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ABSTRACT

This paper applies the logic of economic calculation to the actions of autocrats. We model autocrats as stationary bandits who use profit-and-loss calculations to select institutions that maximize their extraction rents. We find in many cases autocrats achieve rent maximization through creating and protecting private property rights. This in turn yields high levels of production, with expropriation kept low enough to incentivize continued high production. Importantly, while this leads to increasing quantities of available goods and services over time, it does not lead to true development; that is, the coordination of consumer demand with producer supply through directing resources to their highest-valued uses. We apply our model to the authoritarian governments of Singapore and the United Arab Emirates, showing how they

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function as quasi-corporate governance organizations in the business of maximizing appropriable rents.

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JEL classifications: D73; O10; O40; P51

INTRODUCTION

In the midst of the "Socialist Calculation Debate," von Mises (1920/1990, 1922/1981, 1927/2005, 1949/1998) and von Hayek (1935a, 1935b, 1940, 1945, 1988) argued that rational economic calculation outside of the market process was impossible. The absence of private property rights cripples economic calculation. Issues surrounding the nature and acquisition of knowledge within the market further condemned the idea of central planning. The later collapse of the Soviet Union and failure of the socialist system would illustrate the merits of Mises and Hayek's arguments. Without private property rights, it was impossible for the price mechanism to function properly. Profit-and-loss signals were absent and, ultimately, the system failed. Since this time, other scholars in the Austrian tradition have further explored issues of economic calculation (see Lavoie, 1985a, 1985b; Vaughn, 1980).

Changes in the developing world raise new questions regarding economic calculation. Growth in autocratic polities like United Arab Emirates, and Singapore, for example, does not appear to follow the application of economic calculation in the archetypal fashion, that is, economic calculation by private actors, with non-calculating public actors limiting themselves to maintaining the institutional framework that promotes free exchange. Fairly characterized as autocratic, these regimes claim, and frequently make use of, the command over a significant portion of the industry and economy in their respective nations. Though counterintuitive, both countries have experienced impressive economic success. Singapore has grown at an incredible pace, with income per head growing from \$2,592.86 in 1963 to \$36,897.87 in 2013 (World Bank, 2013).[1] The UAE enjoyed similar rapid economic growth, culminating in income per head of \$29,900 (Forbes, 2014).

The purpose of this paper is to explain how autocratic regimes grow economically through the use of economic calculation. We develop an argument explaining how authoritarian polities can grow, and sometimes grow quite quickly, using Olson's (1993, 2000) framework of the stationary bandit. Specifically, we argue that the stationary bandit, as a residual claimant who treats governance as a revenue-generating enterprise, selects for institutions – namely private property rights – that provide the stationary bandit with a feedback mechanism in the form of profit. The stationary bandit will engage in economic calculation to adjust his behavior until marginal private benefits equal marginal private costs in governance. Relative to a hypothetical situation where political forces limit their activities to the protection of property rights and the maintenance of the rule of law, there will be some market inefficiencies under the stationary bandit due to the incentive-dampening effects of rent extraction. We contend that, despite the fact that resources are allocated based on private (as opposed to social) benefit maximization, authoritarian polities may experience high production as a consequence of the stationary bandit extracting ("governing") optimally. Our argument takes Olson's story a step further by analyzing the choice calculus of the stationary bandit in light of Austrian insights concerning economic calculation.

In the tripartite division of Austrian economics into pure theory, institutionally contingent theory, and economic history proposed by Boettke and Leeson (2006, p. 249), our contribution falls under the second category. Our contribution employs empirical assumptions concerning the choice calculus of the actors involved, rendering it separate from the pure logic of choice. But it also is intended as a framework to make social phenomena in applied work more intelligible, rather than as an exercise in applied work itself.

Our analysis contributes to several strands of literature. The first is the literature on economic calculation, particularly within the context of economic development, to be discussed in more detail in the following section. Boettke (1998) holds that economic calculation is the most important contribution made by economists in the Austrian tradition to political economy. To truly develop, societies must discover how to allocate resources in a wealth-generating, rather than merely product-generating, manner. Based on this definition, the revenue-maximizing stationary bandit is not presiding over a developing polity. But he may preside over a polity that increases production rapidly. By illustrating how the stationary bandit qua revenue-maximizing institutional selector makes use of economic calculation, our framework is able to explain the puzzle of authoritarian growth miracles.

