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UNDERSTANDING DEMOCRATIC TRANSITIONS IN THE ARAB WORLD

Ibrahim Elbadawi and Samir Makdisi

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Send correspondence to:
Ibrahim Elbadawi
Economic Research Forum, Cairo,
And, Center for Global Development,
Washington DC, USA
iaelbadawi@gmail.com

Samir Makdisi
The American University of Beirut
makdisi@aub.edu.lb

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Egypt
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Abstract

The recent Arab uprisings have forced a new trajectory of transitions to democracy from the long-reigning autocracies that have dominated this region. This paper analyzes the factors that underlie this transition, where we code 'democratic transitions' as a multi-year phenomenon. We find that rents from oil and other minerals are hindrance to democracy when managed by less than fully democratic regimes and that their corrosive influence is subject to threshold effects. Our results also suggest that home wars impede democratic transitions. Finally, we tested for four causative mechanisms that might explain how or when resource rents can constitute a drag on democratization, and that are also of high relevance to the Arab world. We show that resource rents are effective deterrents when they are deployed to create jobs or when the resource endowed country is located in a non-democratic or conflicting region. On the other hand, compared to resource transfers, political repression does not seem to be the first best option, especially for highly resource endowed countries.

JEL Classification: P1, P2, F5

Keywords: Democratic transitions, oil rents, Arab world, Arab spring, wars

ملخص

الانتفاضات العربية الأخيرة أجبرت على مسار جديد من التحولات من الأنظمة الاستبدادية، حاملة لقب الأنظمة الطويلة التي هيمنت على هذه المنطقة، إلى الديمقراطية. تقدم هذه الورقة تحليلا للعوامل التي تكمن وراء هذا التحول، حيث نرمز "بالتحولات الديمقراطية" كظاهرة متعددة السنوات. نجد أن العوائد من النفط والمعادن الأخرى هي عائق للديمقراطية خاصة عندما تدار من قبل أنظمة أقل ديمقراطية وأن نفوذها يتآكل. تشير نتائجنا أيضا الى أن الحروب الرئيسية تعوق التحولات الديمقراطية. وأخيرا، فإننا نقوم باختبار أربع آليات للكشف عن المسببات التي قد تفسر كيفية والتوقيت الذى يمكن أن يشكل فيه ريع الموارد عبئا على الديمقراطية. وتبين لنا أن ريع الموارد هو رادع فعال عندما يستخدم فى نشر فرص العمل أو عندما تقع البلد وافرة الموارد في منطقة غير ديمقراطية أو متصارعة. من ناحية أخرى، بالمقارنة مع تحويلات الموارد، لا يبدو أن القمع السياسي هو الخيار الأفضل، خاصة بالنسبة للبلدان وافرة الموارد.

1. Introduction

The 'Arab Spring' is a late awakening. Save for some short-lived and disconnected democratic spells in the two poor and politically unstable countries of Sudan and Mauritania, this region remained unaffected by the successive democratic waves that transformed other developing regions despite its notable socio-economic development in the past five decades[1]. Nonetheless, the current Arab uprisings have spawned the region into a major democratic wave that has already transformed Tunisia, Egypt, Libya and Yemen as well as Syria, which provides the most compelling example of how things have changed at the heart of the Arab world[2]. While their ultimate outcome remains uncertain, the door is now ajar for the Arab region to move forward along the democratic path albeit with varying speed and intensity from one country to another[3].

The recent Arab awakening, therefore, suggests the high academic and policy relevance of research for better understanding the dynamics of transition from autocracy to sustained democracy in the Arab region. Building upon the received literature, this paper would contribute to this endeavor.

There is already a vast literature on democratic transitions, spanning varied - if not contrasting- approaches to explaining the phenomena. The influential modernization theory advanced by Lipset (1959) argues that democracy is "secreted out of dictatorship by economic development." As countries develop, social structure becomes complex, labor more active, technological advances empower producers, civil society is empowered, and dictatorial controls become less effective. This interpretation essentially characterizes the Lipsetarian modernization view as the framework for understanding the process of transition from autocracy to democracy (e.g. Barro, 1996).

However, in a more recent work Przeworski (2004, 2009) finds in a political regime transition probability model that authoritarian regimes in relatively high income societies are likely to transit to democracy not because of the modernization effect related to high income levels but because the *latter* is highly associated with past regime instability. Moreover, he also finds that authoritarian regimes in growing economies are less, not more, likely to experience democratic transitions. On the basis of these findings, Przeworski went on to argue that empirically the modernization theory does not offer a convincing explanation to democratic transitions.

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[1] It is interesting to note that the creation of the first Ottoman Parliament (March 1877 to Feb 1878) has been referred to by historians as the first Ottoman experiment in democracy, not of course in the sense of today's established democracies. Rather it embodied the concept of having elected representatives (albeit with very limited powers) to defend the interests of a constituency, negotiate taxation, and attempt to control the budget. The election process was indirect and restricted to certain strata of the male population: the deputies were elected in their respective constituencies albeit under the influence of the Governors of the various provinces (for more details see Herzog and Sharif, 2010).

[2] The rebellious Syrian population has demonstrated unparalleled commitment to unseat one of the most entrenched dictatorships in the region, despite the regime's brutal campaign that has so far claimed more than 60,000 casualties, hundreds of thousands have been detained and injured and massive destruction has been incurred.

[3] Research suggests that democratic waves usually evolve into a diffusion process across a homogenous geographic space, such as the Arab world (e.g. Gleditsch and Ward, 2006).

On the other hand, Epstein, Bates, Goldstone, Kristensen and Halloran (2006) question Przeworski's interpretation of the role of income. Instead they argue that higher incomes per capita significantly increased the likelihood of democratic regimes, both by enhancing the consolidation of existing democracies and by promoting transitions from authoritarian to democratic systems. Moreover, they classify countries into autocracies, democracies, and partial democracies and find that the latter were much more susceptible to democratic transitions, as these counties tend to be more volatile than either democracies or autocracies and are characterized by largely unpredictable polity. Based on these finding they argue that partial democracies should be the point of focus of transition analysis.

The modernization model has also been met with further wide-ranging critique in the political science and political economy-oriented literature. For example, Gleditsch and Choung (2004) argue that economic factors influence the stability of autocracies and the likelihood of crises in general, but do not make transitions to democracy more likely; and Gleditsch and Ward (2006) stress the importance of geographic neighborhood and argue that there is a tendency for transitions to democracy to cluster regionally. In a similar vein Ulfelder and Lustik (2005) emphasize the role of past experiences with democracy in such transitions for both resource rich and other countries while economic recessions increases its likelihood. Also they argue that in countries where they prevail, higher levels of civil liberties and non-violent collective action help initiate such a transition. Moreover, Therborn (1977) argues that European countries became democratic due to wars rather than modernization.

Taking a long historical view, Acemoglu, Jonhson, Robinson and Yared, (2008, 2009) focus on the relationship between economic, political and historical factors. They argue that although income and democracy are positively correlated (over long periods of time), there is no evidence of a causal effect. Instead, omitted—most probably historical—factors appear to have shaped the divergent political and economic development paths of various societies, leading to the positive association between democracy and economic performance. They thus call for a revaluation of the modernization hypothesis with much greater emphasis on the underlying factors affecting both variables and the political and economic development path of societies. However, in a more recent contribution Barro (2012) challenges this critique and argues that at the empirical level the Acemoglu et al rejection of the modernization theory hinges on the insignificance of income and education as determinants of democracy in fixed-effects panel regression systems. Such regressions tend to generate biased results that also render institutional factors insignificant in standard empirical growth models. Instead, he ran fixed effects regressions for a smaller set of countries for which a much longer panel (1870-2009) is available and found very strong support for the modernization hypothesis.

Rothstein and Broms (2011) also invoke history, specifically focusing on how religious practices have been financed. In the Christian West, they argue, religion has been financed from below, which has followed semi-democratic representation, transparency and accountability. Instead, they claim that in the Arab-Muslim countries religion has been financed from above, thereby hindering the development of semi-democratic representation as well as systems for transparency and accountability in public affairs. On the other hand, Kuru (2012) rejects the religion factor (and specifically Islam) as an

explanatory factor for the lack of democracy and, instead, focuses on the influences of the rentier state as a region wide-phenomenon. This, in his view, should help in explaining the persistence of authoritarianism Muslim majority countries in the MENA and Central Asia, in contrast with the democratic experience of Muslim majority countries in other regions where the democratization process has taken place.

Recently Diwan (2012) presents a skeptical assessment of the relevance of the received global literature to explaining the recent political transitions in the Arab world. He views the standard 'repression-cooptation' approach for explaining the incumbent autocratic strategies for fending off popular uprising as relevant for explaining the autocratic past but not the transition to the new democracies. Instead, he argues for a more nuanced analytical framework that explicitly accounts for the role of the middle class, which, he suggests, appears to have played a decisive role, not so much because its ranks have significantly swelled in the intervening periods before the uprisings in the Arab Spring's societies, such as those of Egypt and Tunisia; but more so because the middle class in these societies had switched sides toward the democracy camp, whereas a significant share of this class used to be part of the autocratic coalition in the past. He suggests that the improved democratic aspirations of the middle class in these societies might be linked to increased unemployment and inequality on one hand, and increasing moderation of political Islamist movements on the other, which paved the way for the building of broader coalitions in favor of democratic change.

What the above review suggests is that the influential Lipsetarian thesis may be taken as a framework for analyzing long-term cross-country differences in the standards of democracy, rather than a theory of political transition. Along the lines of this interpretation, the Lipset hypothesis has been deployed in our earlier work (Elbadawi and Makdisi, 2007; Elbadawi, Makdisi and Milante, 2011) as a useful benchmark model for analyzing the Arab democracy deficit relative to the counterfactual consistent with its level of development as well as for testing the two fundamental hypotheses on the additional role of oil and conflicts. They show that for the Arab region, as a whole, while the traditional "modernity" variables remain important determinants of democracy in the long-run, they failed to explain the Arab democracy deficit relative to other comparator regions. Rather, oil and conflicts and their interactions appear to explain this persistent deficit.

This paper compliments our earlier longer term analysis of the Arab democracy deficit and contributes to the literature by estimating the probability of democratic transition, using a multi-year index of "sustainable"[4] democratic transition, based on the Polity score. We analyze an extended 'rentier' model emphasizing the role of resources rents and conflicts, while accounting for other traditional controls analyzed in the benchmark Przeworski (2009)'s model. In view of the fact that the democracy deficit is a related, albeit a different, phenomenon, it is natural that we account for these two pivotal variables that have essentially shaped the post-independence Arab political and economic landscape. Our model also accounts for other potential determinants discussed in the

[4] The term 'sustainable' is meant to stress the distinction between the multi-year (decade and half decade) approach to coding democratic transitions and the year on year concept adopted in the received literature. However, we don't use this term on a consistent basis but it is implicitly assumed.

recent literature, including neighborhood democracy, neighborhood conflicts as well as the initial standard of democracy.

This paper's model, we would argue, addresses the weaknesses of the benchmark modernization model discussed in the literature and attempts to introduce policy content and institutional structure to the largely empirically-oriented Przeworski approach. Moreover, in our quest to address the above critique through specifying and estimating an encompassing democratic transition model, we also attempt to make novel contributions to the literature along the following four dimensions.

First, we analyze democratic transitions using a more appropriate empirical concept than the ones adopted in earlier literature. According to our concept a country is coded as having experienced a democratic transition during a half decadal period if its Polity score jumped by 3 points at the beginning of period and the average rate of change of the score was nonnegative during the remainder of the period. Unlike the other measures used in the received literature, ours accounts for the fact that democratic transition is a process that might take several years to come to completion. Also this index allows for the likely possibility that during the transition phase a country's democratic standing might experience some setback in a year or more while pursuing a rising multi-year democratic trend.

Second, our model not only assesses the impact of oil and conflicts on democratic transitions but also whether or not they also explain the Arab dummies (for oil and non-oil Arab producing countries), i.e. whether they render them insignificant in a model that controls for the regional dummies.

Third, as predicted by theory (e.g. Ali and Elbadawi, 2012) our empirical model controls for threshold effects of resource rents per capita.

