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The presource curse in Africa: Economic and political effects of anticipating natural resource revenues

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ABSTRACT

The notion of the ‘resource curse’ suggests that large inflows of extractive industry revenues cause many adverse macro-economic and political effects. The resource curse literature focuses on the impact of *actual* inflows of extractive resource revenues. However, *anticipation* of future resource revenues can also lead to negative macro-economic and political effects even *before* resource extraction takes place, which points to the role of behavioural aspects of the ‘resource curse’. Using empirical evidence from three African countries, this article investigates to what extent the anticipation of future extractive revenues led to ‘presource curse’ effects. It finds that all three countries experienced negative effects as a result of anticipation of future extractive revenues, including economic growth volatility, higher levels of national debt, eroded governance and societal conflicts. Given the phenomenal increase in oil, gas and metal ore exploration across Africa, it is likely that many countries experience the negative effects of a presource curse without natural resource extraction or long before natural resources are actually extracted.

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1. Introduction

The notion of the ‘resource curse’ suggests that large inflows of extractive industry revenues cause many adverse macro-economic and political effects (for literature reviews: Ross, 2014; Gilberthorpe and Papyrakis, 2015). The resource curse literature focuses on the impact of *actual* inflows of extractive resource revenues. However, it has recently been suggested that *anticipation* of future resource revenues can also lead to similar negative macro-economic and political effects even *before* resource extraction takes place (Vicente, 2010; Hayat et al., 2013; Frynas et al., 2017; Cust and Mihalyi, 2017; Macuane et al., 2018). These recent studies point to the previously neglected role of behavioural aspects of the ‘resource curse’.

There are historical examples of the negative impact of future anticipation of resource wealth. Future anticipation related to resource booms created property bubbles, as in the case of Australia in the late nineteenth century (Blainey, 1963). Paraguay and Bolivia even fought a war in the 1930s on the anticipation that there were sizable oil reserves in the disputed border area between the two countries (Cote, 2013). But such historical evidence has been entirely neglected in resource curse scholarship.

There is a sound theoretical basis for the argument that individual decision-making anticipates future events, coming from several scholarly disciplines. Studies in economics have long suggested that individuals act on the basis of rational future expectations and macro-level economic phenomena cannot be satisfactorily explained without taking into account rational expectations (Muth, 1961; Fischer, 1980). Scholarship in psychology – such as expectancy theory and prospect theory – has also highlighted the role that expectations play in guiding individual behaviour within organisations (Scholl, 1981; Kahneman and Tversky, 1979). Above all, new emerging scholarship in anthropology and sociology has specifically explored – both theoretically and empirically – ‘orientations toward the future’ among different actors and social groups (Adams et al., 2009; Appadurai, 2013; Bryant and Knight, 2019; Cross, 2014, 2015).

Drawing on these multi-disciplinary insights and utilising the concept of ‘economies of anticipation’, we hypothesize that – in countries holding the promise of large future inflows of natural resource revenues – policy-makers and other organisations would take political and economic decisions in anticipation of *future* inflows of resource revenues, in a similar manner that decisions are taken in countries that receive *actual* inflows of natural resource revenues.

The few previous studies that addressed the effects of future anticipation of resource revenues have largely based their conclusions on economic experiments and/or investigated a single issue related to the resource curse such as corruption (Vicente, 2010), exchange rates (Hayat et al., 2013) and political power contestation (Orr, 2019). But the recent debate started by Frynas et al. (2017) and Cust and Mihalyi (2017) suggests that future anticipation of resource booms can have a multitude of economic and political effects, including economic volatility, deterioration of governance and violent conflict.

We build on this scholarship to investigate possible resource curse effects in countries that have experienced a prolonged period when future extractive revenues were widely expected, but have not yet materialized. We purposefully selected three country cases studies from Africa – Madagascar, Mozambique and São Tomé e Príncipe (STP) – to serve as a window towards understanding the relationship between future anticipation of resource wealth and resource curse effects. We have focused on Africa, as this is where major natural resource explorations and investments have continued to take place despite the economic downturn characterising developed economies. The three country cases vary widely in terms of actual natural resource presence and anticipation of future resource wealth.

Our selection is based on the theoretical assumption that states that anticipate resource revenues would experience the same resource curse effects as states with actual resources, but earlier than what the resource curse literature suggests, given that resource curse effects would take effect before resources are extracted and revenues come on-stream. In simple terms we would expect that 1) states with significant extractive resources and anticipation of greater future resources will experience some resource curse effects linked to anticipation; 2) states without significant resources but anticipation of future resources will experience similar resource curse effects to states with resources; and 3) states that experience anticipation of future resources, but have no commercially viable resources to be extracted, should experience short-term resource curse effects until it becomes evident that the underlying resource does not exist. To test our arguments, we selected three case studies that represent each of three above scenarios: Mozambique represents the first scenario, Madagascar represents the second, and STP represents the third.

We find that all three countries experienced some negative macro-level effects as a result of the anticipation of future extractive revenues, including economic growth volatility, higher levels of national debt, eroded governance and societal conflicts. All three cases therefore experienced anticipation and resource curse effects as we have conceptualised them, but only two cases actually had the anticipated resources. Indeed, our case selection, even though we ignore cases with no anticipation and no resources, demonstrate resource curse effects long before resources are actually extracted (Mozambique and Madagascar), as well as resource curse effects based on expectations that eventually dissipate once it becomes clear that no commercially viable resources exist (STP). We have previously conducted field work related to all three cases and we are familiar with the evolution of resource investments and governance in each country, and we also consulted a large number of World Bank and IMF documents.

2. The resource curse and future anticipation

Academic scholarship as well as policy papers from the World Bank and the International Monetary Fund (IMF) suggest that extractive sector revenues cause three types of resource curse effects. First, extractive sector revenues impact the economy: the currency exchange rate may appreciate, reducing non-extractive exports, and the natural resource sectors may draw capital, labour, and entrepreneurial activity away from non-resource sectors, stifling their development (e.g. Brahmhatt et al., 2010; Harding and Venables, 2013). Second, extractive sector revenues impact the political process: governance and the quality of

institutions may deteriorate, as political decision-makers have fewer incentives to encourage the development of non-resource sectors and to improve the quality of societal institutions (e.g. Brollo et al., 2013; Robinson et al., 2006). Third, extractive sector revenues increase conflicts in society: there are fewer incentives for human cooperation, as the prospects of gaining control over resource revenues fuel the activities of rebel groups, potential coup leaders, and other violent forms of political opposition (Collier and Hoeffler, 1998; Humphreys, 2005; Rodríguez, 2019), while ruling elites often use windfall revenues to eliminate opposition forces once and for all (Igreja, 2015; Macuane et al., 2018).

Whereas the resource curse literature focused on the impact of *actual* resource extraction, recent studies have provided empirical evidence that *future anticipation* of resource extraction can also cause a multitude of resource curse effects. Vicente (2010) asserts that future anticipation of an oil boom can increase corruption and can lead to a change in the allocation of public resources. Hayat et al. (2013) argue that expectations of future resource revenues can cause economic effects such as changes in the real exchange rate. Armand et al. (2019) found that providing political leaders with information about the future extractive revenue windfall increases elite capture and rent-seeking. Frynas et al. (2017) and Macuane et al. (2018) found that several African countries have experienced a broad range of resource curse effects before any extractive discoveries took place or when discoveries had been made but investments have not yet been implemented.

Indeed, a number of recent studies have shifted the attention from tangible and long-run effects of the resource curse towards the short-term impact of extractive discoveries (Cust and Mihalyi, 2017; Dupuy and Katera, 2019; Orr, 2019). A World Bank policy research paper on the effects of extractive resource discoveries (as opposed to the effects of resource production) commented that ‘the conventional estimation approaches used in the literature may overlook a short-run presource curse effect’ (Cust and Mihalyi, 2017, p.25).

Taken together, this scholarship has provided substantive evidence of resource curse effects linked to future anticipation, using very different indicators to study the phenomenon of the presource curse. We have summarised some of the most important indicators for anticipation and presource curse in Table 1. These indicators of the presource curse have helped to guide our study (we refrained from calculating real exchange rate movements, where there was no reliable, comparable historical data across the three countries).

Table 1: Illustrative indicators for studying the presource curse

Indicator of anticipation	Indicator of presource curse
exploration contract signings	changes in the real exchange rate
signature bonus payments	perceived corruption of public services
capital-gains tax for newly invested shares	level of public indebtedness
future resource-backed loans	economic growth volatility
application for EITI membership	coup d’etat

This emerging scholarship on the future anticipation of resource revenues has suffered from two limitations. On the one hand, the academic empirical studies on the resource curse have largely based their conclusions on economic experiments and investigated a single issue related to the resource curse such as corruption (Vicente, 2010), exchange rates (Hayat et al., 2013), rent-seeking practices (Armand et al., 2019), and political power contestation (Orr, 2019). On the other hand, these studies have largely failed to provide a sound theoretical basis to explain and predict how future expectations of extractive industry revenues translate into present day actions. This article hopes to begin filling this gap by providing a comparative study of a range of 'resource curse effects' in three countries, using theoretical insights from new scholarship, in particular, economic sociology. Our study goes beyond previous studies on the resource curse by not simply providing evidence on the relationship between anticipation and resource curse effects, but also providing a theoretically grounded explanation of how this relationship is mediated.