The second strand of literature engages the debate as to whether efficiency criteria can be applied to institutional selection. Kirzner (e.g., 1987) and Buchanan (e.g., 1977) have both argued that questions of efficiency only make sense within a given set of institutions. As such, there is no way to judge whether the selection of a given institution is itself efficient (Boettke, 2014, pp. 241–243). In contrast, we suggest that efficiency criteria can apply to institutional choice. In particular, we argue, and provide examples, for the claim that autocrats have a financial incentive to select institutions that maximize their revenue. This means there is a coherent decision criteria, namely profit-and-loss calculations on the part of the autocrat, which applies to institutional selection, at least in the cases we consider here. Our work thus fits into the larger research project on institutional selection and change at the intersection of Austrian political economy, Virginia political economy, law and economics, and comparative institutional analysis (Boettke & Candela, 2014).

The third strand of literature considers political regimes and economic development (see Acemoglu & Robinson, 2005; North, Wallis, & Weingast, 2009). The general theme of these works is that the transition from elite-dominated political institutions, yielding outcomes that are privately beneficial to elites but socially costly more largely, to more open and inclusive political institutions lays the groundwork for economic development. This is the result of dispersed political power among many heterogeneous agents with separate interests. This in turn makes it more difficult for elites to govern in a manner that allows them to reap benefits at others' expense, thus paving the way for robust market institutions. Our analysis suggests reasons why minimal concessions on the part of elites, or no concessions at all, may still result in economic growth and development. The key mechanism, as will be discussed below, is the bundling of use rights with cash flow rights in the hands of the extractor-governors, which aligns incentives sufficiently well to achieve growth.

The fourth strand of literature is the subsection of public economics and public choice that focuses on the institutional factors that shape the incentives and knowledge facing private and public actors. While this literature is far too large to discuss in its entirety, recent work (e.g., Podemska-Mikluch & Wagner, 2013; Wagner, 2011, 2012) focused on the institutional underpinnings of public-sector exchange and its relation to the creation of governance commons is particularly relevant. In line with these works, our analysis suggests the relevant margin to explore governance issues is not that of public versus private, but current control versus capitalized control. In other words, are those in governance positions in possession of the current use value of the resources at their disposal, or are they in possession of the future value streams conferred by these resources as well? Western democratic governance institutions are structured such that the public sector becomes a commons – explaining the frequent association between the public sector and allocative inefficiencies. In our analysis, however, the "state" is best conceived as a quasi-corporate governance organization, with the gap between current control and capitalized control significantly narrowed, if not eliminated. Once this view is embraced, a range of institutional possibilities, predominantly authoritarian, that seems unsuitable for lasting progress become much more tenable.

The remainder of this paper is organized as follows: In section "Calculation and Economic Development," we briefly recap the literature on economic calculation and its manifestation in modern development studies. In section "The Stationary Bandit and Calculation," we explore the stationary bandit and his choice calculus in more detail, explaining how the bandit's governance problem involves calculation with profit-and-loss feedback. In section "Empirical Illustrations: Singapore and United Arab Emirates," we provide brief illustrations of the theory by examining the relevant aspects of two authoritarian development miracles, Singapore, and the United Arab Emirates. In section "Conclusion," we conclude by discussing the implications of our theory.

CALCULATION AND ECONOMIC DEVELOPMENT

As Boettke (1998) points out, economic calculation is perhaps the single most important contribution of the Austrian traditional to political economy. The problem of economic calculation, simply stated, is the question of how to best allocate scare resources to their highest-valued use (see von Mises, 1922/1981, 1927/2005, 1944/1983, 1949/1998). Mises, used his exposition of economic calculation to explain the impossibility of economic calculation under socialism and the unavoidable failure of a centrally planned economy. Boettke (2001, p. 31) provides a concise summary of Mises' argument: "Without private property in the means of production, there will be no market ….Without a market … there will be no monetary prices …. Without monetary prices reflecting the relative scarcity of capital goods, economic decision-makers will be unable to rationally calculate the alternative use of capital goods." If follows from this argument that the market process, with its system of monetary prices reflecting the scarcity of resources, and the signals of profit and loss foster endogenous discovery and correct errors. This process ultimately drives resources to their highest-valued use.