Fourth, we also test for the recent hypothesis that partial democracies are more susceptible to regime change than either of autocracies or complete democracies (e.g. Epstein, Bates, Goldstone, Kristensen and Halloran, 2006). Moreover, we also test for whether the status of being a partial democracy also explains the proclivity for further democratization of other developing regions outside the Arab world.

In section two we present definitions of democratic transitions index and highlight preliminary associations and trends of some pivotal variables used in the analysis. Section three states the empirical model and outlines the econometric strategy for estimating it. Section four presents the econometric results and the tests a set of eight hypotheses concerning the role of resource rents, home wars, partial democracy as well as Arab and non-Arab regional dummies. Section five undertakes extensive robustness checks of our extended rentier model and the associated hypotheses against three alternatives. First, we re-estimate the model using a sample of 10-years periods, where the coding of the transition index was based on 10-years periods rather than 5-years. Second, we split the five-years sample into two subsamples- before and after 1990- and estimate the model for each of the two subsamples to test whether the results were driven by the end of the cold war and the emergence of several new states following the break-up of the Soviet Union in 1990.

Finally, we conduct robustness checks to re-assess the peculiar impact of Arab wars as a hindrance to democratic transitions, especially the lingering Arab-Israeli conflict. This has been a widely held view in the Arab world that has been a subject of a recent critique in the literature (e.g. Chaney, 2012). Section six revisits the question as to how resource rents, the most important factor from the Arab world perspective, might hinder democratic transitions; again testing for eight more hypotheses on the potential channels for this effect. Section seven concludes.

2. Democratic Transitions in and Outside the Arab world

In assessing democratic transitions in our present analysis we rely upon the widely used Polity IV Index as a measure of democracy[5]. The Polity IV Index is based on two concepts: "institutionalized democracy" (DEM) and "institutionalized autocracy" (AUT). The DEM score is coded according to four measures of regime characteristics: competitiveness of executive recruitment; openness of executive recruitment; constraints on the chief executive; and competitiveness of political participation. These measures, along with regulation of participation, form the basis for calculating the AUT score. The Polity score (POL) is computed by subtracting the AUT score from the DEM score, resulting in a score from -10 (strongly autocratic) to 10 (strongly democratic). Using the Polity data set we define the following index:

Democratic transition: a country is coded as having witnessed a democratic transition during the period (t_0, t_0+N), provided that it experienced a jump of "three" points in the Polity scale at time t_0 and that the average log change in this index is non-negative during the period between t_0 and t_0+N. The length of the transition period (N) should be long enough to allow the process to play out. In particular, we define democratic transitions over 10 and 5-year periods.

Other recent empirical research on democratic transitions was built around the dichotomous democracy-autocracy index due to Przeworski et al. (2000) and updated by Cheibub and Gandhi (2004). In this data set, political regimes are classified as democracies if they meet all of the following conditions: the chief executive and the legislature are elected; there are at least two political parties; and at least on incumbent regime has been defeated. In addition to Przeworski and his research associates, Ross (2009), for example, uses this data set and codes the incidence of democratic transition by a dummy variable that takes the value of "one" in the year that a country changes from authoritarian to democratic rule, and "zero" otherwise. However, he also uses Polity IV to fill the gaps for countries not included in their data set[6].

The year on year indexes, however, do not account for the fact that democratic transition is a process that might take several years, even decades, to come to completion. Moreover, during the transition phase a country's democratic standing might experience some setback in a year or more while pursuing a rising multi-year democratic trend. Our

[5] This measure is somewhat more objective than the Freedom House Index because it uses objective questions with a wider range of measurement. However, Elbadawi et al (2011) show that FH index as well as the 'Democracy and Development classifications' (Przeworski et al., 2000) strongly corroborates the findings based on the Polity index.

[6] Instead, Ulfelder (2007) develops his own dichotomous year on year autocracy-democracy index.

proposed multi-year measure is precisely intended to account for this key feature of democratic transitions.

The Arab world has missed out on the recent democratic wave that swept the developing world since the mid-1970s. For 45 years (1960-2004) it was ruled by extremely autocratic regimes, which averaged -7 or less in the Polity score, improving to about -4 in 2010. This wave started with the Latin American region (LAC), which achieved a Polity score of 3 in the second half of the decade and steadily democratized to reach a score of 8 in the 2000 decade. A similar but weaker trend was also experienced by East Asia (EA), which achieved a Polity score of more than 4 in the half of the 2000 decade, but it appears to have suffered an autocratic relapse in the second half of the decade. The trend further consolidated following the collapse of the former Soviet Union, when Sub-Saharan Africa (SSA) also joined the democratization club in the second half of the 1990s. The average Polity score in this region achieved a significant jump in this period, from more than -5 to -1.5; then reaching 2.5 in the second half of 2000. However, in addition to the Arab region, the other exception is Southern & Central Asia (SCA).

Samuel Huntington (1991) suggests that global patterns of democratization as well as "reverse" democratization come in waves. He notes that following the first pro (1810-1920) and reverse waves (1920-1940) of democratization the "second wave" of democratization began in 1943 and ended in 1962. He argues that this led to a second reverse wave that started in 1958 and ended in 1975, followed by a third wave of democratization that started in 1974. While the debate continues on the validity of these claims, the above evidence suggests that these waves do exist, albeit only weakly synchronized across regions. In addition to the pro waves discussed above, there was evidence of reverse waves in LAC and East Asia during 1970-80 and 1975-84, respectively. Moreover, though SSA and the Arab world were already autocratic in the 1960s, the two regions had experienced what amounts to an even deeper autocratic wave in the following two decades during 1970-90. However, as discussed above, SSA managed to achieve a major transition thereafter. Should, as expected, the current popular uprising in the Arab world usher the region into a wide scale democratic transformation, it would certainly qualify as a new democratic wave.

The evidence on the frequency of "sustainable" democratic transitions strongly coheres with the above story (Figure 1). As expected such frequency is the lowest in the Arab region, where only seven such transitions happened in half a century. Prior to 2011 most Arab countries have not experienced positive jumps in the Polity scale; and those that did as a result of popular uprisings that ended long-reigning military rule, such as Sudan and Mauritania, the nascent democratic regimes soon fell victim to another military coup[7]. This record pales when compared to the 79 transitions for Latin America; 52 for Sub-Saharan Africa and 41 for East Asia. Again, in tandem with the level democracy data, the other exception outside the Arab world was Southern and Central Asia, which recorded an equally disappointing record of only 13 transitions.

[7] For example, since its independence Sudan was ruled by three short-lived democratic regimes (1956-58; 1965-69; 1986-89), with a total duration of ten years. On the other hand, the three military regimes that toppled them (1958-64; 1969-1985; 1989-present), have so far ruled the country for more than 45 years.

For the remainder of this section and before we formally estimate the process of democratic transitions, we take a preliminary look at the core correlates of democratic transitions and highlight the key contrasts between the Arab world and other developing regions.

2.1 The core correlates

The resource rents per capita: mostly due to data availability the received literature has by and large measured natural resource rents by the share of oil and mineral exports to GDP. However, as argued by Ross (2008), this measure is flawed because it does not account for the share of resource rents spent in the domestic economy. Moreover, the GDP is not the appropriate scale variable because the democracy impact of rents/GDP is subject to multiple sources of biases, as third factors (such as civil wars, corruption …etc.) are likely to be at work affecting both democracy and growth and hence the rents/GDP ratio. Instead, Ross proxies oil rent by the total value of the resource income divided by population. He argues that his oil income per capita can be used to "test the starkest version of the "oil hinders democracy" claim: does the value of a country's geological endowment- regardless of how well it is managed, and how it influences the rest of the economy- affect the accountability of government?" (p. 3-4).

However, the gross natural resource income measure tends to overstate the influence of the resource rents because it does not account for the cost of product. Fortunately, we are able to avoid this problem thanks to new global data on natural resource rents[8]. This new resource rents variable based on the World Bank's "genuine" saving data base adjusts oil and other mineral incomes to the cost of production and transfers to non-government investors, such as the oil and mining companies.

As expected there is a strong negative association between resource rents and the frequency of democratic transitions Figure 2. The figure depicts a country's total number of democratic transitions in 1960-2009 (y-axis) against country's average resource rents per capita during 1960-2009 (x-axis). The figure also suggests that the potential corrosive effect of resource rents on democracy is likely to be particularly strong for the case of the Arab world, given that oil looms so large in this region. For example, out of the top ten countries that collected the highest resource rents per capita during 2005-09, seven were Arab oil and gas exporters- all from the oil-rich, population scarce GCC plus Libya; and the following 15 countries includes six Arab oil and mineral exporters, including oil-rich but populous Algeria and Iraq (Figure 3).

Evidence from the received literature suggests that the observed robust negative association between resource rents and democracy is in fact causative (e.g. Ali and Elbadawi, 2012; Elbadawi, Makdisi and Milante, 2011; Ross, 2008, 2009). Therefore, it has been argued that the immense oil resources commanded by several Arab countries have facilitated the emergence of repressive militaristic regimes or protected un-democratic, traditionally authoritarian regimes. The theoretical literature proposes several channels through which the resource rents might complicate transition to democratic rule. Furthermore, the concentration of the largest share of global oil reserves in the Arab region, among a handful of small countries, has led to the presence of

[8] The resource rents data series we have used is obtained from the World Bank data base (WDI) and the methodology used for computing the rents is based on Hamilton and Ruta (2008).

tremendous foreign influence, as well as occasional direct interventions, which by and large has not favored democratization[9].

Home wars. A further examination of Figure 2 reveals that Arab countries, including those with limited oil and mineral resources, fall well above the regression line. This suggests that other factors may be at work in shaping the democratic outcome in this region. As argued above, the proclivity of the region to conflict strongly suggests it as a likely additional explanatory factor. The Arab world is only second to SSA in terms of incidence of 'home wars', where a country-year is coded as 1 if the country is party to an external war or has experienced a civil war in that year; instead a peaceful year is coded as zero (Table 2). According to this index an Arab country had experienced an average of more than five incidences of home wars per decade during the last 40 years (1960-99); and its immediate neighborhood was impacted by nine incidences of wars per decade during the same period. The neighborhood war index for a country is given by the average incidence of wars experienced by its immediate neighbors.

However, contrasting the Arab world with other regions in terms of incidences of wars, as we did, understates the arguably much more devastating impact of the lingering Arab-Israeli conflict and the perceived adversarial global power interventions in the region, which provided potent arguments for an authoritarian brand of Arab nationalism for most of the last fifty years or so. Moreover, the large scale regional Gulf wars that involved major external powers as well as the surge of sectarian civil wars in a few Arab countries (e.g. Algeria and Sudan) are likely to have had much more dire consequences for democracy than the traditional ideological insurgencies that have occurred in other parts of the developing world, most notably Latin America.

Modernity controls: income per capita and growth. The Arab world experienced high growth for some 24 years during 1960–84, with per capita GDP growing at an annual average rate of 2.5% in the median Arab country, including spectacular growth in some oil-producing economies. However, following the collapse of oil prices in the early 1980s, per capita growth in the Arab world declined to about 1%. Nonetheless, income per capita remains relatively high in most Arab countries. The median income per capita in 200-09 for the high-income GCC group (at almost $32000) was only second to the OECD and some (e.g. Qatar, Kuwait and the UAE) have recently surpassed many countries in the latter group; while the income per capita for the other Arab countries that comprises the other oil and diversified non-oil economies was only slightly below $4000, which was more than twice the median income for the developing world. Even the primary-producing poor Arab countries of Mauritania, Sudan, Yemen had an average per capita income of about $1450, which was higher than the median income level for SSA[10].

[9] For example, the three major Gulf wars (1980 - 1988, 1991, and 2003), linked to the interests of global powers in the oil-rich region, have not only failed to stimulate a democratic process in the region at a time of positive changes in global democratization, but in some ways tended to promote sectarian and/or ethnic divisions.

[10] Moreover, most Arab countries were able to effectively exploit their initial extended economic success to achieve considerable gains in the area of human development. The increase in wealth was distributed throughout the society, leading to an increase of 100% in average years of schooling between 1960–84 and 1985–98. Similarly, life expectancy increased by an impressive 10 years. Average income per capita in 1985 at ($5,300 in purchasing power parity) was almost five times the income level of 1960 (Shafik 1995).