The theories that were previously used to explain the processes by which natural resource wealth translates into economic and political resource curse effects – including rentier-type theories, conflict theories and economic theories – failed to conceptualize the role of cognition and future anticipation. In contrast, new anthropology and sociology scholarship is emerging that is orientated towards the future or exploring different actors and social groups 'orientations toward the future'. For example, Bryant and Knight (2019) organize their recent book around six 'futural orientations': anticipation, expectation, speculation, potentiality, hope and destiny. Appadurai (2013) focuses on three such orientations: imagination, anticipation and aspiration, while Adams et al. (2009: 255) describe anticipation as an 'affective orientation in the name of the future'. In a nutshell, what this literature suggests is that expectations are not just about future orientations, as actors realize that something is going to happen, which they passively register, but more importantly about *acting* on these expectations.

Most notably, the new economic sociology emerging from Jens Beckert (2013, p.1) emphasizes that many economic as well as political decisions take place in situations characterized by 'fundamental uncertainty' about the context and outcomes of acting on expectations. Due to this uncertainty, 'expectations substituting for the unachievable facts but on contingent assumptions about future developments that unavoidably can only "pretend" to describe a future reality and must suggest decisions based on nothing more than "as if" assumptions about the future' (Beckert 2013, p. 8). Acting on expectations related to future possibilities for example expectations related to major natural resource windfall that are acted upon before they emerge are indeed what Beckert (2013: 2) refers to as "intentional rational" (Beckert 2013: 2), as actors want to enhance their utility but act towards the future without necessarily knowing which strategy to follow and without clarity on outcomes. Based on economics, psychology, anthropology and literature studies, Beckert refers to such action as based on "fictional expectations" that take the narrative form as discourses, stories and theories, for which the degree of credibility is key for understanding why some expectations concerning future opportunities are acted upon while others are not. Here the wonder of resource windfalls, the opportunities they potentially allow for and the fact that most developed countries in one way or another based their economic and political development on resource extraction could point at why resource endowments can still have tangible effects even when they do not actually materialise.

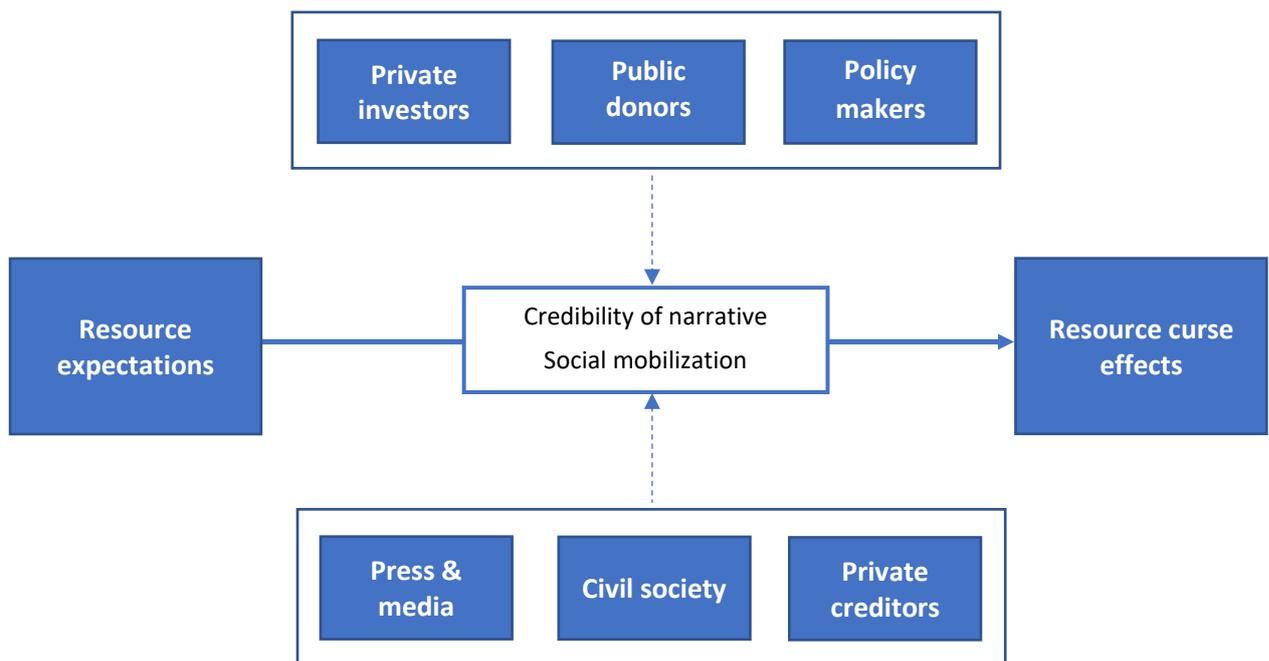
In this article, we use the concept of ‘economies of anticipation’ to distinguish future expectation from action-oriented anticipation. Jamie Cross (2014, 2015) developed his concept of ‘economies of anticipation’ around the idea of orientations. He defines ‘economies of anticipation’ as ‘the diverse ways in which people orient themselves toward the future and the ways that expected and promised futures conflict or converge’ (2015: 426). This new future oriented scholarship distinguishes between two central and different but also related notions: anticipation and expectation. Expectations are cognitive processes about some kind of future outcome, but they only translate into tangible actions when such expectations are acted upon. In contrast, anticipation is not just about expecting something but also doing something about that particular expectation.

The idea of ‘economies of anticipation’ can help to conceptualise the process by which expectation turns into anticipation. Using insights from the new economic sociology, we suggest that expectations turn into action-oriented anticipation not as the pure outcome of calculation of rational choices (as previous scholarship in rational choice economics suggested) and not as the outcome of purely psychological processes (as previous psychology scholarship such as expectancy theory suggested). Rather, the degree to which expectations turn into anticipation is ‘mediated by stories and narratives’ (Beckert’s concept of fictional expectations) where ‘action takes place in the present but is directed towards the future’ (2013, p. 2). In addition, we suggest that the transformation of expectations into action-oriented anticipation is mediated by social group mobilization, based on the assumption that a certain level of social consensus is required to develop present-time actions in anticipation of future outcomes (e.g. strong support from within the country’s main political party or certain key groups in society). In other words, we conceptualize two mediating effects – the credibility of stories and narratives, and the required level of social group mobilization – as the theoretical basis for understanding the mechanisms behind the resource curse.

These two mediating effects can be used to explain the variability of resource curse outcomes across countries. Comparative cross-country studies – coming from both traditional international relations perspectives and the more recent political settlement perspective – demonstrate that there are wide differences in the quality and nature of resource governance between resource-rich countries (e.g. Bebbington et al., 2018; Ovadia, 2016; Singh and Bourgoignie, 2013). According to this scholarship, differences in resource governance can be ultimately attributed to the varying constellations of different actors with divergent ideologies and cognitive frames (which relate to the variation in stories and narratives) and divergent power bases and sources of financial support (which relate to the level of social group mobilization). Studies on resource governance have shown that these actors include private companies and creditors who are enablers of resource investments (e.g. Salimo et al., forthcoming) and financial credit (e.g. Taarup-Esbensen, 2019), public donors who inter alia engage in geodata information and administration, macro-fiscal management, investment in infrastructure and skills development (e.g. Buckley et al., 2017; Macuane et al., forthcoming), the media that can legitimize or delegitimize certain resource governance practices and policies (e.g. Coryat, 2015; Davies et al., 2017), civil society that can support or oppose resource investments (e.g. Dougherty, 2016: 6) and can foster institutional change (e.g. Arond et al., 2019), and, finally, public policy-makers who can build

coalitions in support of extractive projects (e.g. Buur et al., 2019), foster institutional change and enact government policies that influence macro-economic and macro-political outcomes (e.g. Bebbington et al., 2017). These different actors critically influence the credibility of narratives on future riches and they mobilise society to enact these narratives. By extension, an analysis of the influence and the historical evolution of these actors can therefore explain cross-national variability in the linkages between resource anticipation and resource curse outcomes. Fig.1 summarises our framework.