In addition to the issue of calculation raised by Mises, von Hayek (1935a, 1935b, 1940, 1945, 1988) further expanded upon the theory of economic calculation, arguing the process of market competition is a discovery process in which persons possess specific knowledge of "time and place" (1945, p. 80, 1968/2002). Hayek's unique contribution is the insight that the interaction of a variety of individuals, each maintaining their own purposes and plans, is what allows for ultimate coordination of the larger economic apparatus. It follows from this directly that no central planner could ever acquire the needed information to properly engage in rational economic calculation. The central planner, unlike the market, lacks a comparable mechanism to the dispersed knowledge and discovery process of the marketplace.

Although Mises and Hayek's critique of rational economic calculation outside the market process was intended to demonstrate the perils of socialism, it has significant implications for economic development. In particular, the issue of economic calculation has been used to discuss the failure of attempts by government to induce economic development. A variety of scholars have addressed the failure of development aid and planning in producing the desired economic outcomes (see Bovard, 1986; Easterly, 2001; Easterly & Levine, 2001; Ovaska, 2003). Within this work on economic development, several scholars have worked to demonstrate how centrally planned development fails for the reasons laid out by Mises and Hayek. For example, Hall (2014) and Mathers (2012) highlight how issues of incentives and economic calculation inhibit the efforts of government to spawn economic development in poorer groups even within nations that are highly developed. Williamson (2009), provides a broader discussion of the failure of governments to engage in economic development, including problems of economic calculation. Most recently, Coyne (2013), demonstrates how efforts to plan development via humanitarian and foreign aid have failed both within wealthy countries, like the United States, and developing nations, like Haiti. Again, issues of economic calculation are brought to the forefront. Governments, looking to provide relief to a location following a natural disaster, or hoping to enhance a nation's economic prospects through aid and other programs, are unable to successfully execute their goals due to a variety of issues, but in large part because of an inability to engage in rational economic calculation.

One implication of this literature is that we would not expect to view enhanced growth in countries in which the central government controls, or reserves the right to control, the nation's key resources. Even taking into account their rulers' use of economic calculation by treating their polities as revenue-generating private property, there is still a puzzle. Responding to Stringham (2006), Leeson (2007) rightly points out that private territorial monopolists, as stationary bandits, still face the temptation to negotiate low governance prices, wait for their residents to produce wealth, and then expropriate them after the fact. Leeson's logic is sound but, as a theoretical work, it does not shed empirical detail on what living conditions in private monopolists' territories would look like. Here we present a case of stationary bandits "getting it right:" behaving in the manner Leeson (2007) describes, but still creating a sufficiently stable environment for the mass production of goods and services.[2]

THE STATIONARY BANDIT AND CALCULATION

Olson (1993) provides a cogent and brief description of the choice calculus of the stationary bandit.[3] A stationary bandit is an individual or body of individuals that monopolizes rent extraction by coercion over a given geographic territory. In contrast, stationary bandits frequently change their geographic locations, extracting rents as they move from territory to territory. From the perspective of those being expropriated, the stationary bandit is preferred to roving bandits. Since roving bandits plunder at irregular intervals and, moving from plunder source to plunder source, they have little incentive to increase the capitalized value of the wealth of the places they loot. The territory's residents rationally respond by producing less wealth in the wake of the roving bandit's unpredictable extractive patterns. In contrast, the stationary bandit has better incentives. Since he sets himself up as a dictator and presides over a geographic territory, he does care about the capitalized value of his territory's wealth. By monopolizing coercion at somewhat regular and predictable interviews via taxation, he provides the people over which he rules better incentivizes to engage in wealth-creating activities. The stationary bandit will even provide some club and public goods, to the extent that the marginal benefit in increased revenue to him exceeds the marginal cost of doing so.

Instead of going deeper into the choice calculus of the stationary bandit, and considering the possibility of feedback via rule-for-profit, Olson moves on and argues that democratic institutions are better still. Politicians accountable to an electorate will make decisions even more conducive to wealth creation, since politicians who fail to offer wealth-enhancing platforms, he suggests, will be voted out of office. However, Olson does not seem to realize the possible problems associated with democracy, in particular large-scale democracy, which essentially arise from the creation of commons problems in the provision of governance. We do not disagree with the insight that, by diffusing political power among agents with more heterogeneous interests than the stationary bandit (or, what prevails in many authoritarian polities today, the ruling elite), conditions favoring wealth creation over wealth redistribution at the margin can be achieved. We do object to the implicit "more democratization, more development" narrative, especially in light of the massive literature that fails to find any significant causal effect of the former on the latter.[4]

We pick up where Olson left off and consider not just the choice calculus of the stationary bandit, but his choice calculus in the context of Austrian insights concerning economic calculation. We assume the stationary bandit is either a dictator or a group of elites with sufficiently well-aligned interests that a unitary choice calculus accurately captures the tradeoffs they face.[5] In order to engage in optimal extraction, the stationary bandit creates and enforces rights to private property in his territory. This creates the framework for a market economy, which in turn allows for a functioning price mechanism, which the stationary bandit uses to calculate his optimal extraction plans.