However, despite its sustained economic and social development for almost two and a half decade since 1960, the region failed to join the 1980s democratic waves that transformed Latin America and East Asia (Table 1). The divergence between Arab and East Asian countries over the period 1960 to 2010 is perhaps most revealing, because East Asia in the 1960s seemed to be a reasonable comparator group. Despite the initial similarities in their level of development, the average polity score of East Asian countries in 2003 was -0.25, whereas the Arab countries had a mean of -3.7; and for 2010 the gap between the two regions remained almost the same at more than 3 points in the Polity scale.

Therefore, while the modernization variables are likely to be relevant controls for the analysis of democratic transitions, the Arab world presents a notable example where they may be necessary but not sufficient for explaining the phenomenon.

Past Political Instability: STRA. In addition to initial income per capita and economic growth, this is the third control variable analyzed in the benchmark Przeworski's (2004) model. It is given by the number of times a country experienced a transition from democracy to autocracy and goes with the mnemonic STRA (the sum of transitions to authoritarianism). STRA was motivated by pure empiricism, in that the transition probability from autocracy to democracy (P_{AD}) or vice versa (P_{DA}) tends to exhibit strong path-dependence. This phenomenon, however, turns out to have important policy implications for the role of initial income in the probability of democratic transition. Using a global sample of regimes type in a conditional Markovian transition probability model, Przeworski find that in a country which never experience death of a democratic regime in the past (i.e. STRA= 0), the present dictatorship has an expected future life span of 83 years. Instead, a history of only one transition from democracy to autocracy would shorten the expected life of the present authoritarian regime to only 14 years.

Controlling for STRA in a democratic transition probability (P_{AD}) probit model along with initial income and growth, Przeworski finds that initial income was no longer significant. The same variable was negatively and highly significant in the pure modernity model that excludes STRA. He interprets this important finding as that a dictatorship that assumes power in high income societies is also likely to inherent high political instability; which, in turn, tends to increase current instability for the incumbent regime. This finding has important implications for the Arab world as it provides a plausible explanation as to why the region's relatively high income has not been a factor in promoting democratic transitions in the past[11]. The average STRA per an Arab country was a minuscule 0.09, compared to 0.15 for SSA; 0.21 for Southern and Central Asia; 0.35 for East Asia and 1.09 for LAC (Figure 4).

To the extent that higher initial income affect current regime instability by breeding past political instability, the apparently weak association between the two variables in the case of the Arab world should be an interesting issue for future research. In particular, it

[11] The Arab region has experienced a very low level of STRA, being ruled by long-reigning autocracies for most of its post-independence history. The sole exception was Sudan, which experienced the death of three democracies since 1956; but it has so far also experienced two popular uprising that toppled two dictatorships.

would be interesting to assess whether resource-based income has different implications for past political instability than non-resource income.

3. Modeling Democratic Transitions

The empirical model of Przeworski (2009) suggests that the transition probability from authoritarian (A) to democratic (D) regimes is characterized by three empirical regularities that survive extensive empirical testing:

- First, authoritarian regimes that assume power in relatively rich societies are likely to experience higher frequency of death (i.e. higher probability of transition to democracy: P_{AD})
- Second, autocracies in countries with a history of political instability in terms of frequent transitions from democracy to autocracy are likely to experience high frequency of democratic transitions in the future: i.e. past political instability (STRA) matters
- Third, autocracies in historically high income societies tend to experience high frequency to death because high income also breeds high instability, hence controlling for STRA renders the income effect insignificant as a determinant of P_{AD}
- Fourth, however, even after controlling for STRA, given initial income, authoritarian regimes that achieve higher growth are less, not more, likely to die (i.e. lower P_{AD})

In view of our interest to explain the "halting" democratization process in the Arab world, we use an extended version of the above benchmark model to sequentially test for the two pivotal factors of resource rents, most notably oil rents, and wars. As discussed earlier, both are strongly emphasized by recent econometric and case study literature on the Arab democracy deficit[12].

We should like to note here that while there is ample evidence on the association of oil rents with the prevalence and persistence of autocratic rule, there is relatively little systematic empirical analysis of the causal link between the two. A few exceptions include Ross (2008, 2009), who tests the impact of oil income on democratic transition in a Przeworski "benchmark" model. Also Ulfelder and Lustik (2005) test the impact of resource rents in a variant of a similar model, though more focused on political and human development controls than on overall income per capita and growth as in the Przeworski model. Both authors find that natural resource rents (specifically oil wealth for the case of Ross) were robustly and negatively associated with the probability of democratic transitions.

To formalize the exposition and systematically develop our main hypothesis, we posit a rentier model that accounts for the resource rents per capita in addition to the control of the above Przeworski's model:

$$P_{AD}(i,T+S) = F_{AD}(1=yes,0=no) = f(\beta,\delta_{\mathrm{Re}\,nt},\delta_{Dum},u_i \mid x_{i,T},\mathrm{Re}\,ntpc_{i,T},\mathrm{Re}\,gDum) \quad (1)$$

[12] Ross (2008, 2009) and Ulfelder and Lustik (2005) analyze the role of oil as a hindrances to democratic transitions in general; while Elbadawi and Makdisi (2011) edited book and Makdisi (2011) contain global and country-specific research on the role of oil and conflicts as two overarching factors that affect the entire Arab world and possibly provide an explanation for this region's democracy deficit.

Where for country i, time T is an initial year at the start of the democratic transition, S is the time the process took before the democratic transition is complete at time T+S. However, to avoid reverse endogeneity we only include the explanatory variables at the beginning of the period. $P_{AD}(T+S)$ is the transition probability from A to D in time T+S; $x_{i,T}$ is a vector containing the three Przeworski's control variables: $logGDPpc_{i,T}$, the log of per capita income in time T; $Growth_T$, average per capita growth at the beginning of the transition period; and STRA (i, t<T), the measure of past political instability, given by the sum of transitions to authoritarianism prior to time T. The resource rents per capita ($Rentpc_{i,T}$), the central focus of this analysis, is the ratio of the resource rents per population at the beginning of period. Finally, RegDum stands for regional dummies covering Sub-Saharan Africa (SSA); Latin America & the Caribbean (LAC); South and Central Asia (SCA); East Asia (EA); and the Arab world (Arab), which is also further divided into the small population and highly resource-rich countries of the Gulf cooperation Council (ArabOil_GCC); other oil-rich populous Arab countries (ArabOil_NonGCC) and the non-oil Arab countries (Arab_NonOil).

The parameters β, $\delta_{\mathrm{Re}\,nt}$ and δ_{Dum} are the corresponding coefficients; and u_i refers to a country-specific random effect. Empirical analysis in the received literature has mostly relied on pooled or fixed-effects regressions. The problems with the former are well known; however, in applying the fixed-effects estimator to models with qualitative dependent variables based on panel data is also problematic. Though the conditional fixed-effects logit model seems to be the preferred choice, it requires very strong assumptions, including strict exogeneity of the regressors, and stationarity over time. Because these conditions are frequently violated in economic data, the random-effects estimator is an attractive alternative. In the panel data context, the probit model is computationally tractable while the logit model is not. The only limitation of probit models is that they require normal distributions for all unobserved components, a feature that may characterize most unobserved, random components but that is notoriously absent in cases where variables are truncated (e.g., prices must be positive)[13]. Therefore, on balance we follow Elbadawi, Schmidt-Hebbel and Soto (2011) and choose the discrete choice random-effects probit for estimating the probability of democratic transitions (P_{AD}).

Next we consider adding 'home wars' to account for the combined effects of civil and external wars, hence we have:

$$P_{AD}(i,T+S) = f(\beta, \delta_{\mathrm{Re}\,nt}, \delta_{wars}, \delta_{Dum}, u_i \mid x_{i,T}, \mathrm{Re}\,ntpc_{i,T}, HomeWars_{i,T}, \mathrm{Re}\,gDum) \qquad (2)$$

Where δ_{wars} is the coefficient of home wars (HomeWars).

The above two models allows for testing several interesting hypotheses regarding the potential roles of the two factors in halting democratic transitions, some have not been considered before in the literature. In particular, we test for whether oil and conflicts combined account for the two negative sub-Arab dummies for oil and non-oil countries.

[13] See Elbadawi, Schmidt-Hebbel and Soto (2011) for a more detailed discussion of the econometric properties of logit and pobit estimators in panel data estimation for the case of qualitative dependent variables.

Finally, the third core model is a further extension of equation 2:

$$P_{AD}(i,T+S) = f(\beta, \delta_{Rent}, \delta_{wars}, \delta_{Pdem}, \delta_{Dum}, u_i \mid x_{i,T}, Rentpc_{i,T}, HomeWars_{i,T}, PartialDemoc_{i,T}, RegDum) \quad (3)$$

Where δ_{Pdem} is the coefficient of the partial democracy variable (PartialDemoc).

This model is designed to test for the hypothesis that partial democracies[14] are more susceptible to democratic transitions, as claimed by some scholars in the recent literature. For example, Epstein et. al (2006) argue that partial democracies should be the point of focus of transition analysis as these counties are more volatile than either democracies or autocracies and their transitions are largely unpredictable. Moreover, to the extent that other regions outside the Arab world appear to be dominated by partial democratic regimes, we also test for whether this effect might also explain non-Arab regional dummies.

Next we estimate the above three core models and discuss the results in the context of explicit hypotheses on the role of resource rents, wars and partial democracy.

4. The Econometric Results

We estimate the above probability model using a panel data set of 449 half-decadal country periods over 1960-2009 and covering 118 countries, including 55 that generated annual average per capita (net) revenues of at least $50 (real PPP) from oil and other point-source minerals during 2005-09; of which 14 are from the Arab world. Appendix Table A.1 presents the overall summary statistics for all regression variables.

4.2 Explaining the Arab oil-dependent dummies: the resource rents

We consider three hypotheses on the role of resource rents as hindrance to democratic transition; and a fourth one on whether or not the resource effect could actually account for sub-regional dummies for Arab oil-dependent economies:

H1: Controlling for initial income, growth and the legacy of past political instability, natural resource rents ***hinders*** democratic transition

H2: And, the natural resource rents ***eliminate*** *the sub-regional dummies of GCC and other oil-dependent Arab economies*, but other Arab countries and other regions remain significant

H3: However, the resource rents impact on democratic transition is subject to ***threshold*** effects (i.e. below a certain threshold, resource rents have no impact)

H4: Moreover, resource rents are impediment to democratic transitions only in societies ruled by ***autocracies or partial democracies***

Table 3 contains the results of random probit regressions, based on the model of equation 1. The results of regression 1 suggest that economic growth was negatively and highly significantly associated with the probability of democratic transitions, while past political instability (STRA) was positively and robustly associated with democratic transition. On the other hand, initial income was not found to have any statistically or quantitatively

[14] To be more precisely defined in section 4.

significant impact. These results hold not only in a model that controls for the level of resource rents but also when we extend the analysis to account for sub-regional Arab dummies (regression 2); the threshold effects of the resource rents (regression 3); and the interaction between resource rents and initial autocracy or partial democracy (regression 4).

Therefore, in this fairly encompassing model, we corroborate the two Przeworski's fundamental findings: firstly authoritarian states witnessing lower growth in the previous period and having a history of political instability are more likely to become democratic; secondly initial wealth has no impact when past political instability is accounted for. Przeworski's argues that autocratic regime in initially relatively wealthy societies are likely to lose power to new democracies not because of the modernity effect of wealth but rather because the latter breeds past political instability. On the other hand, Ross (2008) finds that the income effect was positively and strongly associated with democratic transition one we control for the oil. However, the evidence of Table 1 cast doubt on the robustness of Ross's evidence when, in our view, a more appropriate multi-year concept of democratic transition is considered. Our results, therefore, suggest that the above Przeworski's argument is entirely plausible.

The above findings are, indeed, interesting on their own right; however, our main interest is focused on the resource rents effect, which we find to be negatively correlated with the probability of democratic transition and highly statistically significant at 1% confidence level. Therefore, we accept the central hypothesis H1, in that authoritarian regimes in resource endowed societies are less likely to become democratic. This finding confirms earlier results in the literature, including those of Ulfelder (2007) and Ross (2008). Moreover, because we use a wider concept of rents, our finding extends their earlier results to all point-source natural resources, not just oil.