Fig.1. Simplified presource curse framework



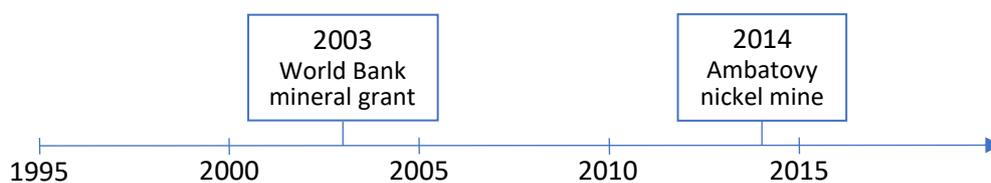
3. Case study context and timelines

Given the exploratory nature of current research on presource curse effects, we selected three country case studies for our analysis. All three chosen countries – Madagascar, Mozambique and São Tomé e Príncipe (STP) – experienced presource curse effects. But these three cases can also illuminate important cross-country differences, as they experienced different real-world outcomes of extractive industry development. Mozambique experienced presource curse effects from around 2010 on the basis of huge natural gas discoveries and large ongoing investments in natural gas production – in anticipation of up to US\$ 95 billion of gas revenues over 25 years. Madagascar experienced significant presource curse effects from around 2003 on the basis of considerable mining and oil exploration activities that turned out to be largely disappointing, but some mining production eventually started. STP experienced presource curse effects from the late 1990s on the basis of signing oil contracts with foreign companies and limited exploration activities, but the oil companies eventually withdrew from the country and oil production actually never materialised.

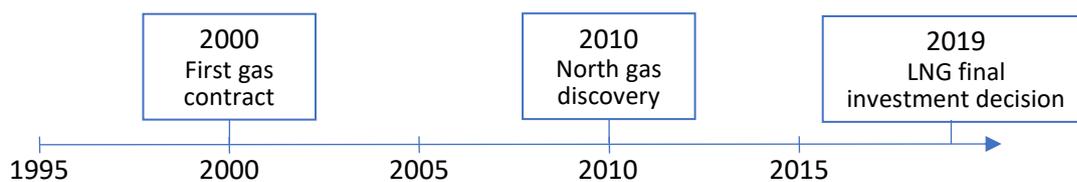
In order to investigate the presource curse, it is necessary to precisely establish the timeline when the country experienced significant expectations of a future resource boom. The emerging literature on the presource curse suggests that the conclusion of oil contracts with foreign companies (Frynas et al., 2017) and an extractive discovery (Cust and Mihalyi, 2017) can represent the two types of formative events that lead to a presource curse. We will use these two yardsticks to understand presource curse effects in the three countries. The timelines for the presource curse in the three countries are summarised in Fig.2.

Fig. 2. Timelines of resource wealth anticipation.

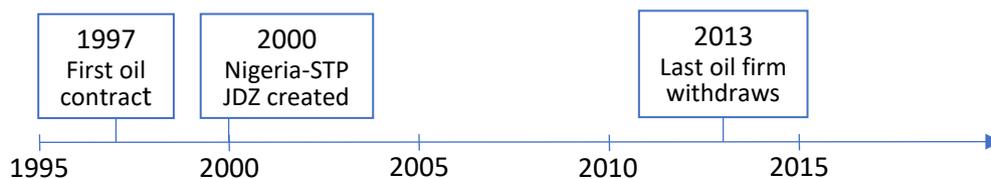
Madagascar



Mozambique



São Tomé e Príncipe



São Tomé e Príncipe

In STP, future expectations of significant extractive revenues emerged around 1997 after the signing of an agreement with a small American consultancy firm ERHC to negotiate on behalf of the STP government with potential foreign investors for the award of oil licences. In 1998, the STP government and ERHC created a joint venture company, Sociedade Nacional de Petroleos de São Tomé e Príncipe (STPETRO), with a 51 percent government shareholding. STPETRO signed an agreement with the American oil firm Mobil (later ExxonMobil) to evaluate the oil and gas potential in the country's offshore area. Mobil then undertook to assess STP's geological potential over a period of 18 months. In 1999, the

influential foreign businessman Chris Hellinger also signed an agreement with the STP government to build a petroleum logistics centre. In 2000, the governments of STP and Nigeria signed an agreement to create a Joint Development Zone in the most promising offshore exploration area between the two countries (Frynas et al., 2003). Therefore, the period from 1997 to 2000 can be assumed to mark the beginning of resource boom expectations in STP. The final cut-off point for future anticipation was 2014 when the last foreign oil firm withdrew from STP following disappointing exploration results.

Different actors helped to turn expectations into active anticipation. To start with, the signing of agreements with Mobil and the Nigerian government – accompanied by media reports – lent further credibility to the emerging narrative about STP's future potential as an oil producing country. In the late 1990s, there were also credible reports of successful oil discoveries in the territorial waters of neighbouring Nigeria to the North and neighbouring Equatorial Guinea to the East. The involvement of foreign governments further strengthened this narrative by signalling that STP's international importance has increased as a result of the imagined future oil wealth. On the one hand, the Angolan government became actively involved in STP's politics and the Angolan state oil company Sonangol provided technical assistance and advice to the government of STP in its negotiations with Mobil in 1998-1999 (during President Trovoada's term in office) and again negotiations with Nigeria in 2002 (during President Menezes term in office). On the other hand, the US government pledged military assistance to STP, beefed up security at its Voice of America relay station in STP and, in 2002, proposed building a naval base on the island, in order to protect its oil interests in the region.

Engagement with civil society on natural resource transparency also supported the narrative of an emerging resource-rich state. By 2007, the STP government committed to joining the EITI (STP officially became an EITI candidate country in 2008), while an international team of experts at Columbia University led by Prof. Jeffrey Sachs assisted the government on revenue management from 2003. Finally, the international media reinforced the credibility of the narrative by over-emphasising STP's emergence as a resource-rich state, with the British newspaper *The Times* suggesting that each Santomean could 'soon be worth as much as £5m each' (Goncalves, 2002) and the reputable *New Yorker* magazine even comparing STP to Saudi Arabia (Anderson, 2002).

At the same time, STP policy-makers mobilised alliances and support for their vision of a resource-rich state. The president of STP, Miguel Trovoada (1991-2001), and his successor Fradique de Menezes (2001-2011) personally led negotiations with Nigeria, Angola and other foreign actors, and mobilised domestic support for STP's vision as a future petro-state (Frynas et al., 2003). Menezes visited the United States and Nigeria to garner support for his extractive plans, and he also partnered with a team of Columbia University experts led by Prof. Jeffrey Sachs, who – in addition to providing technical advice on future revenue management – set up a national forum, through which Santomeans were informed about the country's future oil revenues and sought input from citizens on how such future revenues might be spent. In the United States, the so-called Africa Policy Oil Initiative Group (AOPIG) – a Washington-based forum consisting of oil companies and State and Defence

Department officials – lobbied the US government to provide greater support for STP and bolster the interests of its members in the region.

Madagascar

Madagascar experienced two waves of future extractive expectations. In the mid- to late-1990s, Madagascar expected a resource boom in sapphires. However, sapphire boom expectations never translated into action-oriented anticipation at the level of government and the macro-economy. Sapphires in Madagascar were found in alluvial deposits and they were largely extracted by illegal artisanal miners who exported them tax-free outside the control of the Malagasy state. Therefore, the Malagasy government and the country's elite did not become actively involved in the boom and did not anticipate huge future revenues for themselves. Madagascar's second wave of future extractive expectations came after the 2002 political crisis following a disputed presidential election. Madagascar's new President Marc Ravalomanana (ruled 2002-2009) started economic reforms that encouraged foreign investment and the government actively collaborated with the World Bank and the IMF as part of structural adjustment reforms. In 2003, the World Bank provided US\$ 32 million to Madagascar for managing the country's mineral resources. In 2004, USAID released a map that showed Madagascar's potentially rich gem areas in order to encourage the sale of prospecting licences to foreign mining companies. During 2002-2008, the government awarded almost 1300 mining licences (an increase from around 30 in 2002), covering a wide range of resources, including iron, nickel, cobalt, gold, ilmenite, bauxite, and uranium. By 2009, about 216,000 square kilometres, or more than 35 percent of Madagascar's total surface area, was covered with exploration permits. Therefore, 2003 can be assumed to mark the beginning of resource boom anticipation in Madagascar. The final cut-off point for future anticipation was 2014 when the large foreign-owned Ambatovy nickel mine started production, i.e. future expectations gave way to actual resource extraction (Frynas et al., 2017).

The speedy growth of exploration activities by foreign mining companies from 2003 created the impression of impending resource riches. New Chinese investment in mining exploration by companies such as WISCO (iron mining) and Sunpec (oil exploration) lent credibility to the emerging narrative about Madagascar's future potential as a resource-rich country, with China replacing France as Madagascar's main trading partner in 2003. The support by foreign donors and creditors also provided credibility. The World Bank and USAID directly contributed to resource boom anticipation by actively helping the Malagasy government to identify new potentially resource-rich areas from 2003 onwards. Norway's Oil for Development Program also assisted the government on resource management from 2007. In addition, a broad group of private creditors also signalled support for future projects, long before they came onstream. The financing structure for the Ambatovy mine (which eventually opened in 2014) had already been negotiated from 2005 onwards, and included commitments of US\$650 million from the Japan Bank for International Cooperation, \$650 million from Korea's Kexim, \$300 million from Export Development Canada, \$150 million from the African Development Bank and \$300 million from the European Investment Bank. The international media contributed to resource boom anticipation, with the respected

Economist magazine predicting a ‘mineral bonanza’ (Anonymous, 2007) and a French-language publication suggesting that Madagascar is an ‘eldorado for mining companies’ (IRESA, 2012).

