly swift recovery from the global financial crisis in 2010 - 2011, especially in the diamond industry, in 2010-11, there was no real need to deal with macroeconomic issues. Plus, the challenge of dealing with the transition to the post-diamond future required confronting some hard truths (e.g. lack of competitiveness in the traded goods sector) that would be tough to address (reducing costs and increasing productivity). This was easier to avoid / postpone than confront, especially once the GFC-linked crisis mode had passed and as political challenges increased.

On 24 October 2014, for the first time, more Batswana voted for opposition parties than for the BDP. Nonetheless, the opposition vote split between the UDC (30%), the BCP (20.4%), and several independent candidates (3.1%). Under Botswana's first-past-the-post electoral system, the BDP won 70.2% of the elected seats in the National Assembly with 46.5% of the vote. These results underlined both the possibility of a change of government via elections and the costs of opposition fragmentation. With an eye on the next elections in 2019, the UDC expanded to include the BCP in early 2017. By mid-year, however, the BMD split violently, throwing the opposition project into disarray and increasing the prospects of another BDP government despite deepening dissatisfaction with government performance.

In April 2018, about a year and a half before the next general elections, Khama's term expired and his Vice President, Mokgweetsi Masisi, automatically became President. Between his appointment as Vice President and inauguration as President, Masisi faced recurring challenges from rivals within the BDP. Masisi had cultivated a reputation for loyalty to Khama, and many – apparently including Khama himself – expected Masisi to protect his predecessor's interests. Instead, once installed as President, Masisi took a number of symbolic actions to signal his independence from Ian Khama and his intent to change course. Masisi's actions to reign in the security sector, tackle high profile cases of corruption, and engage more openly with the media curried favor with those disenchanted by Khama, both within and beyond the BDP. They also, however, antagonized Khama and his allies. Months of increasing tensions between the former president and his successor culminated in May 2019 with Ian Khama leaving the BDP for a new political party and threatening to work with the opposition. This development dramatically heightens uncertainty about the outcome of elections due within six months time. These newly heightened political threats inevitably distract attention from the challenges of long-term macro-economic management. Botswana's developmental performance moving forward hinges on the country's responses to this confluence of increasing political as well as economic uncertainty.

Conclusions

Has Botswana confronted the sorts of challenges associated with the resource curse? This article demonstrates that Botswana's experience with diamonds is exceptional. Over the course of two decades, Botswana benefited from the development of some of the world's most valuable diamond mines and the unusual stability of diamond prices. It is only with the end of this period of expansion and the increase in market volatility that Botswana has begun to confront the sort of challenges associated with the resource curse.

Will Botswana manage to sustain diamond-dependent development if diamond markets become more volatile and thus more like oil? Botswana's recent developmental record is more ambiguous than is often recognized. Rates of economic growth since the 1990s are respectable but unexceptional in light of improved economic performance across the continent in the early 2000s. There is evidence of a gradual erosion in the quality of governance, as reflected in recurring scandals about corruption, influence peddling, and mismanagement. Accusations of corruption and mismanagement that were shocking in the late 1980s and early 1990s but have become commonplace. The past decade brought a deterioration of government services, proliferation of non-productive infrastructure projects, and ongoing problems of government waste, and mismanagement. Examples of waste include a variety of populist economic programs that offer short-term material benefits to the poor without addressing underlying sources of poverty. These measures do little to promote economic resilience in an increasingly challenging macroeconomic context. Nonetheless, short-term fluctuations in revenues have thus far had short-term effects on macroeconomic indicators, demonstrating a perhaps surprising degree of resilience for an economy that depends so heavily on mineral exports.

Waves of reforms have occurred, reflecting the dynamics of political competition and the intensity of economic pressures. The combination of decreasing security in office with the absence of a coherent opposition does not bode well as it encourages a short-term approach to macroeconomic management that privileges the interests of insiders over inclusive, long-term development.

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