However, though the resource rents enters highly significantly, the resource-augmented model could not explain the 'aggregate' Arab dummy, which was found to be negative and highly significant (regression 1). This suggests splitting the Arab dummy into its three sub-components: the GCC, the populous Arab oil countries and the non-oil Arab countries. The model with the sub-Arab regional dummies replacing the aggregate one fully accounts for the two sub-regional Arab oil dummies (regression 2), while the third sub-regional dummy for the non-oil Arab countries remains negative and highly significant. We, therefore, accept H2, and its implications that while resource rents, by and large, provides the ultimate story behind the halting of democratic transitions in the oil-dependent countries, which is a fairly significant group; other factors appear to be at play regarding the non-oil Arab countries. We conjecture below that war is likely to be one of these plausible factors. It is also important to note that, except for South and Central Asia (SCA), which also includes several resource-dependent countries, the dummies for other developing countries had negative and significant effects on democratic transitions. It should be noted that all regional dummies (whether statistically significant or not) enter with a negative sign, because they are estimated relative to the excluded group of developed countries, which naturally has much higher standard of democracy.

Moreover, we also test for two more complementary hypotheses (H3 & H4) not adequately analyzed in the literature, though they both have strong theoretical appeal.

For example, in a game theoretic model Ali and Elbadawi (2012) argues that authoritarian regimes with access to substantial natural resources who rule over small populations have a comparative advantage that is simply unavailable to other authoritarian governments. These governments have control over high enough resources that could be redistributed to their populations to effectively remove the incentive to revolt. In addition, they argue that the public sector is the mechanism of choice for governments to effect this redistribution. Therefore, public sector jobs essentially become funnels channeling income to the citizens of the country. Hence, at the theoretical level the use of resource rents to fend off regime change, democratic or otherwise, is premised on autocratic, or at least not fully democratic, incumbent elites (H4); and that the rent-sharing strategy is not likely to be optimum from the perspective of the elites unless they have control over high enough rents per citizen, above some threshold (H3).

Regression 3 of Table 3 provides the test for H3, where we replace the resource rents variable of regression 1 by three threshold variables defined as interaction terms with the resource rents:

- Resource Rents_Q1 = Log Rentpc* DumQ1
- Resource Rents_Q2-3 = Log Rentpc* DumQ2-Q3
- Resource Rents_Q4 = Log Rentpc* DumQ4

Where, DumQ1 is a dummy variable that equals 1 if the log Rentpc is less than or equal to the 1st quartile of the sample data, and zero elsewhere; likewise, DumQ2-3 equals 1 if it falls in the interval defined by the first and third quartiles of the data (Q1, Q3), and zero elsewhere; and DumQ4 equals 1 if it is larger than or equal to the third quartile, and zero elsewhere.

We find that the middle (Resource Rents_Q2-3), and especially, the top (Resource Rents_Q4) quartiles were negatively and strongly significantly associated with the transition probability, while the lowest quartile (Resource Rents_Q1) had negative but insignificant effect. Hence, we accept H3, in that when resource rents are too low they are not likely to have a negative influence on democratic transition.

Finally, we test for H4 in regression 4, which adds an interactive term: Log Rentpc*Dum_Polity below 6, where the dummy is set equal to 1, if initial Polity is less than 6; and zero elsewhere. We find that the level effect (Log Rentpc) was no longer significant, while the interactions term was negative and highly statistically significant[15]. It is interesting that the interaction effect (at 0.45) is exactly equal to that of the level effect in regression 1. This suggests that the estimated corrosive resource rent's effect on democratic transitions is fully accounted for by strategic choices of ruling elites in autocracies or at best partial democracies. This is consistent with most country experiences. Indeed, it is fairly safe to reckon that incumbent elites in Norway or Chile will not, in fact in all likelihood they cannot, use oil or cooper rents to remain in power. Therefore, we accept H4.

[15] Regressions for all Polity thresholds less than 6 result in both the level and the interaction affects being statistically negative and significant. Thus, we chose this threshold, which defines a Polity range (-10, 5) that consists of both autocratic and partial democratic regimes.

4.2 Explaining the non-Oil Arab regional dummy: 'home' wars

As discussed above, the regressions of Table 3 have failed to account for the non-oil Arab dummy. We pursue the quest for explaining the remaining component of the Arab democracy puzzle by estimating a set of two more encompassing models that also account for the home wars effect (Table 4). In this context we analyze the possible impact of wars in the context of the two following hypotheses:

H5: *Wars impede* democratic transitions, after controlling for resource rents and other traditional controls

H6: The incidence of wars explains the Non-Oil Arab dummy effect in an extended rentier model

The first two columns of Table 4 (regressions 5 & 6) report the estimation results of the war augmented model (the two regressions are, respectively, extensions of regressions 3 and 4 of Table 3). The home war effect was negative and significant at 10% level for the threshold-based model (regression #5); and had much larger negative and statistically stronger impact (at 1% significance level) for the initial polity-based model (regression # 6). The estimated war coefficients of the two regressions suggest that the probability of successful democratic transition in a war-affected country accounts for 38% {= exp (-0.97)*100%} to 29% {= exp (-1.23)*100%} of the transition probability of a war-free country with identical characteristics. Wars, therefore, are strong hindrance to democratic transitions, as predicted by H5. Moreover, now having controlled for the war effect, the non-oil Arab dummy is no longer statistically significant. Therefore, we accept H6 as well.

So now having established that wars do hinder democratic transitions as well fully explained the oil and non-oil Arab dummies, it is pertinent to assess the robustness of the earlier results of regressions 3 & 4 under the war augmented model of Table 4. It is rather remarkable to note that almost all the results continue to hold. The only exception was the resource threshold effect, which became tighter under the extended threshold-based model (regression 5), where only the top resource rents quartile group (Resource Rents_Q4) was found to be negatively and strongly significantly associated with the transition probability. This is a more realistic finding and is more consistent with country experiences[16].

4.3 Explaining the non-Arab regional dummies: partial democracy

As discussed above we have so far accounted for all the Arab regional dummies as well as for that of SCA. However, we have yet to explain those for SSA, LAC and EA. To do this we start from Epstein et. al (2006)'s important finding that, relative to autocracies, partial democracies are more susceptible to democratic transitions. Moreover, as reviewed in section 2 (Table 1), countries in these three regions have made major strides in terms of democratic transitions from hitherto autocratic regimes, though most have not yet consolidated such transitions enough to join the club of mature democracies.

[16] For example, Ali and Elbadawi (2012) present evidence suggesting that the resource rents in the highly endowed and sparsely populated GCC appear to be an effective tool for the authoritarian bargain, while ruling elites in the other populous Arab oil countries, with much lower resources per capita, have not been equally successful.

Therefore, the status of being a partial democracy should be considered as a possible instrument for explaining the regional effects associated with the three regions.

We define partial democracy (PartialDemoc) as follows:

- PartialDemoc= Polity*Dum(PartialDemoc)

Where,

- Dum (PartialDemoc)= 1 for 0< Polity < 6; 0 elsewhere

Adding this variable to account for the marginal impact of the partial democracy effect, we generate perhaps the most encompassing core democratic transitions model in the literature. This model allows testing for the two following hypotheses:

H7: Compared to Autocracies and full democracies[17], *Partial democracies (0<Polity<6)* are *more susceptible* to democratic transitions

H8: Controlling for *partial democracy (0<Polity<6) explains the Non-Arab regional effects* in an extended rentier model that also accounts for the incidence of wars

The results of the estimation of the two versions of the model reported in regressions 7 and 8 of Table 4. We find partial democracy to be positively and significantly (at 10% significance level) associated with democratic transitions, as predicted by H7. Moreover, it renders the LAC and EA regional effects insignificant, while SSA remains significant in one but not both regressions; basically confirming H8. Again, all the results regarding the marginal impact of resource rents, wars and other regions remain valid until under the most encompassing model of regressions 7 and 8.

5. Robustness Checks

We test the robustness of our extended rentier model and the associated hypotheses (H1-8) in three ways. First, we estimate the model and re-test the above hypotheses using a 10-years sample, where democratic transition was coded over 10 rather than 5-years periods. Second, we split the 5-years period sample into two sub-samples: 1960-89 and 1990-2009, to account for the demise of the Soviet Union in 1990. Third, we test the robustness of the thesis that Arab wars were major factors militating against democratization in the Arab region (e.g. Elbadawi and Makdisi, 2007, 2011). In this context we test hypotheses H5 & 6, using various measures of Arab wars.

The 10-years sample. The decadal and half-decadal frequencies have similar shapes, though, as expected, the number of countries achieving democratic transitions during a 10-years period tend to be larger than in a half decade period (see Appendix Figure A.1). The estimation results for the 10-years democratic transitions lend support to our extended rentier model, especially with regard to the core hypotheses on the corrosive effects of the resource rents on democratization (Table 5). We find that overall resource rents have had negative impact on democratic transitions (H1); that the impact of the resource rents is, however, subject to a scale effect (H3); and that it constitutes a hindrance to democratic transitions (or consolidation) only in autocracies or partial democracies (H4). Moreover, we corroborate hypothesis H2, in that the resource rents also fully explain the Arab oil exporters' dummy; that home wars hinders democratic

[17] Because we eliminate from the sample all country years with Polity scores more than 8, the 'full' democracy group will be those countries with Polity scores equaling 6, 7 or 8.

transitions (H5); and that it also fully explains the dummy for the non-oil Arab group, which is dominated by many conflict-affected countries (H6). On the other hand, we are unable to corroborate our earlier evidence on the susceptibility of partial democracies to democratic transitions (H7); nor the hypothesis that controlling for the partial democracy effect should explain the dummies for regions, such as Latin America and East Asia, where democratization have started earlier but is still unfolding (H8).

The before and after the collapse of the Soviet Union: 1960-89 and 1990-2009. It has been well documented in the literature that major democratic waves have happened in the aftermath of global systemic shocks, such as international wars. Furthermore, it has been argued that these waves were associated with the creation of new states that usually follow the end of major wars. For example, the breakup of the Austro-Hungarian and Ottoman Empires; the decolonization following the end of World War Two; and the end of the Cold War and the break-up of the Soviet Union have all resulted in the creation of new states. To the extent that these new states were relatively democratic because they were likely to emulate the democratic victors or the former colonial masters, their emergence should give rise to democratic waves if it is clustered in time (Strand et al, 2012).

Subscribing to this view we split the sample into two sub-samples (before and after 1990) to account for the end of the cold war and the demise of the Soviet Union. The results of the estimation of the two samples are reported in Table 6. Again we find that the core hypotheses on the resource rents and home wars remain valid before and after the breakup of the former Soviet Union[18]. Also, as before, we are unable to confirm the two hypotheses regarding the susceptibility of partial democracies to democratic transitions (H7 & 8).

Alternative Arab Wars. The role of home war as a hindrance to democratic transition was confirmed for different choices of transition duration and for before and after the end of the cold war. Moreover, it has also shown to have accounted for any plausible idiosyncratic effects associated with the largely conflictive non-oil Arab countries. However, given the emphasis in the received literature on wars as an impediment to democratization in the Arab world, it is important to test the war effect for alternative measures of Arab war to confirm that they are not driven by our initial specification, given by the aggregate incidence of wars experienced by a country in every half decade. In this context we are interested in decomposing this unique feature of Arab states. To disaggregate the effect of conflict and determine whether type of Arab conflict affects democratization, we follow Elbadawi, Makdisi and Milante (2007) and introduce three measures of Arab battle deaths, weighted by distance[19]: battle deaths from the Israeli-Palestinian conflict, from Arab civil wars, and from international wars fought wholly or partly in Arab countries. We employ data on battle deaths from the Uppsala/PRIO Armed Conflicts Database. Additionally, this battle death data is weighted by distance

[18] However, due to the limited number of country periods we did not distinguish between Arab oil and non-oil countries, hence we do not test for Hypotheses 2 & 6.

[19] For example, for a civil war in Algeria, the number of battle deaths for Algeria will be the actual numbers; while the regional impact of the Algerian civil war for Kuwait will be measured by the battle deaths from the Algerian civil war weighted by a scale variable reflecting the distance between Algiers and Kuwait city.

between Arab states similar to a gravity model, with data on distance from Centre D'Etudes Prospectives et d'Informations Internationales (CEPII; the French Research Center in International Economics). Lagged values of these measures are employed to avoid endogeneity, and the natural log of the variable is used to reflect the diminishing effect of large scale violence. The distance weighted battle deaths variables are contained in Figures 6-7 for the three types of Arab wars, respectively; and Figure 8 presents the corresponding variable for all major Arab wars combined.