President Ravalomanana, who was previously a successful businessman, personally drove the economic reform agenda and mobilised both domestic and foreign support for Madagascar’s vision as a future resource-rich state – on the assumption that the large Ambatovy mine would start production by 2010 (actual start of production was in 2014). As part of this social group mobilization, the government released the Madagascar Action Plan, a bold development plan for 2007-2012, which envisaged rapid economic growth combined with a strategy for poverty reduction. The plan, combined with the government’s ‘Education for All’ initiative, helped to secure donor support for the government’s social and economic policies, as well as further support for the development of the extractive sector. Engagement with civil society supported the vision of an emerging resource-rich state. In October 2006, the Minister of Energy and Mines committed Madagascar to apply for EITI membership, and Madagascar officially became an EITI candidate country in 2008. In 2009, around 30 Malagassy civil society organisations working on environmental issues formed the Alliance Voahary Gasy; in contrast to Western environmental groups that tend to oppose extractive developments because of local concerns and climate change, the alliance welcomed ‘responsible’ natural resource management and effectively helped to mobilize in favour of extractive developments through capacity-building projects, networking and, above all, communication. President Ravalomanana’s position weakened over time, as he found himself in conflict with domestic actors (e.g. conflict with the powerful Roman Catholic Church of Madagascar) and international actors (e.g. some foreign aid was suspended in December 2008 over budget transparency concerns) and he was eventually removed from power in a coup in 2009, but his successor Andry Rajoelina continued to pursue policies on the anticipation of a resource boom (see section 7 for more details).

Mozambique

Mozambique had already signed a gas pipeline agreement with the South African state oil company Sasol in 2000 for a small concession that started producing gas in 2004, but this \$2.4 billion investment did not significantly impact Mozambique’s economy in any profound way nor did it create any action oriented anticipation in the form of excessive debt creation or internal conflict. The expectation of a future extractive boom started in a dramatic fashion with the ‘discovery’ of over 180 trillion cubic feet (Tcf) gas in the offshore Rovuma Basin in the Cabo Delgado province in northern Mozambique in December 2010. The discovery placed the country on the global energy map as one of the hottest emerging energy investment destinations (Salimo, 2018). The North gas exploration costs alone exceeded Sasol’s total investment in the country. Subsequently, massive investments in two Liquefied Natural Gas (LNG) production facilities have since been planned and reached final investment decision in 2019 for the Anadarko/Total consortium and are expected in 2020 for the ENI/ExxonMobil consortium. According to predictions, investments in LNG production will potentially reach \$60 to \$80 billion over the coming decade. When fully implemented, this would represent the single largest foreign direct investment (FDI) ever in

a single African country. Thus, 2010 can be assumed to mark the beginning of resource boom expectations in Mozambique that continues to-date.

The involvement of very large foreign investors added to the sense of feverish anticipation in Mozambique. The US mid-range oil company Anadarko and the Italian company ENI, which made the original discoveries in 2010, sold substantial shares in their concessions in 2013 (ENI to the China National Petroleum Corporation) and 2014 (Anadarko to the Indian company ONGC Videsh) in order to finance their exploration activities. These sales also generated substantial one-off capital gains taxes for the Mozambican state (see the next section). In 2019 both concessions saw majors ExxonMobil and Total buying up key LNG stakes from ENI and Anadarko taking on the role as lead firms at the same time as the government approved the development plan for a third LNG project by ExxonMobil in 2019. These three LNG projects combined were forecast to generate \$95 billion future revenues for the state over the next 25 years (Hill, 2019), further adding to the anticipation of Mozambique becoming a middle-income country within 10 years. The support by foreign donors contributed to extractive boom anticipation in Mozambique. A 2012 study commissioned by the International Finance Corporation (IFC) – the commercial arm of the World Bank – for the Government of Mozambique lent credibility to the discoveries and added to expectations, as it suggested that the estimated reserves of natural gas were even far higher at 277 Tcf (ICF, 2012: 23; see also Cabinet Council, 2014: 4). Based on these predictions, international donors embarked on extensive capacity building for Mozambican state institutions. The comprehensive and well-funded World Bank ‘Mining and Gas Technical Assistance Programme’ (MAGTAP) in March 2013 was co-financed by the UK development agency DfID, with more than US\$85 million for capacity building (DfID, 2013: ii). Finally, the international media reinforced the credibility of the narrative on Mozambique’s emergence as a leading resource-rich state in Africa, inter alia with CNN asking ‘Is Mozambique the next oil and gas hub?’ (Idowu, 2017) and the gas sector newsletter Gasworld asking if Mozambique is ‘the new Qatar?’ (Radnedge, 2015).

Social mobilisation involving civil society promotion of natural resource exploration transparency and accountability supported the narrative of an emerging resource-rich state. While Mozambique was already accepted as an EITI candidate country in 2009, the EITI process really took off after the 2010 discovery. When Mozambique was in the middle of applying for membership of EITI (the country was eventually admitted in 2012), the Forum for Biodiesel and the National Platform Community Mining as well as the investigative civil society organisation, the Center for Public Integrity (funded by twelve international donors) began systematic transparency campaigns on Mozambique. Furthermore, the World Wildlife Fund (WWF), as lead organisation, formed a Multisectoral Platform for Natural Resource Governance involving more than 50 CSOs in 2014 in direct response to the EITI process. As in the case of Madagascar, these organisations did not oppose resource developments as such, but aimed to improve future resource governance before production started. Most crucially, the 2010 discovery triggered social mobilization by both the ruling Frelimo movement that tried to eliminate the opposition once and for all, and the former guerrilla group and main opposition party Renamo that returned to ‘the bush’ in order to benefit from the future gas boom (see section 7 for more details).

4. Economic volatility

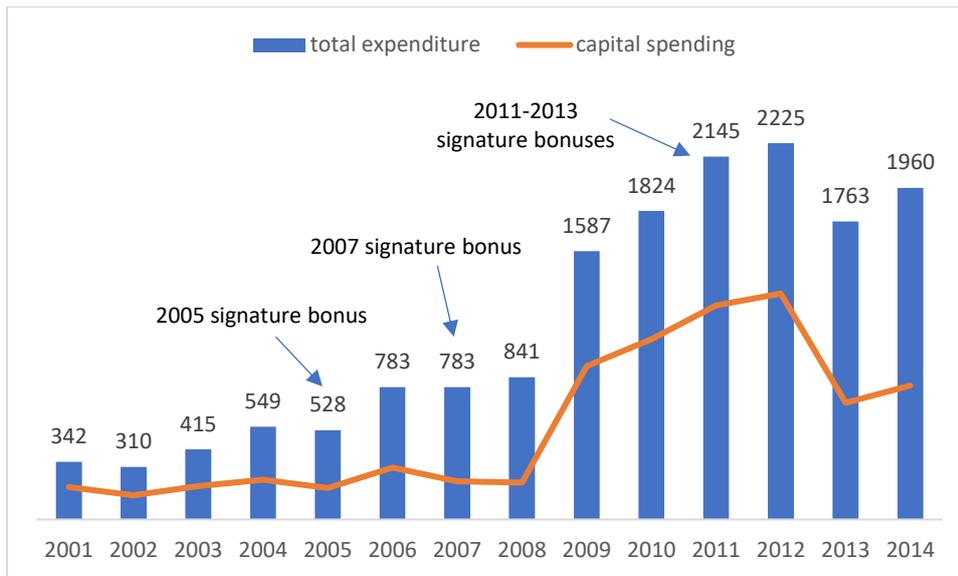
Resource curse scholarship has provided ambiguous results on the impact of resource inflows on economic growth. Early studies have suggested that resource-rich countries suffered from lower growth rates compared with resource-poor countries (Auty, 1993, 2001; Sachs and Warner, 1999), while a number of newer studies have provided statistical evidence that the effects on growth are indeed neutral or beneficial (Cavalcanti et al., 2011; Brunnschweiler, 2008) and/or are subject to considerable contingency effects (Collier and Goderis, 2007; Kolstad and Wiig, 2009). At the same time, studies have consistently found that one of the key resource curse effects is related to economic volatility (measured by standard deviation of the macroeconomic outcome), rather than growth patterns (for reviews, see Ross, 2014; Gilberthorpe and Papyrakis, 2015).

In resource-rich countries, the key source of volatility are fluctuations of global market prices for oil, gas and metal ores, which influence the level of natural resource income for the country and levels of private investment. Volatility in government revenues makes it difficult to maintain fiscal discipline and leads to short-term planning and spending decisions. Lower commodity prices may lead to lower investment levels in resource-rich countries, which may result in fluctuations in economic growth. In countries that expect a future extractive boom, global market prices cannot be a direct source of volatility since these countries do not have any significant levels of natural resource exports. But we argue that economic volatility can still originate from two sources in such countries: signature bonuses (and related tax payments) and government spending decisions.