Under these conditions, the stationary bandit has a clear means-ends problem. He desires to maximize governance revenues over a well-defined time horizon, conditional upon remaining in power,that is, maintaining his governance monopoly. He is not a central planner – he does not try to direct all of his polity's resources – but instead engages in a combination of taxation and subsidization to promote specific goals, along with the employment of his own capital, in a way he judges most effective. More importantly, his intake of revenues per time period is a well-defined metric that provides him with a measure of feedback. By comparing governance revenues (taxation plus returns on personal capital) with governance costs (maintaining the extractive and administrative bureaucracy, as well as personally owned revenue-generating enterprises) over time, he will arrive at some idea of how to adjust his activities over time such that net revenues continue to be maximized. In other words, the stationary bandit is capable of engaging in economic calculation in the provision of governance, where "governance" means the activities necessary to maintain the coercive monopoly. This obviously entails the maintenance of a high level of social order, or at least sufficiently high to encourage the populace to engage in an amount of wealth creation sufficiently large to comprise the optimal (efficient extraction level) tax base.

Our analysis yields a concrete prediction: The more explicitly firm-like an authoritarian polity is, the more likely it will be to experience high production. This follows directly from considering the stationary bandit's problem from the standpoint of economic calculation. The "state" in this instance is really a quasi-corporate governance provider, with the various bureaucracies analogous to the security, information technology, and administrative departments of a business enterprise. The more *formal* are the underlying property rights arrangements on the part of the stationary bandit,that is, the stronger his degree of residual claimancy, the more likely this relationship is to hold.

In the following section, we use case studies to show our framework's explanatory power. We explore two cases: Singapore and the United Arab Emirates. We focus on these nations for three reasons. First, both countries have experienced rapid economic growth and are projected to continue their strong economic performance. Second, Singapore and the UAE both operate under a sort of autocratic regime. Third, and importantly, the historical and empirical data for these countries is immensely more reliable than data on other autocratic regimes. This allows us to examine these nations in depth, without requiring additional assumptions regarding the reliability of data.

EMPIRICAL ILLUSTRATIONS: SINGAPORE AND UNITED ARAB EMIRATES

Singapore

Singapore is a sovereign city-state located on the southern tip of the Malay Peninsula. It was founded in the early 19th century as an outpost for the East India Company. The British used it as a "distribution center" for goods and services, which was key in promoting "imperial interests in the region" (Siddiqui, 2010, p. 3). British interests at the time favored free trade, and hence the "unhindered international trade and investment" (Siddiqui, 2010, p. 3; see also Formal & Wojtera, 2013, pp. 8–11, 21–24).[6] In 1963 Singapore gained its independence from the United Kingdom briefly joined with other formerly-British territories to create Malaysia. However, it was expelled from the nation two years later by Malaysia's parliament.

Since then Singapore has grown incredibly rapidly, with income per capita growing from US$428 in 1963 to US$52,052 in 2012. In each 5-year interval dating back to 1980, Singapore has never fallen below 4th in the

Fraser Institute's ordinal ranking of countries by economic freedom.[7] In terms of governance, Singapore is nominally a democracy, but de facto the system is dominated by the People's Action Party (PAP), which has maintained an absolute majority for its entire tenure since 1965.[8] The PAP can be regarded as the "firm" that governs Singapore, with those who operate within it as its laborers. High-ranking ministers are akin to executives; deputy- and assistant-level civil servants can be thought of as middle managers; and clerks. The significant salary paid to high-level ministers in the PAP government, to be discussed further below, is one piece of evidence supporting this; another is the practice of paying civil servants bonuses based on the rate of economic growth (World Bank, 2013). Thus laborers have their incentives aligned with promoting wealth generation in the polity, which then yields these laborers material benefits.[9]