To single out this effect, we use a version of regression 7 (of Table 4), where we replace our baseline 'home war' variable with Arab-specific war measures, based on number of battle deaths. The results of estimating this model is contained in Table 7. We find that the battle deaths from civil wars have had a significant and negative effect on democratic transition, proportional to the scale of the civil strife (regression 19). However, proximity to large international conflicts was not found to negatively affect Arab democratization (regression 20). This is rather surprising since large scale interventions such as the occupation of Iraq and conflicts like the Gulf Wars are likely to have contributed to the resistance to democratization in the Arab world, especially for those countries bordering the conflicts. On the other hand, when all Arab battle deaths are summed and weighted by distance, the effect of local and regional large-scale violence is negative and significant (regression 22).

Finally, the battle deaths from the Arab/Israeli conflict were negatively and highly significantly associated with democratic transition in the Arab world (regression 21). This finding suggests that Arab countries close to Israel and Palestine especially resist democratization following periods of large scale Israeli-Palestinian conflict. This result, we would argue, attains special significance because it provides direct evidence corroborating the widely held view among scholarship on contemporary Arab politics that this lingering conflict has in fact shaped Arab political discourse since the late 1940s.

In a recent paper Chaney (2012) claims that oil and the Arab-Israeli conflict do not explain the Arab democracy deficit. Though he does not directly analyze democratic transition, nevertheless, his results merit some discussion in this context as well. He presents results, based on a cross-country historical institutions empirical model, suggesting that the Arab democracy deficit can be explained by the share of the share of a country's land mass that was conquered by the Arab armies in the centuries following the death of Prophet Muhammad. He links his results to the long run influence of 'control structure' that evolved under the Islamic empires in the pre-modern era. Moreover, he claims that his results are robust against the two factors of oil and the Arab-Israeli conflict, because when oil countries and those that are in close geographic proximity to Israel are removed for the sample, his results remain unchanged.

In our view, Chaney's approach flies against fairly established evidence and accumulated country experiences. First, the role of oil as a hindrance to democracy has been firmly established in the literature. This of course is global evidence that is not necessarily confined to the Arab region and, therefore, is not a compelling reason as to why this region is different. However, given the uniqueness of this region in terms of the dominance of oil coupled with the other evidence on the diffusion of democratic transitions in the form of waves across countries in a geographic space provides, in our view, a viable explanation for the peculiar democratic discourse in the Arab world.

Second, the evidence presented in this paper regarding the negative impact of wars on democracy, suggests that conflicts that have regional reach do not only directly impede democratic transition but are also likely to be a causative channel for the hindrance impact of oil and resource rents. The view that the lingering Arab-Israeli conflict has played that role and still does is a widely held view among the vast majority of the Arabist scholarship. Moreover, his approach wandered too deep into history and egregiously abstracted from important recent historical developments that have been widely documented to have had a distinct and formative impact on institutions in the Arab world.

6. How Do Resource Rents Hinder Democratic Transitions

As our analysis corroborates and extends earlier literature on the central role of resource rents in hindering democratic transitions, especially oil for the case of the Arab world, the natural consequent question to ask is how this phenomenon happens?

This requires identifying "causal" links or intervening variables between resource rents and the "halting" of democratic transitions. The received cross-country literature identifies several such variables reflecting authoritarian bargain effects (Ross, 2009; Desai et al, 2009; Ali and Elbadawi, 2012; political repression (Ross, 2009); and corruption (Fish, 2005). Other factors, widely discussed in the literature, are those associated with external power interventions in support of resource rich authoritarian regimes (e.g. arms sales, foreign aid, and outright military interventions …etc.) However, while shown to be highly relevant to the Arab world in the case study literature[20], these plausible causative channels were not found to be significant in the empirical cross-country literature, mainly due to the difficulty of constructing good cross-country empirical proxies to account for them[21]. Moreover, external and domestic wars, including the long-standing Arab-Israeli conflict, might also be among the causative mechanisms, provided that they can be linked to the presence of natural resource rents. Of course, as our results suggest, conflicts are impediments to democratization on their own right regardless of whether natural resources exist or not.

The other set of potential causative factors associated with the corrosive impact of resource rents on democracy, especially with regard to the Arab world, has centered on the social aspects of modernization, such as female labor force participation, fertility …etc. However, the whole cultural-societal approach to explaining the lackluster performance of democracy in the Arab world and other lagging regions has been widely criticized in the vast polemical social science and historical literature as not being relevant (e.g. see El-Affendi, 2011, for an extensive review). Moreover, perhaps due to the poor data quality, Ross (2009) for example, could not find robust cross-country evidence linking social modernization to the impact of oil rents on democratic transitions.

Subscribing to the above discussion, we consider four potential causative mechanisms: the employment effect, as an instrument for the rentier-authoritarian bargain strategy; the

[20] See for example, the Arab countries case studies included in Elbadawi and Makdisi (2011).

[21] For example, Ross (2009) fails to find significant impact for most of the intervening instruments he considers in the context of his cross-country study such as repression, social modernization, foreign support and corruption.

political repression effect; and 'positive' and 'negative' externalities, respectively, associated with neighborhood democracies and neighborhood conflicts. These four, we would argue, are the most important mechanisms from the perspective of the Arab world.

The rentier-authoritarian bargain effect: the employment channel. Recent game theoretic literature links large public sector employment, financed by the resource rents, to an authoritarian bargain extended by the ruling autocratic elites in their attempt to evade a revolution by the population (e.g. Ali and Elbadawi, 2012). Similarly other work in this literature models economic transfers and political influence as joint outcomes of non-democratic politics in resource rich-economies (e.g. Desai, Olofsgard and Yousef, 2009). These authors use their theoretical model to motivate a simultaneous system for the joint estimation of "welfare", the empirical proxy for the authoritarian bargain; and Polity, the proxy for political rights. They measure welfare by total social spending on education, health, housing, unemployment benefits, pensions…etc.

Subscribing to the above theoretical literature, and drawing on the country evidence regarding the frequent incidence of political regime instability in high unemployment developing countries, including resource-rich ones, we ask the question as to whether resource rents are less effective in halting transition to democracy in high unemployment economies. We formally test for this potential unemployment effect in regressions 23 & 24 (of Table 8), where we control for both the linear and quadratic unemployment effects in an extended model, based on regression 3 (of Table 3). By introducing unemployment to the threshold-based rentier model, three important results obtain. First, the resource rents effect was no longer significant for the cases of the low and middle quartile resource-dependent groups (Resource Rents_Q1 & Q2-3). Second, unlike the lower levels, the resource rents effect for the high resource-dependent group (Resource Rents_Q4) remains highly negative and significant, despite controlling for unemployment. Third, unemployment enters with highly significant and non-monotonic effect (regression 10). According to these estimates, unemployment rates higher than the threshold of about 10% {approximately equal to (-82.6/2 x 427.5)100%} promotes democratic transition.

It is interesting to note that the unemployment story in the Arab world perfectly reflects the dichotomy between the highly resource endowed GCC and other lower resource-dependent Arab countries. For example, during 2000-09 unemployment was very low in the GCC (4% in UAE; 0.5 in Qatar and 5.6 in Saudi Arabia), which was well below the 10% threshold level. Instead, it reached more than 16% in Algeria and more than 10% in Egypt, Morocco, Syria and Tunisia. Even compared to other regions, only East Asia managed to achieve comparable rates to that of the GCC (Table 9). However, the key difference is that unlike the former, the GCC countries rely primarily on oil-financed public sector employment to absorb the rising number of their national working age population (Ali and Elbadawi, 2012).

The above evidence can be reformulated in the following two succinct hypotheses:

H9: high *unemployment*, beyond a certain threshold (**U> 10%**), *promotes* democratic transitions

H10: However, employment *does not fully* account for the authoritarian bargain in the highly resource endowed societies

These findings (hypotheses) could be interpreted in the context of the above reviewed game theoretic literature as suggesting that, for most resource-dependent countries, the resource rents can only be an effective hindrance to democratic transition in a *functioning* authoritarian bargain, when they are used to create employment opportunities in undemocratic societies. However, because resource-dependent economies are likely to suffer from the consequences of the Dutch disease that limits the capacity of the private sector to generate enough jobs in the non-resource sectors, the brunt of the employment expansion had to be provided by the public sector. As the country and regional unemployment data suggests (Table 9), only ruling elites in highly resource-endowed societies have control over high enough resources to allow the financing of such a process for the longer-term. In fact at the theoretical level, Ali and Elbadawi (2012) argue that autocratic elites in lower resource-endowed societies might have a higher preference for political repression as an alternative strategy for remaining in power (see further discussion below).

Moreover, the above (ex-post) hypotheses also suggest that the authoritarian bargain would continue to hold in high resource-rich societies even under high unemployment. This finding could be explained by the fact that the incumbent elites in highly endowed societies have enough resources at their disposal to still promote social welfare through other means, such as direct cash transfers, generous pension programs, subsidized mortgage loans …etc.

Therefore, the unemployment channel, we would argue, is particularly relevant to explaining recent Arab democratic revolutions in the low to medium resource-endowed countries, such as Egypt, Tunisia and Yemen; those in the making, such as Syria; or that are ripe for change, such as Algeria and Sudan. Instead, the relatively low unemployment, among other social welfare programs, is also relevant for explaining why the Arab Spring is yet to reach the GCC, and may not do so for some time to come.

The political repression effect. As discussed above, the incumbent autocratic elites in resource-rich countries would use the resource rents to expand employment and general social welfare of their citizens in their attempt to remain in power in lieu of extending the franchise. However, the elites are not likely to adopt a pure public sector employment strategy, as they might also find it necessary to use their resource rents to build an apparatus of political repression for pre-empting or quelling incipient or unfolding revolt.

There is ample evidence on the large shares of the budgets in authoritarian oil and other resource-rich countries devoted to military and security spending. However, such spending might also reflect other considerations, such as external threats. To avoid this ambiguity we follow Ross (2009) by using a direct measure of government repression, available in the recently developed Cingranelli-Richards dataset (2008). This measure, called *Physical Integrity Rights*, constructs an annual variable that ranges from 0 (repression free) to 1 (worst repression) and accounts for the incidence of torture, extrajudicial killing, political imprisonment, and disappearances that are attributable to the government[22].

[22] The original index is decreasing in the degree of repression, where the most repressive cases are coded as 0; while the repression free cases receives a code equal to 8. For ease of exposition we inverted and

We formally test for the political repression effect in regressions 25 (of Table 8) by including the index of political repression in the threshold-based rentier model, where we distinguish between degrees of political repression, constructed as three quartile-based sub-indexes:

- Political Repression_Q1 = Physical Integrity Rights index * DumQ1
- Political Repression_Q2-3 = Physical Integrity Rights index * DumQ2-3
- Political Repression_Q4 = Physical Integrity Rights index * DumQ4

Where, the dummy variables are as defined before.

We find that both moderate and, especially, high political repression are negatively and significantly associated with democratic transitions. We also find that the resource rents effect was no longer significant for the cases of the low and middle quartile resource-dependent groups, though as for the case of unemployment the resource rents effect for the high resource-dependent group remains highly negative and significant. As we have consistently done in this paper, we present these findings in terms of the following two ex-post hypotheses:

H11: Medium to high degree of *political repression* ***impedes*** democratic transitions

H12: However, political repression ***does not*** account for the rents effects in highly resource endowed societies

We interpret the above findings to suggest that in high resource but population scarce countries the elites are likely to rely more on expanding public employment and less on political repression. Instead, our results suggest that the opposite is likely to happen in moderately endowed but populous countries. The Gulf Cooperation Council (GCC) member countries provide the most notable example of the former, while the other oil-rich but populous Arab economies epitomize the latter.

First, according to data analyzed by Ali and Elabadwi (2012), the median oil rent per capita in the GCC during 2000-2007 stood at an annual average of $11, 898 (in real PPP dollars), which is more than 20 times the average rent for the median country from the populous Arab oil economies. In a similar vein, the median annual public sector wage bill per capita in the GCC, about $ 6000 (in real PPP dollars), was 15 times the wage for the populous Arab oil economies.