Oil, gas and mining companies often pay signature bonuses for obtaining lucrative exploration licences from governments. Typically, signature bonuses are the key form of tangible income generation from the extractive sector in countries that do not produce commodities yet but expect commodity production in future. All three countries in our study – Madagascar, Mozambique and STP – obtained sizeable speculative signature bonuses and capital gains taxes (CGTs) long before any extraction actually took place.

In STP, several oil companies – including the American major Chevron Texaco and the Chinese state-oil company Sinopec – made signature bonus payments totalling US\$ 49 million (562 billion dobra) and US\$ 29 million (413 billion dobra) in 2005 and in 2007 respectively (IMF, 2006). The signature bonuses were equivalent to 43% of the country's GDP in 2005, and 20% of GDP in 2007 (IMF, 2012, p.6). This inflow was a very real source of fluctuations but – at the same time – it encouraged future anticipation. Government spending in 2005 and in 2007 actually decreased or remained the same compared to the previous year, as seen in Fig. 3. Government spending had already increased to record levels during the preceding 2003–4 and 2005–6 financial years, as the STP government anticipated (but was not yet assured of) future signature bonus payments.

Fig. 3. Government expenditure in STP, 2001-2014 (billion dobras)



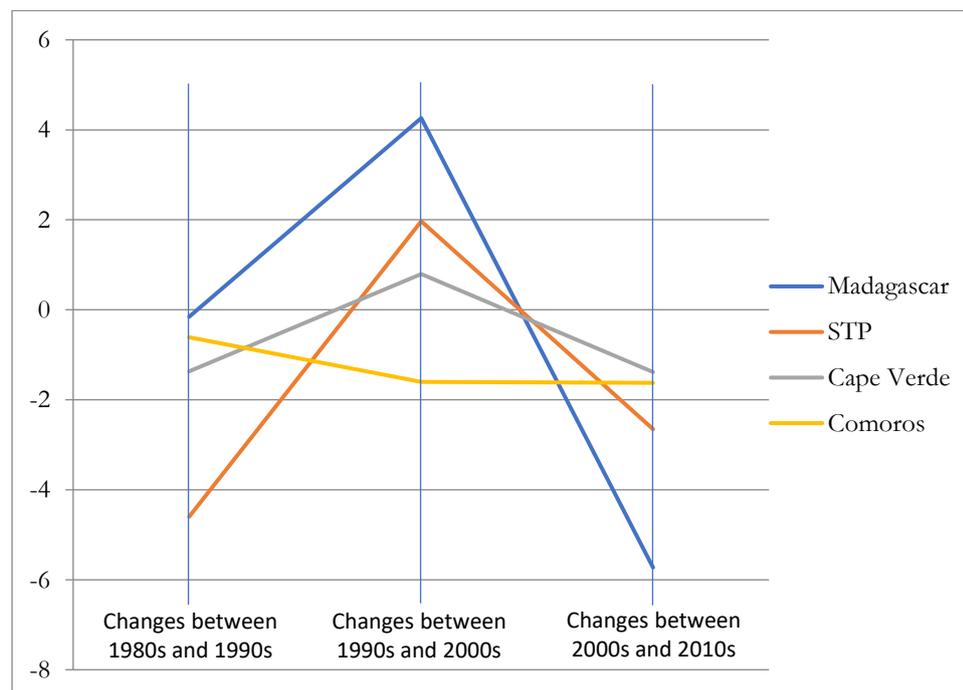
In the late 2000s, the STP government once again increased capital expenditure to fund a colossal public investment programme, on the assumption that additional large signature bonuses would be paid in 2011 and that oil production would commence around 2015. Between 2008 and 2010, the government capital expenditure skyrocketed from 219 to 1066 billion dobras, with further future increases planned (Fig. 3). The IMF (2012) commented that ‘the scenario [on which the government budget was based at the time] continues to assume receipts of oil signature bonuses in 2011 and 2012, reflecting the results of completed contracts and on-going negotiations’. In the end, the signature bonuses were much smaller than expected: US\$ 2 million in 2011, US\$ 2 million in 2012 and US\$ 5 million in 2013. By then, it became clear that the expected oil riches would not materialise soon, as China’s Sinopec withdrew in 2012 and France’s Total announced a withdrawal from the country in 2013. Accordingly, the STP government was forced to significantly curb capital expenditure in 2013. In sum, anticipation of future oil revenues resulted in considerable volatility in public investment, which affected growth volatility.

In Madagascar and Mozambique, signature bonuses were considerably larger than in STP. But, in contrast to STP which enjoyed full accountability with regards to signature bonuses, both Mozambique and Madagascar lacked government accountability and were not transparent about their signature bonuses and it is difficult to demonstrate the impact of signature bonus anticipation on volatility.

In the case of Mozambique, however, volatility was driven by extractive income in the form of capital gains tax (CGT). From 2012 onwards, CGT was by far the biggest contributor to Mozambique’s government revenues from the extractive sector. In the peak year 2014, the natural gas sector contributed 90% of the over \$1 billion total extractive revenue that amounted to 27% of total government revenue. The largest revenue streams were capital gains tax (71%) and corporate income tax (19%) (EITI, 2015, 2018, 2019). These initial sales of shares all took place during the super cycle resource boom that last until 2014. When ENI teamed up with ExxonMobil in 2018 and Anardarko was taken over by Occidental Petroleum that immediately sold its African assets off to TOTAL in 2019, CGTs were much smaller than during the peak years 2012-2014, which provided a source of volatility.

As the economic volatility of one country is relative to that of other countries, we can compare Madagascar and STP with similar neighbouring countries (Mozambique's anticipation of LNG windfall income is too recent for meaningful long-run calculations). We use Cape Verde and the Comoros for comparative purposes – both countries are also small island economies in the region. Cape Verde shares a Portuguese colonial path dependence with STP, while the Comoros shares French colonial path dependence with Madagascar. Fig. 4 depicts GDP growth volatility of all four countries by measuring the changes in the standard deviation of growth rates between time periods. A line that is close to the horizontal axis indicates small growth volatility across the decades, something that is considered a desirable macroeconomic objective. For STP, though, we find that the line is volatile across the time period, always well above or below the horizontal. Fig. 4 demonstrates that growth in STP and Madagascar was much more erratic than in the other two countries (line is further apart from the horizontal) between the 1990s and 2000s when both countries experienced resource boom anticipation, providing tangible support for the volatility effect of extractive income anticipation.

Fig. 4. Economic growth volatility changes in Madagascar and STP.



Source: Frynas et al. (2017), p.246.

5. National debt

Scholarship has linked the resource curse to national indebtedness, as resource-rich countries have been shown to use natural resources as collateral for debt in international

markets (Manzano and Rigobon, 2001; Sarr et al., 2011), and their “boom-based borrowing” may lead to debt crises and economic volatility (Usui, 1997; Manzano and Rigobon, 2008).

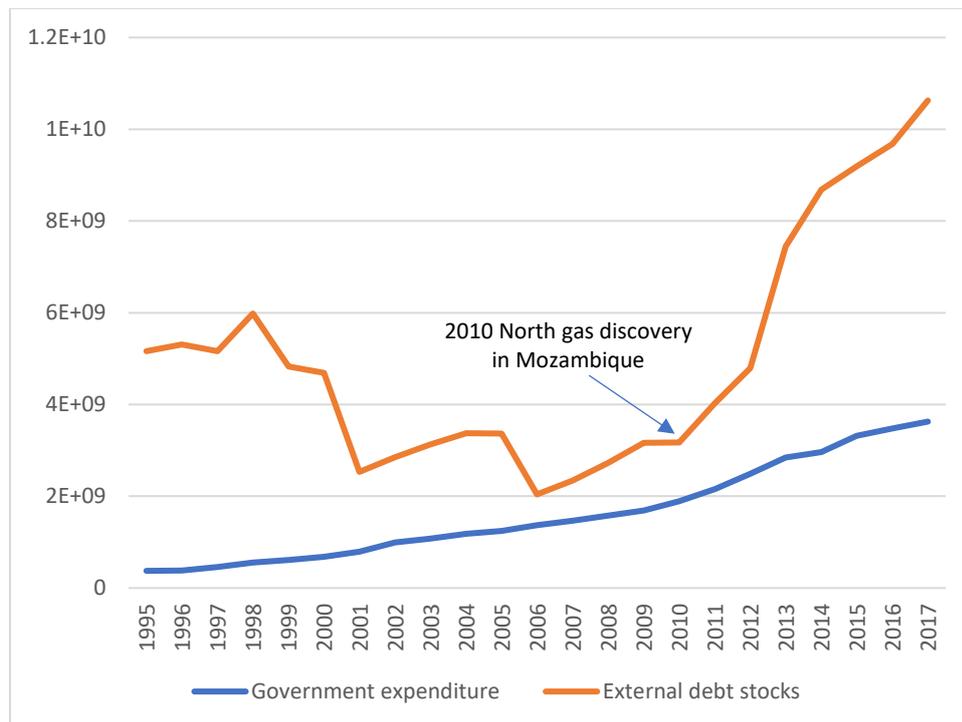
We found the clearest evidence on the link between resource boom anticipation and indebtedness in Mozambique. The country’s external debt stocks have increased very sharply since the large gas discovery in 2010 (Fig.5). When it became known that massive quantities of natural gas would be available in the near future (originally anticipated from 2020) and Mozambique became gripped by oil boom anticipation during the second administration of Prime Minister Guebuza, the government – through hastily setup state owned enterprises (SOEs) – secretly took three loans with state guarantees during 2012-2014. When the secret loans were discovered in 2016, they totally undermined the state budget and financing, while the IMF immediately suspended assistance to Mozambique. While Mozambique’s total debt service (as percentage of exports of goods, services and primary income) – increased only slightly from 3.3% to 4.5% during 2010-2014, it subsequently increased sharply from 4.5% to 12.6% during 2014-2018 (World Bank, 2019). The World Bank (2014, p.19) commented that ‘the onset of resource revenues has enabled Mozambique to access financing from non-concessional sources, presenting both opportunities but also increasing debt levels and potential fiscal risks’. Just as very large and tangible investments in LNG projects were materialising, Mozambique’s credit ratings from 2016 onwards fell to Caa3 (Negative/Stable) by Moody’s and CC by Fitch, making it more difficult and expensive to access international loans.