The prevailing model used to explain Singapore's success is the "developmental state" model. In the nation's early years, the state took an active lead in promoting growth and development. Singapore's success with state-owned business enterprises, especially Temasek Holdings, Ltd. – which for many years accounted for approximately 10 percent of Singapore's output – has led researchers to focus on the "partnership between its economic bureaucracy and transnational corporations, rather than on its own private sector or domestic capital developing in competition with foreign corporations" (Haque, 2004, p. 229). This public–private partnership narrative is stressed in studies that analyze the high quality of corporate governance in Singapore (Low, 2001) and studies that locate the state's legitimacy in the high quality of the services it delivers (Conteh, 2010). In addition, Singapore's economy has transformed from one reliant on exports to one with significant domestic financial and industrial sectors, with increasing reliance on private-sector mechanisms for resource allocation over time (Conteh, 2010, p. 49; see also Low, 2006, pp. 54–60).

The most systematic work analyzing Singapore using the "development state" model is Low (2006).[10] In her foundational chapter on good governance, Low shows she is familiar with the literature on New Institutional Economics and Virginia Political Economy, engaging ideas from the work of Williamson, Olson, North, and Buchanan. However, her narrative places the explanatory power not on the firm, but the guiding hand of the state, in partnership with the private sector. This partnership, she posits, achieves good governance, and hence, the common good:

> In reality, both the market and the public are imperfect economic arbiters, particularly in developing countries. Sound policy should therefore anticipate and correct their

> weaknesses and encourage their cooperation. The government, like the market, can be improved by better information … Thus, a new approach to development focuses on the institutions of both the market and the state. (Low, 2006, p. 44)

We agree with the last sentence of the preceding quote, but object to the context in which it is made. The guiding hand of the developmental state, as a model to explain authoritarian development miracles, has two key weaknesses. The first is that it takes the standard technician approach to the improvement and cultivation of society, assuming at a minimum that enlightened policy-makers have the knowledge necessary to correct market failures and other social problems. The second is its implicit rejection of behavioral symmetry without providing a convincing institutional filter for why wise, technocratic governance in the interest of the common good should prevail in the state bureaucracy. Our preferred explanation, that "Singapore, Inc.," as a quasi-corporate stationary bandit with access to profit-and-loss feedback, explains the same set of facts that Low presents while being more consistent with the underlying assumptions of rational choice theory.

Consider Singapore's taxation policies. Interestingly, Low (2006, p. 119, emphasis added) characterizes these policies in a way that sounds quite commensurate with our framework: "… the substitutability between the two [types of revenue, tax-derived and nontax-derived] reflects the business, capitalistic, or entrepreneurial tendencies *of the state*." The percentage of Singapore's operating expenditures derived from taxation has risen from 72 to 84.1 in 2003. Fees and charges have fallen from 17.4 to 14.6 percent, while all other sources have fallen from 10.6 percent to a mere 1.3 percent (Low, 2006, p. 121). This is consistent with the government of Singapore's gradual (but by no means complete) increasing reliance on market mechanisms, rather than actively intervening in day-to-day economic affairs (Conteh, 2010). However, even while nontax revenue sources are declining, Singapore's government still maintains an active presence in land distribution and holdings. The government is "the largest landowner in Singapore and turned *rentier* gains into budget surpluses for latter-day policies" (Low, 2006, p. 122). The Land Acquisition Ordinance of 1955 and its amendment in 1966 were the chief policies that laid the groundwork for the *rentier*-subdivision of the Singaporean government, allowing it to acquire land from private holders, Low (2006, p. 122) suggests, in a manner significantly less equitable than under Western-style eminent domain clauses. Low (2006, p. 123) makes it clear that the use of land under these acquisition laws is used merely for public housing projects or public infrastructure development. The government's land policy "constitutes a source of financial resources and socio-political control" (Low, 2006, p. 123).

In addition, digging deeper into Singapore's tax policies suggests the government is concerned not just with current revenue, but revenue streams over a time horizon, achieved by incentivizing growth through capital investments. Singapore's 2004 corporate tax rate was 22 percent, lower than any of the countries considered by Low except Hong Kong, Ireland, and Switzerland (Low, 2006, p. 135). In addition, it began a scheme to reduce its top marginal tax rates on personal income in 2007, from 22 to 20 percent, yielding "one of the most competitive personal tax regimes in the world" (Low, 2006, pp. 134−135). In addition, the government is attempting to broaden the tax base by increasingly relying on goods and services taxes (GST). Implemented in 1994, these yielded in 2003 13.1 percent of total tax revenue (Low, 2006, p. 130). This behavior fits with our knowledge of the choice calculus of a rational actor in possession of an asset with both use and capitalized value.