Second, the cross country data on the 'physical integrity rights' reveals that the resource rich countries are among the leading repressive groups. However, again as in the case of unemployment there is a significant difference between the highly endowed and the other lower resource-dependent countries. For example, during 2005-09 the GCC group had a median score of only 0.29, which is only second to the developed country score of 0.18. On the other hand, the median populous oil-dependent Arab country scored 0.69, thus constituting the closet region to the scale of 1 (worst degree of repression). The other resource-dependent region of Southern & Central Asia, with a median index at 0.63, also came close to the worst repression level (Figure 5).

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rescaled the variables so that it is increasing in the degree of repression and is contained in the [0,1] interval.

Our findings on employment and political repressions in the context of the contrast between the GCC and the other moderately endowed Arab oil-dependent countries suggest two fundamental conclusions. First, it is clear that ruling autocratic elites in resource rich societies might rely upon political repression only as a supplementary means to forestall democratic transitions. Second, political repression is also likely to be a less efficient strategy for fending off democratic transitions than policies promoting public employment. In this context, it is pertinent to stress the fact that, while populous oil Arab group has been susceptible to democratic regime change, especially in the context of the ongoing Arab democracy wave, the GCC countries seem to be relatively unaffected so far. However, we will explore next whether or not neighborhood democracy or peaceful resolution of regional wars, such as the Arab-Israeli conflict, might generate region-wide externalities that might affect the GCC groups as well.

The regional externality channels: democracy and peace. Recent literature suggests that regional neighborhood and international developments might exert external influence on the domestic democratic discourse of a country. In this context it has been argued that these externalities can influence the balance of power between actors in a society; realign their evaluation of payoffs and context strategies; and possibly ultimately lead to institutional change (e.g. Gleditsch and Ward, 2006). And, they present evidence to support their argument, where in a democratic transition model they find that regional (as well international) democracy promotes the process of democratization at the country level whereas a country located in a war-affected (in other words, non-peaceful) region is less likely to become democratic. In the same vein, Elbadawi et al (2011) find neighborhood democracy to be robustly and positively associated with the Polity index of democracy.

The observed patterns of democratization across the developing world suggests that transitions have happened in the form of regional diffusion processes, as reflected in the various democracy waves. The Arab world, of course has, until the current uprisings, provided an example of a 'reverse' diffusion where over most of the last half century autocracy did not only consolidate but also spread through the reversal of some unstable Arab democracies.

So what are the factors at work that have pitted the Arab world against almost all other developing regions (Table 1)?

As discussed, a non-democratic neighborhood is one key factor behind the autocratic diffusion that impacted the Arab world. Another is the prevalence of conflictive (non-peaceful) neighborhood (Table 2). The most damaging aspect of the conflicts that impacted the Arab world is that they tend to be non-localized and have strong regional, even global, implications. In particular, the lingering Arab Israeli conflict has swept the entire post-independence Arab world into a popular political culture of 'resistance' to the occupation of Palestinian and Arab land. This, it has been argued, had allowed autocratic Arab regimes to fashion a potent, even popular, brand of authoritarian Arab nationalism that ruled supreme for more than three decades[23]. And by the turn of the 1980s when the 'resistance' case for non-democratization started to run out of steam, several autocratic

[23] See the collection of papers in Elbadawi and Makdisi (2011) for a review of the debates on these issues and for analysis of several case study experiences.

regimes have tried to re-habilitate themselves by switching to the cause of fighting terrorism and Islamic fundamentalism. Again this new authoritarian brand provided these regimes with a new argument as well as support from powerful external powers.

We test for the potential causative influence of neighborhood democracy on the transition impact of resource rents through regression 26 of Table 10, which is an extension of the threshold model of regression 7 (of Table 4). Likewise we test for the role of neighborhood wars through regression 27 of Table 10. We define 'neighborhood democracy' as the average polity for a country's immediate neighbors. In coding neighbor polity, note that island countries do not have neighbors. Since a missing variable would drop all island countries from the sample, the relevant question is: how should neighbor polity be coded for island countries? To avoid this issue, the average world polity per annum is calculated and the world is used as a neighbor to all countries, ensuring that every country has at least one neighbor. The average for the period is then calculated for the country and lagged to measure neighbor polity effect: (Median Neighbor $Polity_{t-1}$). Similarly, the 'neighborhood wars' variable is constructed in the same fashion as the average of the 'home wars' index for the immediate neighbors of a country. In turn, as described in Table 2, the home war for a given country year is coded as 1 if the country was involved in civil, regional or international war in that year; and 0 otherwise.

We find that neighborhood democracy enters positively and highly significantly (at 1% significance level). Moreover, very importantly, all the threshold effects of the resource rents are now highly insignificant, including that of the upper quartile range of the rents. On the other hand, the neighborhood wars effect was only moderately (at 10% significance level) and negatively associated with democratic transitions. Nonetheless, it is pertinent to note that the estimated neighborhood effect was obtained despite that we also control for the domestic war effect, which was also negative and only moderately significant. This suggests the presence of possible multicollinearity between the two variables. Moreover, though accounting for the neighborhood war effect weakens both the significance and the quantitative impact of the high resource rents effect, the latter continues to be a hindrance to democratic transition, albeit at only moderate level of significance (at 10%).

We recast the above findings in terms of the following four hypotheses:

H13: Neighborhood democracy ***promotes*** democratic transitions

H14: Moreover, resource rent is ***not a constraint*** to democratic transition in democratic neighborhood

H15: Neighborhood wars ***impede*** democratic transitions, even when controlling for the effect of home wars

H16: Moreover, neighborhood wars do not fully explain the resource rents effect, as high resource rents ***remain impediment*** to democratic transition in war-affected neighborhoods

The first two hypotheses (H13 & 14) suggest that, should the current Arab uprising expand and consolidate it will generate an increasing positive neighborhood externality, that eventually would trump the currently dominant resource endowment effect in the highly endowed societies, which has so far shielded the GCC countries for the spread of

the Arab Spring. However, this might take time, depending on how the neighborhood effect scales up. And, despite being based on less compelling evidence, nevertheless, the remaining two hypotheses (H15 & 16) could also be interpreted as suggesting that, should the various wars and other violent conflicts afflicting the Arab world be addressed, including reaching a just and sustainable resolution of the Arab-Israeli conflict, the region would likely to become more democratic. Moreover, in a peaceful Arab region oil would also be less of a hindrance to democracy.

7. Conclusions

In an earlier work (Elbadawi and Makdisi, 2011) it was amply demonstrated that the interlocking of oil wealth and regional conflicts rendered the Arab region less attuned to the democratization process despite the notable socio-economic development it had achieved in the past five decades. Admittedly the effects of these factors, which varied from one country to another, did not stand alone in explaining the persistence of autocracies in various Arab countries. However, they remained dominant explanatory factors of the entrenched democracy deficit in the Arab region as a whole, until the Tunisian uprising of December 2010 and the subsequent ones elsewhere in the Arab region forced a new political trajectory, namely the beginning of the transition from autocratic to democratic forms of governance.

This paper analyzes the factors that underlie this transition. We code 'democratic transitions' as a multi-year phenomenon, which allows for the likely possibility that during the transition phase a country's Polity score might experience some setback in a year or more while pursuing a rising multi-year democratic trend. This concept of transition, we would argue, is more appropriate than the year-on-year measures used in most of the received literature. Moreover, while controlling for the benchmark modernization determinants, this paper's model allows assessing the marginal impacts of resources rents, home wars and the status of being a partial democracy through testing for eight fundamental hypotheses associated with the above key factors. Moreover, we subsequently tested eight more hypotheses on the causative mechanisms related to the natural resource rents effects on democratic transitions.

The model was estimated using 449 5-years country periods and subsequently subjected to three types of robustness checks accounting for the choice of longer duration of democratic transitions (from 5 to 10 years periods); the potential effect of the demise of the Soviet Union in 1990s; and the whether the Arab war effect is influenced by any one particular method of coding. The key findings are summarized below.

First, we confirm a baseline result from the received literature, in that natural resources impede democratic transitions. Moreover, the resource rents effect fully accounts for other country-specific idiosyncratic factors that might be associated with the resource-dependent regions, as reflected in the non-significance of the sub-regional dummies for the GCC and the populous oil-dependent Arab countries as well as the regional dummy for the other resource-dependent South and Central Asia.

Second, we also find that the resource rent hinders democratic transition only when managed by less than fully democratic regimes, such as autocracies or partial democracies.

Third, however, the effect of the resource rents is subject to threshold effects, where the resource rents appear to be a robust deterrent to democratization only in those societies endowed with high enough resource per capita (those that belong to the top quartile range in the sample).

Fourth, we corroborate the hypotheses that home wars hinders democratic transitions and that they also fully explain the war-prone non-oil Arab sub-regional effect.

Fifth, as recently discussed in the literature, we are able to corroborate the thesis that partial democracies are more susceptible to democratic transitions than do autocracies, though this finding does not withstand our robustness checks. Nevertheless, given the high frequency of transitions in partial democracies and the strong theoretical argument associating this phenomenon with this type of polity, we believe that the results of the robustness checks might be influenced by multicollinearity due to the smaller samples used for robustness checks.

Next we ask the question as to how the resource rents might impede democratic transitions. To address this issue we consider four potential causative mechanisms that we deem to be the most important from the perspective of the Arab world. These are the employment effect, as an instrument for the rentier-authoritarian bargain strategy; the political repression effect; and 'positive' and 'negative' externalities, respectively, associated with neighborhood democracies and neighborhood conflicts. Empirically we test for whether the inclusion of these variables, one at a time, would render the resource rents insignificant as determinants of democratic transitions. Our results suggest the following further conclusions.

Sixth, high unemployment, beyond a certain threshold (about 10% or more) tends to promote democratic transitions, suggesting the failure of the authoritarian bargain. However, unemployment does not fully account for the resource effect in the highly resource endowed societies, perhaps because the ruling elites in this case are able to provide others forms of transfers beyond the provision of public sector employment.

Seventh, medium to high political repression impedes democratic transitions, though again it does not fully account for the rents effect in the highly resource endowed societies. This suggests that for the ruling elites in the latter group political repression is not an efficient strategy. Instead direct resource transfer is the strategy of choice; while in the less endowed societies political repression might be unavoidable for lack of the better alternative in terms of resource transfers.

Eighth, societies located in democratic neighborhood tend to be more susceptible to democratic transition. Moreover, resource rents ceases to be a constraint to democratic transition in democratic regions, even for highly resource endowed societies. This suggests that, should the current Arab Spring swell into a major regional phenomena, it might have much stronger effects even in the highly resource endowed GCC societies that have so far remained unaffected.

Finally, regional wars impede democratic transitions and further reinforce the corrosive effects of resource rents on democratization. Therefore, we strongly corroborate the widely held view that major regional Arab wars, most notably the Arab Israeli conflicts, constitute a hindrance to democracy in the Arab world.

To recapitulate: we submit that the findings gleaned from this paper's analysis provide a promising initial analytic framework for understanding the potential dynamics involving transitions towards democratic governance in some countries of the Arab region as well as limitations that continue to prevent, at least for the foreseeable future, a genuine democratic transformation in other Arab countries.

We acknowledge, however, that this framework may be further refined and nuanced by accounting for additional factors including , among others, past experiences with democracy, the role and strategies of the middle class, the formation of coalitions among social groups …etc. Linking these shifting correlates to some of the benchmark results of this paper, such as the non-monotonic effect of unemployment on democratic transition, should be a promising strategy for future research.