When resource boom anticipation started in Madagascar from around 2003, the country was fortunate to benefit from debt relief from the Heavily Indebted Poor Countries (HIPC) Initiative and from the IMF during 2004-2006. As a result of debt relief, the external debt stocks decreased from ca. US\$ 4.6 billion in 2003 to US\$ 1.2 billion in 2006 (Fig.6). The ratio of debt service to exports decreased from 9.2% in 2002 to a manageable 1.7% in 2007 (IMF, 2009). However, fuelled by the anticipation of future extractive revenues, Madagascar’s debt soon increased disproportionately to government expenditure. By the time that the Ambatovy mine opened in 2014, Madagascar foreign debt stocks doubled to US\$ 2.4 billion (Fig.6). In contrast to Mozambique though, Madagascar still benefited from the earlier debt relief and the government did not engage in secret loans. Therefore, by the end of 2013, Madagascar’s total public debt was still relatively low by sub-Saharan African standards, at just under 35% of GDP (IMF, 2014). In other words, the impact of future anticipation on national debt was moderate.

In contrast to Mozambique and Madagascar, the national indebtedness of STP cannot be associated with future anticipation of extractive income. In the case of STP, the levels of indebtedness were already very high by the early 1990s when the country was highly reliant on overseas development aid (Frynas et al., 2003). STP’s total debt service (as percentage of exports of goods, services and primary income) stood at 34.8% in 1990, then fell to 25.8% in 2000, rose again to 37.2% at the height of resource boom anticipation in 2005 (World Bank, 2019), and then fell during 2007-2009 thanks to large-scale debt relief from the HIPC Initiative, MDRI, and the Paris Club. One can merely say that the beginning of resource boom anticipation in the early 2000s returned STP to high national debt levels seen in the early 1990s. Conversely, the end of resource boom anticipation in the 2010s actually helped to alleviate STP’s indebtedness. Once the future anticipation of a resource boom finally

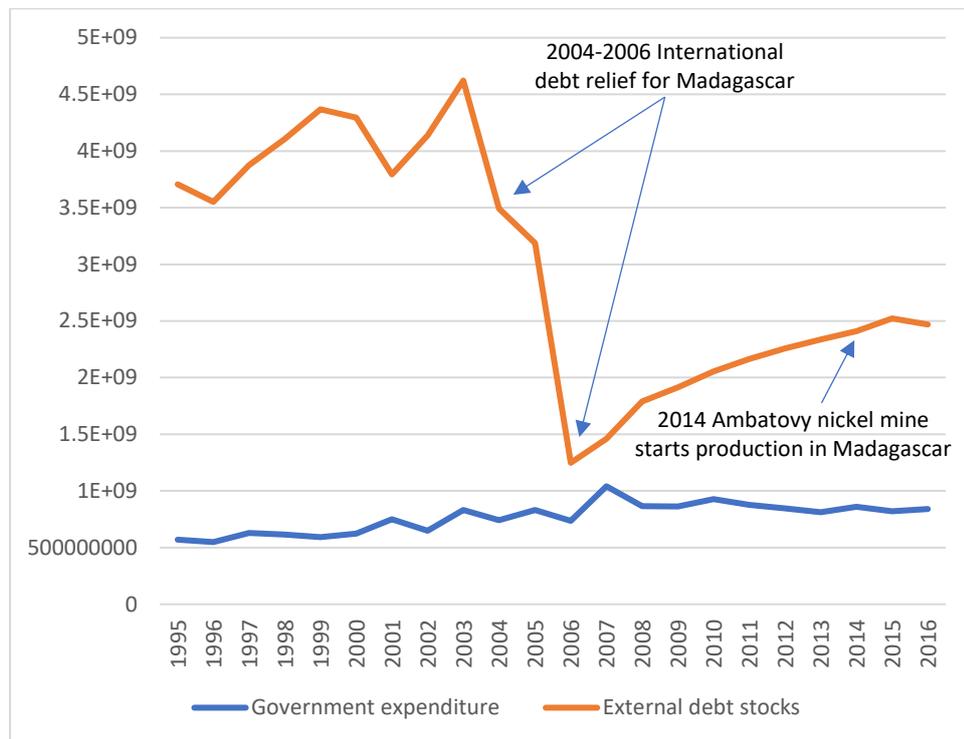
dissipated, the STP government realised that it had to reign in the state finances and actively engaged in a series of financial reforms related *inter alia* to tax administration and bank transparency. The 2014 staff country report by the IMF specifically commended the new STP government that came into office in December 2012 for ‘the pursuit of sound financial policies’ in the face of ‘more uncertain oil prospects’ (IMF, 2013, p.2). As the STP government no longer expected future resource wealth, STP’s total debt service fell from 13.4% in 2014 (when the last foreign oil firm withdrew from the country) to a manageable 2.9% in 2018 (World Bank, 2019).

Fig. 5. Government expenditure and foreign debt in Mozambique, 1995-2017.



Source: The World Bank, 2019

Fig. 6. Government expenditure and foreign debt in Madagascar, 1995-2016.



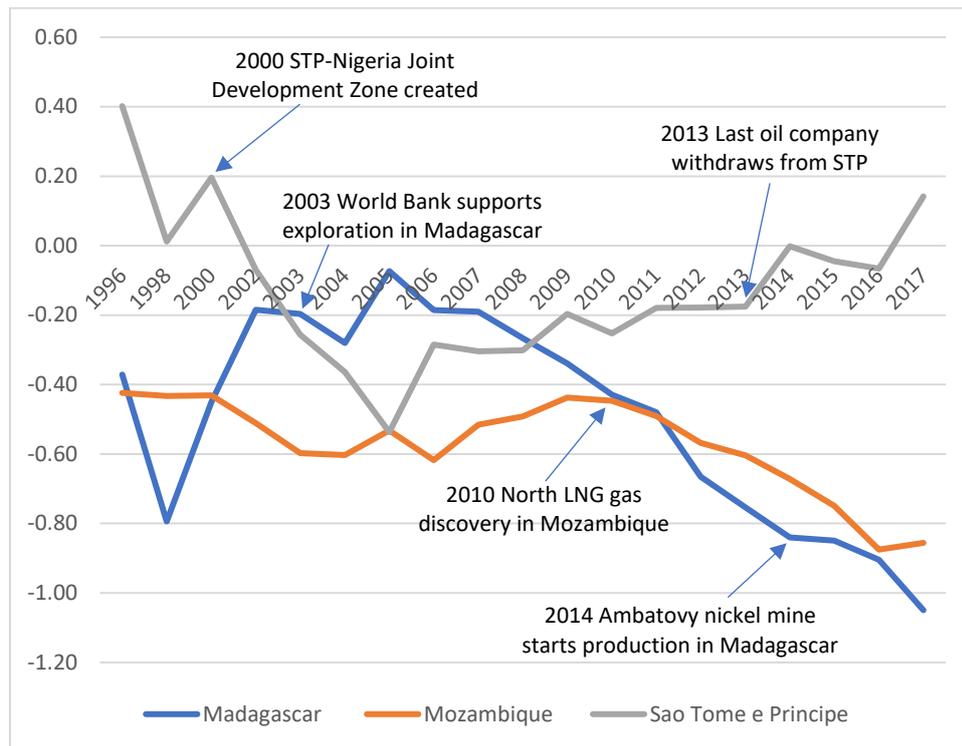
Source: The World Bank, 2019

6. Governance and corruption

Resource curse scholarship has provided strong cross-country evidence that resource wealth leads to a deterioration of institutions and governance (e.g. Brollo et al., 2013; Robinson et al., 2006). In particular, there is strong recurring empirical evidence for higher levels of corruption in resource-rich countries (e.g. Arezki and Brückner, 2011; Kolstad and Søreide, 2009; Leite and Weidmann, 2002).