On the expenditure side, the lion's share of government operating revenues goes to security (48.1 percent of government operating expenditure in 2003) and social/community spending (42.6 percent of government operating expenditure in 2003). The economic sector and general services follow at 5.2 and 4.1 percent, respectively, yielding a government operating revenue equal to 11.7 percent of GDP (Low, 2006, p. 97). The government is also significantly involved in capital and development expenditures.

The Development Fund, which is a part of the overall Consolidated Revenue Account in the control of the government, is the source of these expenditures. Interestingly, the government has not needed to borrow money to finance its development expenditure since 1988, as reinvested budget surpluses have been sufficient to fund these expenditures out of capital appreciation (Low, 2006, pp. 100−102). The size of this capital fund in 2003 was more than seven times 2003 annual operating revenue. The composition of this spending has shifted markedly over time. In 1974, 46 percent of development expenditure went into the direct provision of economic services. This figure was down to 27.6 percent in 2003. In its place has risen social/community spending, rising from 33.2 to 52.7 percent over this same time period. Low (2006, Chapter 2) characterizes this pattern of expenditure in traditional public good/market failure terms. Because of "uninternalized" costs and benefits of various activities, the public sector must step in and "guide" markets to Pareto optimality. However, this narrative is suspect due to familiar knowledge and incentive problems. Although the "development state" model technically does explain the observed facts, the assumptions that underlie it suggest it is of extremely limited use. Viewing Singapore's activities as those of a stationary bandit maximizing profits over a long time horizon explains the same set of facts without eschewing behavioral symmetry.

Consider also Singapore's policy toward ministerial salary. The government "institutionalized the linkage between public and private sector pay" by basing public sector pay on a formula that automatically changes whenever wage conditions in the private sector change (Low, 2006, pp. 356–357). High public sector pay is crucial in attracting talented government employees, as well as lowering the benefits to shirking (lack of effort, corruption, etc.) at the margin.[11] As an example, in 1996 the salary for the U.S. president was $200,000. In comparison, Singapore's chief executive was paid $812,858. Senior civil servants averaged $118,118 in the United States, as compared to $292,714 in Singapore. Intriguingly, *legislators* in the United States made on average $133,600 but only $65,174 in Singapore (Low, 2006, p. 359, all figures in U.S. dollars). This strongly suggests Singapore's model is more oriented toward execution of a given governance strategy, which makes the most sense when one views Singapore as closer to a firm than traditional government on the ideal-typical spectrum.

In summary, both the traditional "development state" model and our proposed stationary bandit model can explain the observations in Singapore's governance and economic performance. The strength of the quasi-corporate governance framework is that its behavior is rendered intelligible in terms of economic feedback via profit-and-loss calculations. This explanation does not require an excessive degree of "public-spiritedness" on the part of civil servants, on which the development state model implicitly relies. Our framework also incorporates insights from Virginia Political Economy, New Institutional Economics, and Property Rights Economics. The development state model is also at odds with many of the lessons conveyed by these research programs. As such, we believe our model to be superior.

United Arab Emirates

The United Arab Emirates (UAE) is a confederacy of seven emirates (principalities). The UAE was founded in 1971 with the formal termination of British rule. The confederacy is comprised of member-states that are absolute monarchies, with the emirs of each individual emirate retaining significant power over their own territories. The wealth of the UAE's member-states is initially directly traceable to their vast oil holdings. Many have dismissed the UAE's rapid growth and economic transformation as the predictable consequence of "rentierism." However, economists and political scientists are aware that many nations rich in natural resources have remained quite poor (e.g., Sachs & Warner, 1995, 1997).

Dubai, one of the member-states of the UAE, has managed to diversify its economy away from oil. Tourism, real estate, and financial services now comprise a significant portion of its economy. Dubai's success, and that of the UAE more generally, requires an explanation beyond rentierism. We contend the member-states of the UAE, like Singapore, fit the quasi-corporate governance model, headed by a calculating stationary bandit. We will make our argument by offering a different interpretation of the existing political science literature concerning Gulf monarchies. We will pay special attention to the differential outcomes experienced by Dubai and Kuwait, another Gulf monarchy.