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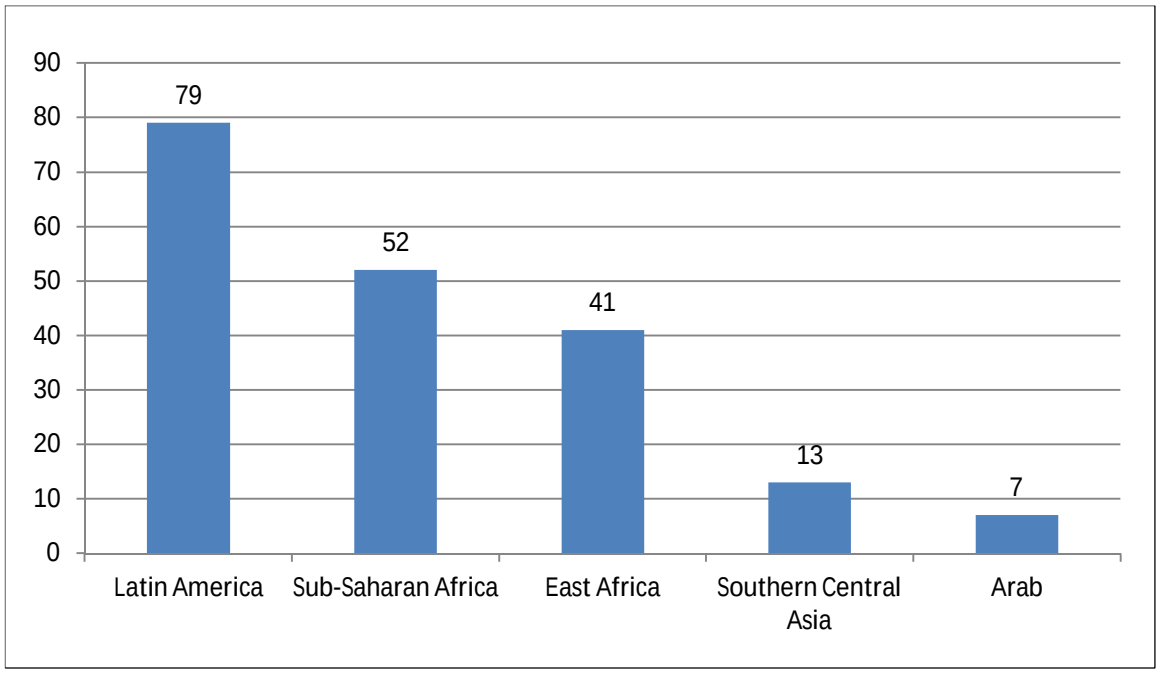
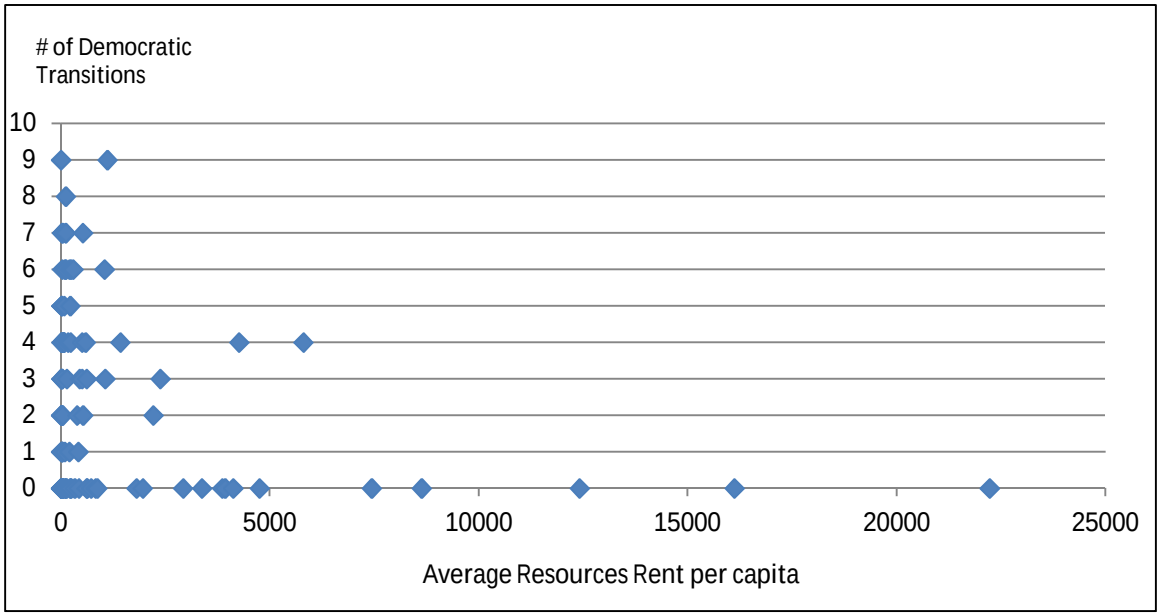
Figure 1: Frequency of 'Sustainable' Democratic Transition in Developing Regions (1960-2009)



Source: authors calculation based on Polity IV index

Figure 2: Resource Rents and democratic Transitions (1960-2009)



Notes: The x-axis: country's average resource rents per capita during 1960-2009. The y-axis: # of democratic transitions in 1960-2009 per country

Figure 3: Average Resources Rent per Capita (2005-2009)

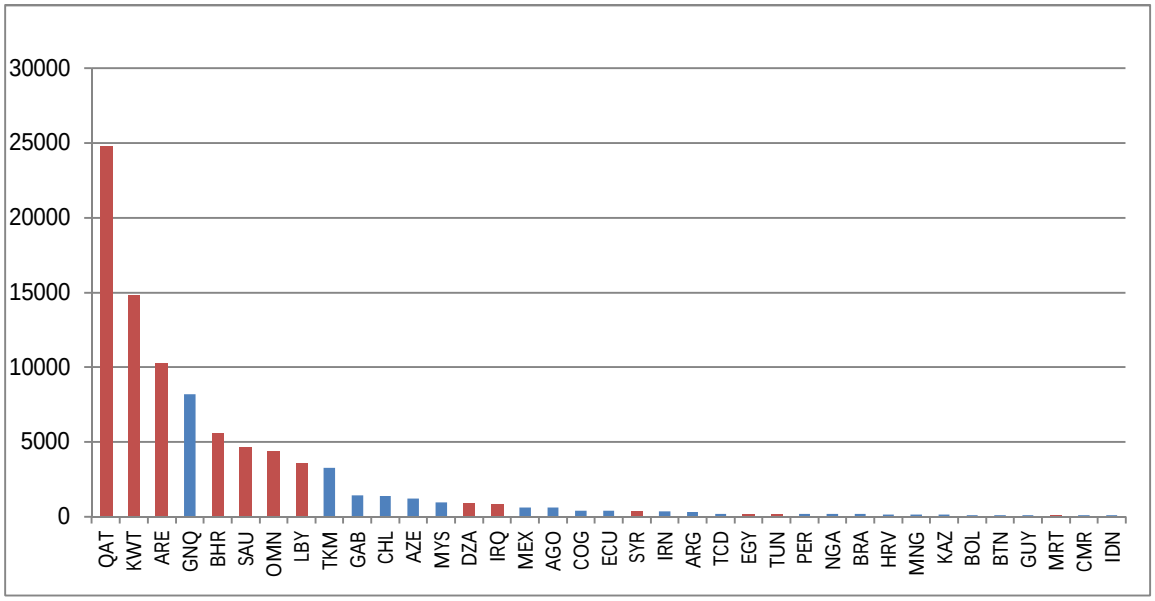


Figure 4: The Sum of Transitions to Authoritarianism (STRA) (1960-2009)

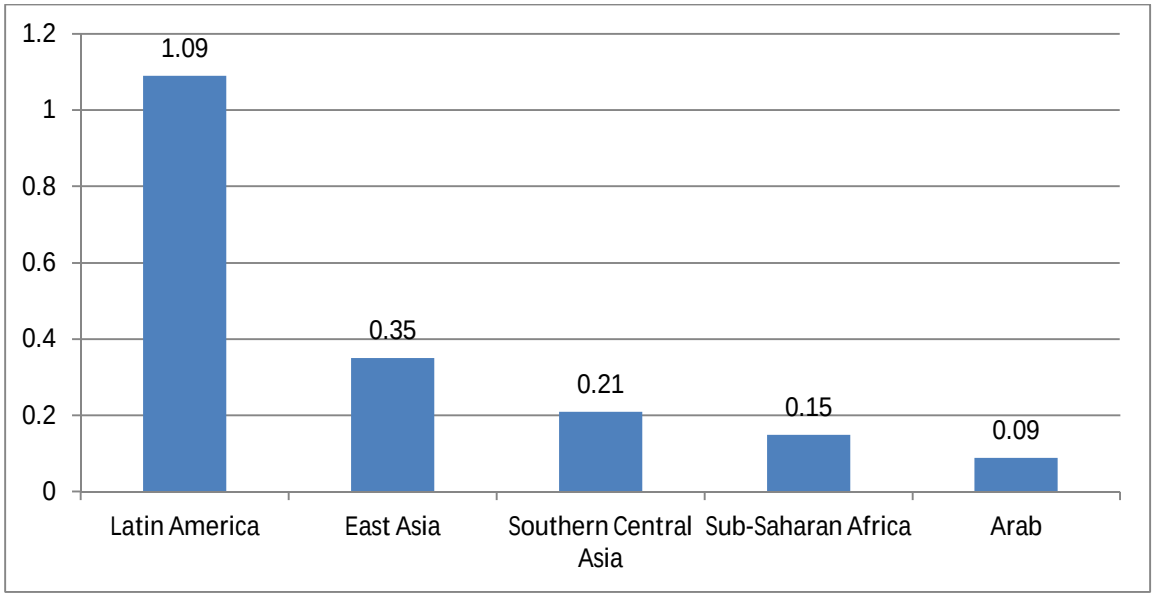


Figure 5: Political Repression by Region (2005-2009)

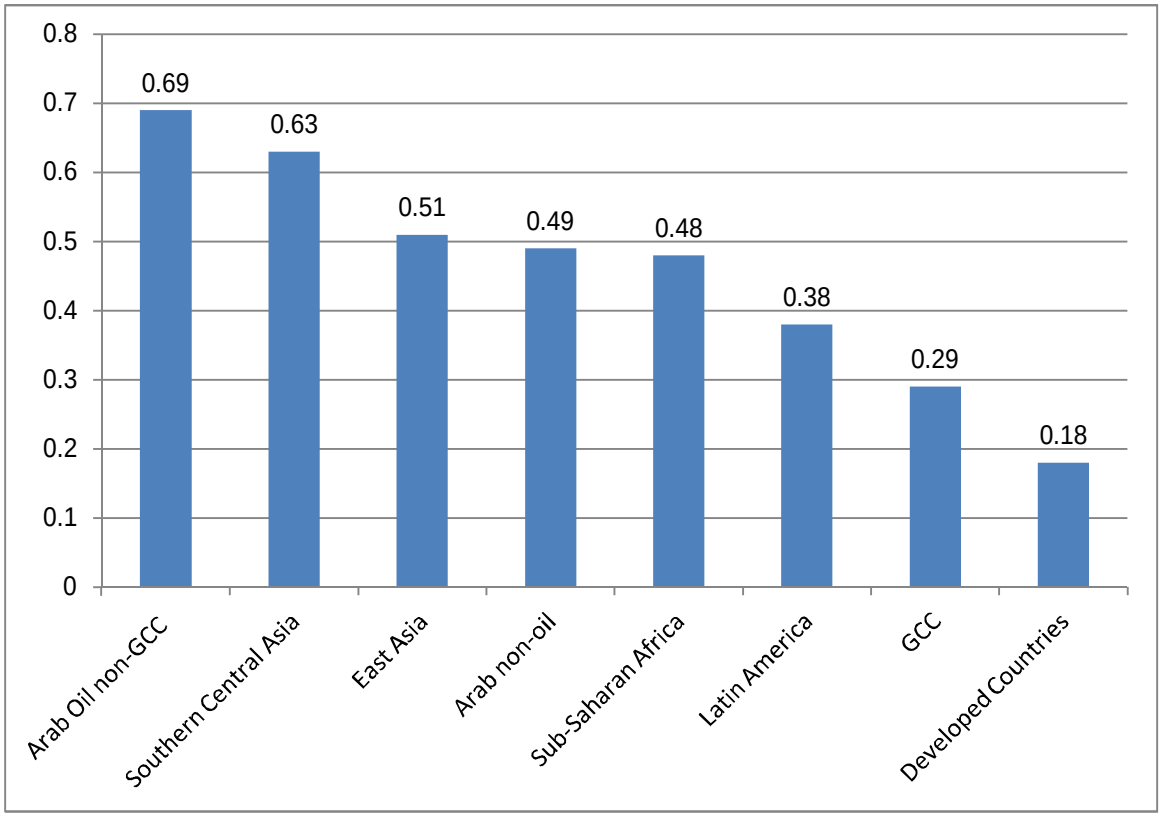


Figure 6: Total battle Death in Arab Civil Wars in 1960-2009 (weighted by distance from the country of violence)