We have specifically used the World Bank's 'control of corruption' index to investigate the impact of future resource boom anticipation in the three countries. The 'control of corruption' index combines different sources of data to capture perceptions of the extent to which public power is exercised for private gain, including both petty forms of corruption (e.g. frequency of household bribery in education) and grand forms of corruption (e.g. corruption among public officials), as well as "capture" of the state by elites and private interests. The scale ranges from -2.5 (weak control of corruption) to 2.5 (strong control). Fig. 7 demonstrates that resource boom anticipation in Mozambique, Madagascar and STP was consistently followed by increased corruption.

Fig. 7. Control of corruption index, 1996-2017.



Source: The World Bank, 2019

In the case of STP, there was a continuous increase in corruption from 2000 onwards, the year when Nigeria and STP signed a much hyped agreement on a joint oil development zone. The involvement of Nigerian business partners was mired in accusations of corruption. In 2001, the government negotiated an agreement with Nigeria's the Chrome consortium – a company linked to Nigeria's vice-president. The agreement was exceedingly favourable to the Nigerian company: it included the option to acquire a 15 percent share in two oil blocks in the Joint Development Zone and a 100 percent share in two oil blocks in the country's Exclusive Economic Zone without paying any signature bonus, which was contrary to the national interest of STP. During the subsequent licence bidding rounds, the Sao Tomean government was under intense pressure from Nigeria to grant licenses to young and inexperienced Nigerian firms, such as Momo Oil and Godsonic Oil and Gas, which had close ties to the Nigerian presidency (Frynas et al., 2003). There were also allegations of irregularities related to oil-related income. The government's most senior public servant declared years later that he could not find any record of any payments from the Joint Development Zone with Nigeria to the treasury in 2009, despite claims that such payments had been made (*Africa Confidential*, 15 April 2011).

Conversely, Fig. 7 demonstrates that corruption in STP consistently decreased after 2014. This can be explained on the basis of disappointing oil-related income (as mentioned earlier, the hopes for large signature bonuses in 2011 were dashed), as well as disappointing results of oil exploration efforts and the withdrawal of several large oil exploration companies (the last of which was in 2014). As hopes for an oil boom waned, the STP government was forced to face fiscal budget reality and to collaborate with the IMF on fiscal reform, in order to

obtain new external funding. In other words, the end of oil boom anticipation can be linked with decreased corruption.

In Madagascar, corruption continuously increased from around 2005 onwards, and this has been linked to irregularities in the mining licensing system. Until around 2005–6, the permit system was reportedly administered in a relatively transparent manner. By 2006, the World Bank (2010, p. 41) reported that incidents of ‘political interference in mining rights management, sometimes in open violation of existing regulations, have called into question the transparent governance of mining rights’. For instance, a gold mining exploration permit was handed by presidential decree to a company controlled by the military in 2006 in suspicious circumstances, while the terms of a previously transparent auction for iron ore permits were changed in 2008 and became highly opaque (World Bank, 2010). There were also irregularities in payments received by the government. Most notably, the government of Madagascar reported that it had obtained \$100 million from the Wuhan Iron and Steel Corporation (WISCO) in 2010 as a signature bonus, however, the Chinese firm later insisted that it actually paid \$140 million into government coffers (Africa-Asia Confidential, July 2012). In other words, resource boom anticipation can be linked with increased corruption.

In the case of Mozambique, there was a continuous increase in corruption since 2010, the year of the large gas discovery in in Cabo Delgado province. Even a Mozambican government report (Republic of Mozambique, 2019) admitted that corruption significantly increased during President Guebuza’s second term in office (October 2009-January 2015) and Filipe Nyusi’s presidency (from January 2015). In particular, there is tangible evidence on corruption related to the secret government loans that were taken from 2012 onwards. The discovery of the secret loans in 2016 led to revelations of corrupt practices thanks to an international audit conducted by Kroll Associates U.K. Limited as well as court cases in UK and US. The audit by Kroll revealed the enormous scale of corruption, impunity and mismanagement involved in the secret debt scheme. It demonstrated, among others, that the contractor for the loans – an entity owned by Franco-Lebanese billionaire Iskandar Safa called Privinvest – overcharged the state by at least US\$ 700-800 million out of the US\$ 2.3 billion that was unaccounted for, while the remaining assets were inflated and largely useless for the purposes intended (Kroll, 2017; *Africa Confidential*, 28 November 2016).

Later court cases in the UK and the US uncovered an intricate network of payments to former finance minister Manuel Chang, the son of former President Guebuza, Mussumbuluko, the former director of SISE Carlos Agostinho do Rosário and a host of others. The current President Nyusi was also signatory to the loans in his former capacity as Secretary of Defence. There were allegations that the secret loans formed part of an elaborate rent seeking scam based on anticipation of future resources that could not be accessed immediately. A Chatham House expert commented that ‘belief that over \$100 billion was being invested into gas prompted the country’s elites to seek to carve out their share’ (Vines 2016).

7. Armed conflict

Resource curse scholarship has provided robust results that resource income has strong anti-democratic effects (e.g. Ross, 2001; Jensen and Wantchekon, 2004) and often leads to armed internal conflicts (Collier and Hoeffler, 1998; Humphreys, 2005). On the one hand, the vision of obtaining control over resource revenues encourages rebel groups, potential coup leaders, and other violent forms of political opposition to seize power by violent means (Humphreys, 2005; Rodríguez, 2019). On the other hand, ruling elites are able to use extractive revenues to eliminate any existing and potential opposition groups (e.g. Igreja, 2015; Macuane et al., 2018).

The latter argument can explain the flaring off of armed conflict in Mozambique after 2013 due to Renamo mobilisation related to gas revenues, which resulted in many human casualties (Fig.8). Following a bloody civil war, Mozambique enjoyed two decades of peace following a peace agreement between the Frelimo-led government and the armed opposition group Renamo in 1992. This peace was dramatically disturbed when Mozambique returned to violence in 2013, and the timing coincided with resource boom anticipation. The discovery of gas transformed the Frelimo ruling elite's (organized around the former President Guebuza) relationship to Renamo. From 2004 onwards, President Guebuza turned the Frelimo party-state into a patrimonial political class that became increasingly determined to hang on to power at all costs (Macuane et al., 2018). The sheer quantity of future gas reserves that became known from 2010 and potential future revenues of billions of dollars had – in the words of a senior Chatham House expert – “heightened the stakes [...] dividing the Frelimo elite over who has access to the spoils and triggering Renamo's return to armed violence in 2013 to push for a new elite bargain with the government” (Vines 2019: 3-4).

After the discovery of natural gas in 2010, the party-state under Guebuza began purging individuals aligned with Renamo from the state and economic opportunities. This culminated in an intensified purge of former Renamo soldiers that had been integrated in the army and police force after 1992 as part of the peace accord and the UN operation in Mozambique (Igreja 2015). After 2010, former Renamo combatants were systematically deprived of their jobs and economic opportunities with the resulting claim that they were “victims of discrimination” (Vines 2019: 10; Igreja 2015). This also included the then Renamo leader Dhaklama's economic interests that included artisanal gem mining (Tourmaline) in central Mozambique that from 2012 came under pressure from government officials and “heightening the squeeze on his resources” (Vines 2019: 10).

The armed conflict in Mozambique was reportedly fuelled by the secret loans that the government took from 2013 onwards (Macuane et al., 2018). On the one hand, the loans were used to fund the 2014 elections, as part of paying for the political transition from Armando Guebuza to Filipe Nyusi as the country's president. On the other hand, the money was used to buy new military equipment and probably to fight Renamo, in a violent low intensity civil war during 2013-2016. When Renamo resumed the civil war in 2013, it was only after discussions concerning various political reforms but also following a demand for a more equitable wealth sharing deal in the light of the future revenues from LNG. The civil war formally ended when a Peace Agreement was signed by both Renamo and the Frelimo

government in August 2019 allowing for the 15 May 2019 general elections to take place. The peace agreement was based on Frelimo allowing for greater provincial autonomy (a key demand by Renamo) and up to 5000 Renamo troops being reintegrated in the military and policy in exchange for Renamo demobilisation.

There is little doubt that the expectations related to future extractive revenues translated into action oriented anticipation from Frelimo and social mobilisation from Renamo. The talk of future revenues by politicians, private companies, international donor community and the press encouraged the Guebuza government to eliminate Renamo as an opposition group once and for all. President Guebuza departed from the previous Frelimo strategy to slowly reduce Renamo's influence over the years and he was keen "to accelerate control over the territory in light of the prospect of opening up natural resource exploitation in former Renamo areas" (Macuane et al., 2018, p. 427). Likewise, the promises of future revenues also encouraged Afonso Dhlakama, the leader of Renamo, to act radically and not settle for small cash handouts through another elite bargain as had been accepted hitherto.