Although the UAE is a confederacy, its individual emirates retain almost complete autonomy in regards to the governance of their own territories. As such, to understand the governance of the UAE requires an understanding of the quasi-absolute monarchies that comprise it. This structure, a seeming anachronism amidst a world of increasing democratization, is explained in political science as the theory of "dynastic monarchism" (Davidson, 2005, Chapter 2; Herb, 1999, Chapter 2). This institutional arrangement arose due to the historical circumstances that characterized legitimacy and rule in individual shaikhdoms and emirates on the eve of the realization of oil wealth. Territories were traditionally ruled within a single family, but the eldest male descendent was not always the successor to the then-ruler. Succession was a matter of within-family power and support, with many family members having "the resources to credibly threaten to usurp power" (Herb, 1999, p. 22). In addition, these territories were highly segmented. In the language of modern development economics, state capacity was quite weak. The nominal territory claimed by a ruler frequently had to be governed directly, rather than from the ruler's seat of power, necessitating the delegation of this authority to a fellow noble-relative. However, such instances frequently provided these relatives with the authority and resources necessary to mount a successful challenge for the throne.

The rise of oil's value radically changed this dynamic. The growth of the "petro-state" enabled the vestment of oil rents, and hence the resources necessary to maintain an extensive governance apparatus, with the royal family, rather than the reigning monarch (Herb, 1999, p. 30). This is because oil rents changed the nature of the choice calculus for (male) members of the ruling family. The monopolization of oil rents by the family created incentives for each individual aspirant to act in a manner that advanced the family's interests, since this increased his ability to participate in the dispersal of oil rents, in addition to the possibility of securing valuable positions in high state office. In 1970, for example, the ruling family's share of oil rents in Abu Dhabi, one of the most powerful emirates, was 25.7 percent. For Libya and Kuwait, which also had monarchies at the time but failed for various reasons to establish the kind of dynastic monarchy that characterizes the UAE and other Gulf states, the figure is 0.8 and 2.6 percent, respectively (Herb, 1999, p. 31).

Of course, jockeying for power did not disappear, and coalition-building within the families still played an important part in the determination of succession. However, the incentives to push these opposed interests to the point of mutually destructive conflict reduced substantially, due to the presence of higher-valued alternatives. Succession is still determined by bargaining,[12] but in return for acquiescence to the more powerful faction at the moment of succession, rivals are rewarded with "consolation prizes" such as cabinet positions. Family members who are unsuccessful in succession aspirations can and frequently remain influential ministers of state, with significant amounts of wealth and power in their own right.

In our model, the UAE is best characterized as a family-owned business, or rather a coalition of family-owned businesses that pool resources on certain mutual concerns, such as national defense. Various state offices can be viewed as analogous to departments within large corporations. If anything, the royal families' property rights to governance rents, and especially oil rents, are even more explicit than governance rents accruing to ministers in Singapore. The dispersal of these rents take the form of high levels of personal consumption for the individual royal family members and reinvestments in the domestic economy expected to yield future revenues. The illustration of corporate-like control is best exemplified not by an in-depth examination of any one of the constituent emirates, but by comparing the political and economic experiences of Kuwait, which is a sovereign nation, with the UAE.

Whereas Dubai's economic progression is quite well-known, Kuwait has stagnated. In particular, Kuwait has become a difficult place to engage in economic activity due to its dysfunctional political sector. Business development is much more difficult in Kuwait, with one businessman commenting that, "[W]hat takes one year to accomplish in Dubai takes 10 years in Kuwait" (Herb, 2009, p. 381). This is exemplified by the radical divergence in their foreign direct investment. In 1980, Kuwait's merchandise exports were 86 percent of the UAE's; by 2006, this figure had fallen to 5 percent. In 2005, the UAE had 6.5 times as many airport passengers, and 14 times the freight container traffic at its ports, as Kuwait (Herb, 2009, p. 377).

A significant explanation for this divergence lies in the differing political structures of the countries. Due to differing experiences with British colonization, Kuwait has a tradition of "liberal democracy," with a mostly modern parliament, and a constrained monarchy. In our model, this amounts to the creation of a commons problem in the provision of governance. The emirates that comprise the UAE, however, have retained almost absolute control over their territories. This, along with the accompanying residual claimancy, allows the rulers to avoid the rent-seeking dynamic that pervades Kuwait, due to the stationary bandit's optimal choice calculus. "In the UAE, in the absence of a parliament, political power resides primarily in the hands of those who have an interest in private-sector growth" (Herb, 2009, p. 384). In other words, the state in Kuwait is a commons. In the UAE, the state is a confederacy of privately owned territories. This explains why the member-states of the UAE have been more successful diversifying their economies away from oil, with Dubai taking the lead. Herb (2009, p. 385) analogizes the emirates as corporations whose largest shareholders are the ruling family members; our analysis suggests this is more than just analogy, but a powerful framework for understanding how "illiberal" governance institutions can meet the economic challenges associated with growth.

CONCLUSION

This work has several implications. First, it explains how countries which are highly autocratic may nonetheless experience advanced material production. These government officials, as revenue-maximizing stationary bandits, are solving an altogether different problem than one of the "top-down social planner." In particular, they are acting to maximize their own welfare according to their own choice calculus. Given the unity of plans prevailing among the governor-bandits and the peculiar property rights arrangements that exist in these situations, high levels of production follows as a consequence. But it should be stressed that this is a fundamentally different phenomenon than central direction of resources to their highest-valued uses – it is the maximization of private revenues, not public wealth, and hence is not true development.

Second, our explanation of a stationary bandit engaging in economic calculation for his own ends, with mass production occurring as a consequence, is a better explanation for the behaviors of authoritarian development miracles than currently exist. For Singapore, the state-lead development model, while it can explain the same set of observations, relies on initial assumptions at variance with the foundations of economics. The model of dynastic monarchy explains the Gulf monarchies, and the UAE in particular, better, but falls short of a full explanation for how the ruling families use their position to employ resources profitably. Our ideal-typical conception of a privately owned state allows us to focus on the important issue of ownership and control in the context of property rights.

We offer several caveats and avenues for future research. First, it is important to note that this analysis is not a complete explanation of these territories' experience. A complete accounting would require a substantial exploration of the institutional structures in which these "firms" operate on a daily basis. In addition, while our theory explains the persistence of state-firms run by stationary bandits, it does not speak to their emergence in the first place. Second, and related, while we find our analysis betters explain the development of nations like Singapore and the UAE than alternative hypotheses, it is unclear how many nations currently fit into this particular modification of Olson's stationary bandit model. As such, it would be incorrect to this work as advocating autocratic governance as a means to development. To suggest autocracy in the form of a governance firm as a means to obtain economic development would, indeed, mistake the production of goods with the production of wealth, and run afoul of the likelihood that such a governance firm is not in a particular nation's set of feasible institutions. The cases above have occurred within particular formal and informal institutional contexts. Attempts to engineer institutions, such as to create a "state of stationary bandits," would be subject to their own knowledge and incentive problems (e.g., Boettke, 1994), and would suffer the same fate as past attempts to impose development from on high.

NOTES

1. Constant US dollars, base year 2000.
2. Of course, this is due to the nature of their choice calculus, rather than beneficence. An example of a stationary bandit where the revenue-maximizing calculus leads to less rosy circumstances may be North Korea.
3. See also Olson (2000) and Oppenheimer (1926).

4. Doucouliagos and Ulubaşoğlu (2008) provide a "meta-analysis" of this enormous literature and agree that thus far no direct causal effect between democracy and economic growth is evident.

5. For simplicity, we will continue to refer to the stationary bandit in the singular throughout.

6. Singapore's experience with an imperial-authoritarian regime combined with liberal economic policies is a decisive factor in the legitimacy and functioning of a similar, albeit no longer colonial, regime today. Interestingly, this seems to provide support for Acemoglu, Johnson, and Robinson's (2001) thesis on the importance of colonial origins.

7. Data current as of 2011.

8. In fact, the PAP on average holds between 92 and 97 percent of the parliamentary seats (Haque, 2004, p. 228).

9. A complete study of the PAP as a firm would require detailing the emergence of the institution as a quasi-sovereign governance corporation. Here we limit ourselves to specifying some features of Singaporean governance that makes it firm-like. For more historical detail, see Low (2001, 2006) and the citations therein.

10. This is a revised and updated version of Low's *Political Economy of a City-State: Government-Made Singapore*, published in 1998.

11. The persecution of corruption, dating back to the creation of the Corrupt Practices Investigation Bureau (CPIB) under the British, is stringent (Quah, 1989, 1995). Importantly, holders of high office are not above the CPIB's authority. As just one example, in 1986, Te Cheang Wan, then-Minister for National Development, was investigated for accepting bribes totaling $1 million for arranging the purchase of state land by private corporations outside of the established channels. He committed suicide rather than facing trial.

12. In these monarchies, the crown prince frequently appoints his successor, but this choice is almost always the codification of a previous within-family bargaining process.

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