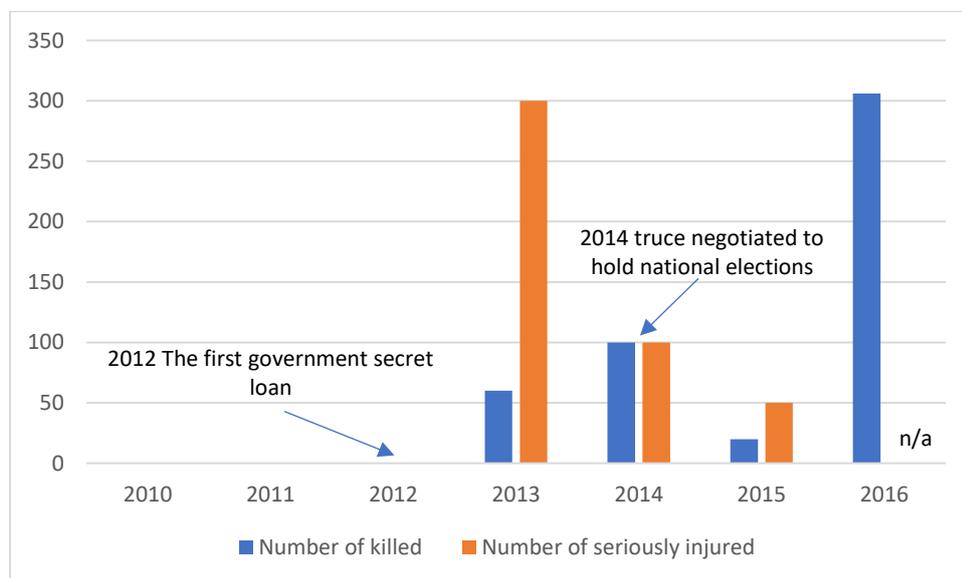
In the case of STP, the prospect of future revenues may be said to have fuelled a coup d'état to some extent. In contrast to Mozambique, political competition in STP has been extremely peaceful over the years, but the country experienced two military coups: in 1995 and in 2003. The 2003 coup has been linked to natural resource anticipation (Frynas et al., 2003), although the main causes for the coup were largely unrelated to oil. A group of former São Tomean soldiers complained about economic hardship as well as low pay and poor working conditions in the army. Nonetheless, while oil boom anticipation was possibly not the main driving force, the 2003 coup reflected, at least in part, a product of interest in potential oil revenues, the prospects of easy wealth, and the belief that a few senior politicians had bought luxury cars for their secretaries and children, whilst most remained poor (Frynas et al., 2003). Future oil boom anticipation also affected the timing of the coup. Seibert (2003, p. 260) argued that 'the rebels wanted to denounce the unequal distribution of the country's resources before the oil revenue arrived', and they were aware of the 'possibility that, after the arrival of the first petrodollars, the government would be able to buy off any potential opposition'.

Indeed, the leaders of the 2003 coup demanded that the military will benefit from the future oil revenues. One week after the coup, they stepped down in exchange for an amnesty and a written agreement with the government. The agreement stipulated, among others, that the army's supreme command will get access to detailed information about the oil and gas sector in the country. According to Seibert (2003, p. 257), 'this provision reflected both the military's concerns regarding the lack of transparency with regard to the oil sector and their intention to participate in the expected oil rush'. It was significant that 'political demands were either absent or remained rather vague' in the written agreement with the government, while the document, by and large, reflected the economic demands of the coup leaders (Seibert, 2003). In other words, future oil boom anticipation seemed to have significantly influenced the outcome of the coup.

In the case of Madagascar, we cannot say that political violence was driven by future resource boom anticipation, albeit a 2009 coup was potentially linked to natural resources (Frynas, 2003). In 2009, Malagasy soldiers seized key sites in the capital and ousted the

country's president, Marc Ravalomanana, replacing him with the mayor of Antananarivo, Andry Rajoelina. The coup was reportedly driven by a mutiny among dissatisfied soldiers and a longstanding conflict between Rajoelina and Ravalomanana (Randrianja, 2012). However, government policy decisions taken after 2009 indicate that resource boom anticipation incentivised the Malagassy coup leaders to launch the coup and subsequently to hang on to power. Shortly after the coup, the new government decided to shift the de facto authority to allocate natural resource licenses from the Office of the Mining Cadastre to the Minister of Mining as the executive branch of the government. In January 2010, the Ministry of Mines then passed a decree that doubled the level of mining administration fees, in violation of the country's mining code. Both policy decisions may suggest that the new government actively anticipated future extractive revenues (Frynas et al., 2003). However, in contrast to Mozambique and STP, we were unable to find any tangible evidence that the coup was driven by future resource boom anticipation.

Fig. 8. Casualties of the armed conflict in Mozambique, 2010-2016



Sources: compiled by authors based on HRW 2018; Vines 2018

8. Conclusions

This article investigated to what extent the anticipation of future extractive revenues leads to 'presource curse' effects, using empirical evidence from three African countries. We drew on insights from economic sociology to help explain the mechanisms by which future revenue anticipation can affect present-day economic and political calculations. We found that all three countries experienced negative effects as a result of anticipation of future extractive revenues, including economic growth volatility, higher levels of national debt, eroded governance and societal conflicts. This investigation serves as a window towards a better understanding of the wide range of effects of future resource anticipation on the economy, governance and conflict.

We found that the 'presource curse' effects varied significantly across the three countries. For example, the 'presource curse' effects related to national indebtedness were most severe in Mozambique, where the government took on secret loans from 2012 on the anticipation of future gas revenues. They were important but significantly less pronounced in Madagascar, which benefited from international debt relief around the start of the future resource boom anticipation. They were not as important in STP, which historically already had very high debt levels prior to the onset of resource boom expectations. Likewise, the 'presource curse' effects on internal conflict were by far most pronounced in Mozambique where the renewal of the armed conflict between Frelimo and Renamo can be linked to resource boom anticipation. These effects were much less pronounced in Madagascar and STP, which historically lacked an armed rebel group similar in scope and scale to Renamo. These variations echo the contingent nature of resource curse effects found in the extant literature.

Our case study evidence points towards a time lag between the onset of resource curse expectations and negative resource curse effects. In STP, resource expectations started from around 1997, but perceived corruption increased from around 2001 (Fig.7) and government expenditure only started to rise sharply from around 2003 (Fig.3). In Madagascar, resource expectations started around 2003, but perceived corruption increased from around 2006 (Fig.7) and national indebtedness linked to higher government expenditures increased from around 2007 (Fig.6). In Mozambique, expectations of the vast LNG project started in 2010, but the first secret government loan was taken in 2012 and the armed conflict re-surfaced in 2013 (Fig.8). This supports our theoretical perspective derived from economic sociology that there is a time lag between *expectations* of resource wealth turning into *anticipation* that involves behavioural changes with macro-level outcomes. We surmise that this time lag can be explained through social group mobilization as well as the credibility of resource stories and narratives, which puts the spotlight on the role of the different actors who influence the presource curse. Future studies should unravel the black box of how these actors influence the presource curse and the specific conditions that influence the anticipation-curse relationship.

Our study has limitations similar to case study research in general. First, our sample of cases is very small, and future studies may use a much larger sample. Second, our three case studies represent low-income African countries, and future studies could test the hypothesised anticipation-curse relationship in other settings, including in more developed countries where the quality of societal governance may reduce resource curse effects (cf. Alt and Lassen, 2006; Haslam, 2016). Third, our three case studies represent countries with some future resource anticipation; it is conceivable that similar curse effects may exist in settings without suspected resources (e.g. resource curse effects as a result of anticipated future overseas aid, cf. Younger, 1992; Djankov et al., 2008). Despite these limitations, this is the first study that investigates multiple aspects of the relationship between anticipation and presource curse effects across a selection of countries, whilst providing a theoretically grounded explanation of the underlying mediating mechanisms.

The results of our research are of major practical importance, given the phenomenal rise in oil, gas and metal ore exploration across Africa. There is ongoing oil and gas exploration in almost all African countries (see Fig.2 in Graham and Ovidia, 2019, in this journal), while

metal ore exploration has also markedly increased across Africa (Kotze, 2019). Positive expectations of the future benefits of resource wealth are very high both among policy makers and local populations (Vokes, 2012; Kiiza et al., 2011; Engwicht, 2018; Mawejje, 2019). Therefore, it is likely that many new countries with future resource potential will experience negative effects of a presource curse without natural resource extraction.

Policy makers at the World Bank and the IMF would seem to be well aware of the potential negative effects of the resource curse, given a stream of relevant World Bank and IMF policy papers. But they continue to support new African countries with financial and technical assistance for natural resource extraction, further contributing to resource boom anticipation in the process. The effects of these policies are particularly pernicious in countries that actively prepare for a resource boom but ultimately end up not producing any natural resources at all. For example, STP created many specialist institutions for the oil sector in anticipation of an oil boom, such as a Ministry of Natural Resources, the National Petroleum Agency and an Oversight Commission, which received considerable state funding and decision-maker attention. But, ultimately, no resources were found in STP. This example underlines the challenge of external policy interventions that are intended to alleviate future resource curse effects but only end up contributing to future resource hypes. We hope that our study will stimulate an intensified debate on the dangers and challenges of the presource curse.

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