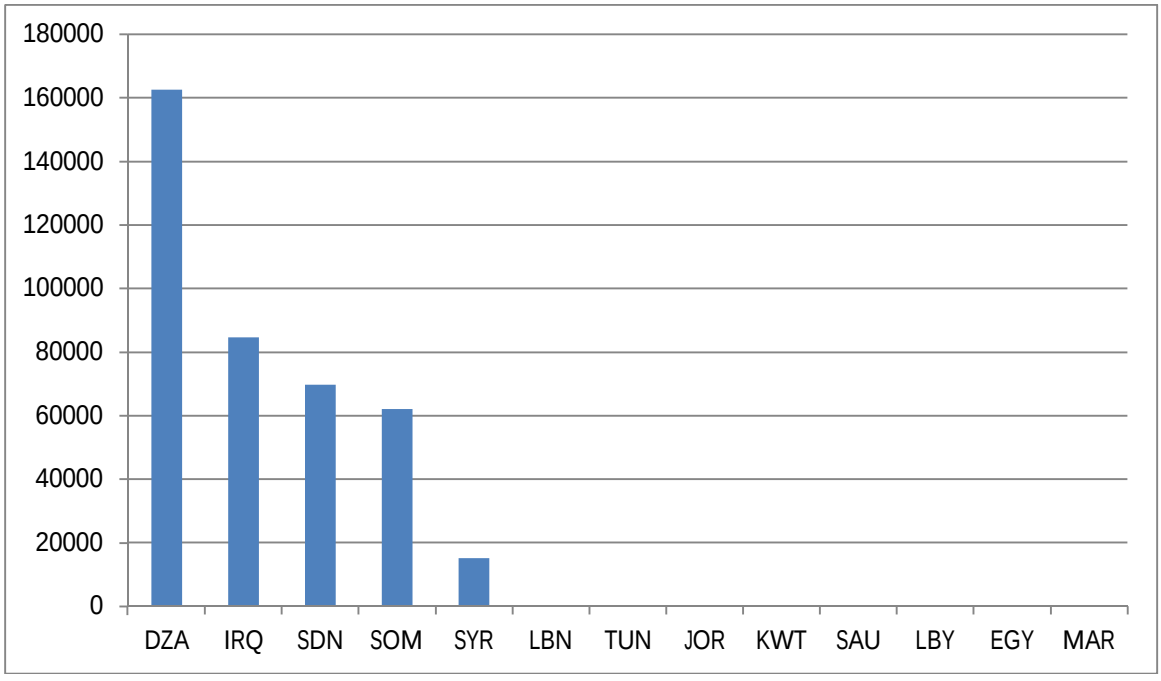


Figure 7: Total battle Death in Arab International Wars in 1960-2009 (Weighted by distance from the country of violence)

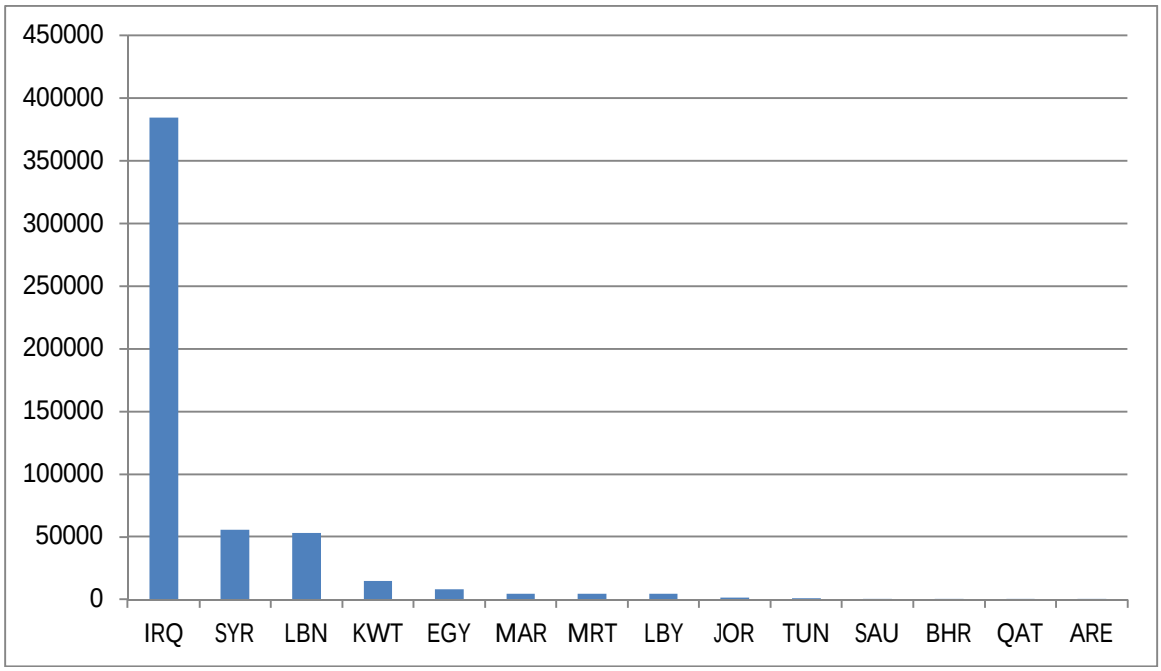


Figure 8: Total battle Death in Arab-Israeli Wars in 1960-2009 (Weighted by distance from the country of violence)

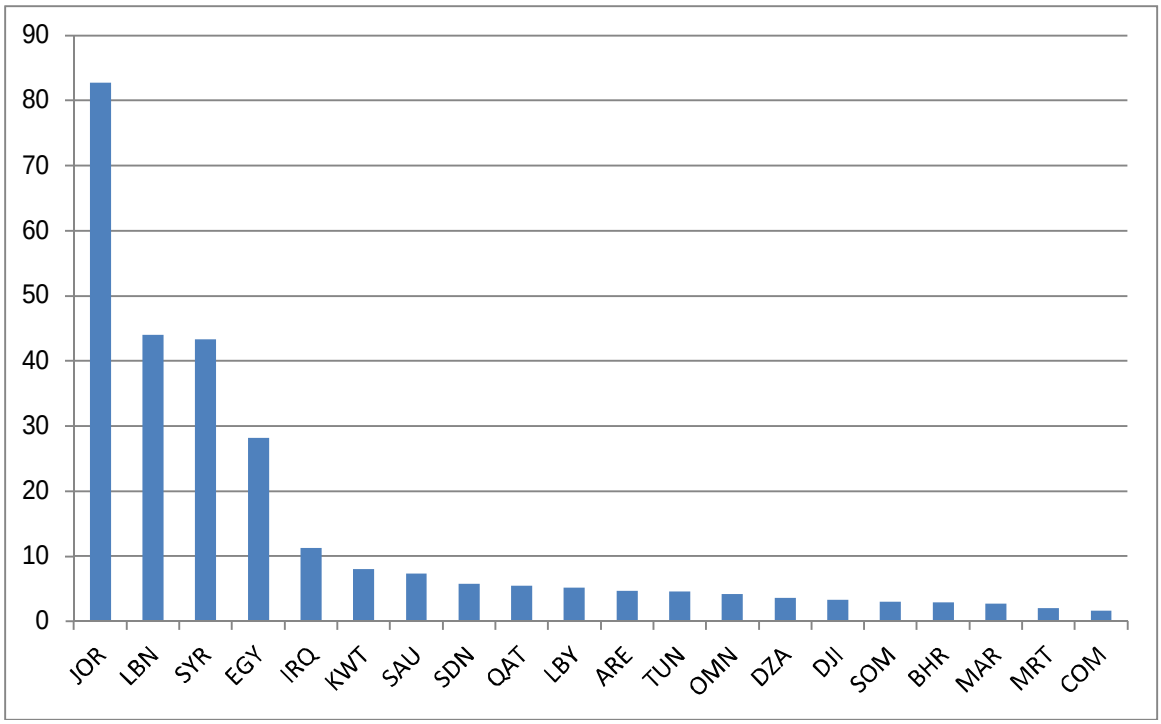


Figure 9: Total Battle Death in Major Arab Wars in 1960-2009 (Weighted by distance from the country of violence)

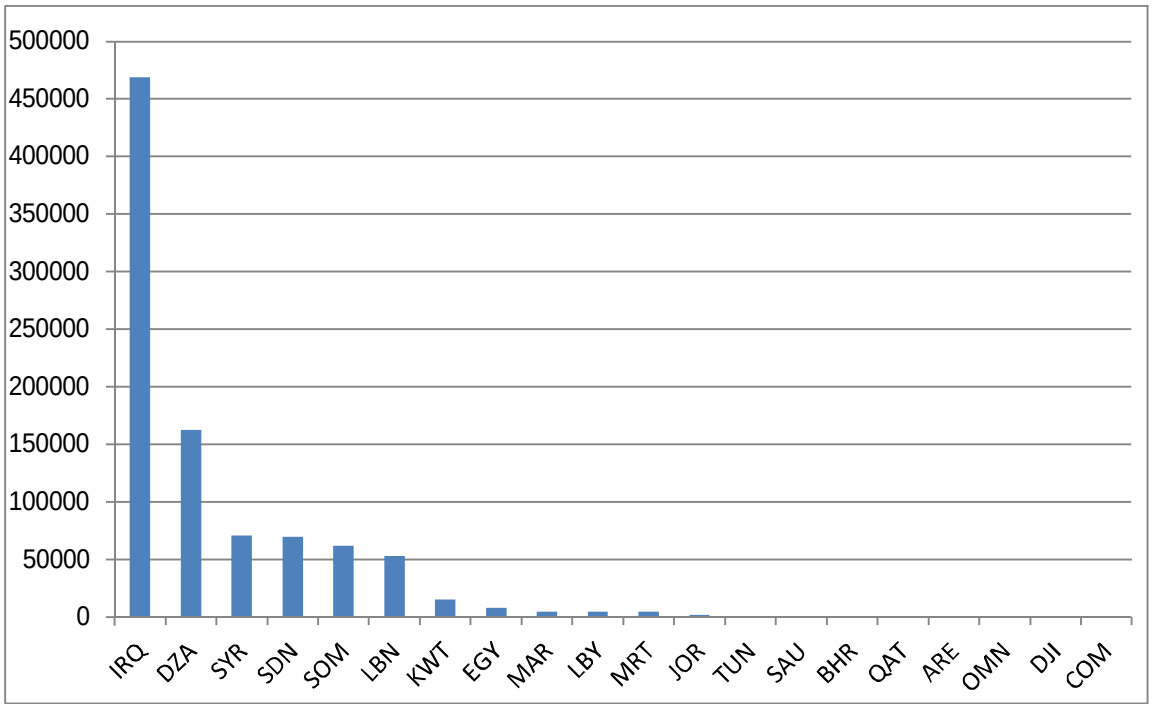


Table 1: Democracy across the Developing World

	1960-64	1965-69	1970-74	1975-80	1981-84	1985-90	1991-94	1995-99	2000-04	2005-09
Arab	-7	-7	-8.35	-8.4	-8.2	-8	-7.4	-7	-6.7	-4
Sub-Saharan Africa	-6	-6.6	-7	-7	-7	-7	-5.4	-1.5	0	2.5
Latin America	-1.7	-2.6	-6	-6	-4	3	6	7	8	8
Southern Central Asia	-9.4	-8	-8	-7.4	-6	-5.7	-3	-3.8	-5.2	-2.25
East Asia	-6	-6.4	-4.8	-7	-7	-2	2.5	1.4	4.125	2.25

Table 2: Average Number of Wars (1960-1999)

	1960-69	1970-79	1980-89	1990-99	Average
Arab					
Homewar	4.5	5.5	5.5	5	**5.1**
Neighbor war	6.5	10	9	10.5	**9**
Sub-Saharan Africa					
Homewar	2	6.5	8	9	**6.4**
Neighbor war	10.5	18	22.5	22	**18.3**
Latin America					
Homewar	2.5	3	5.5	4	**3.8**
Neighbor war	5	7	14	12	**9.5**
Southern & Central Asia					
Homewar	1.5	2	3	3	**2.4**
Neighbor war	2.5	2.5	3	4	**3**
East Asia					
Homewar	2	3	5	3.5	**3.4**
Neighbor war	2	5.5	6.5	6.5	**5.1**

Table 3: Probability of Democratic Transition- An Extended Rentier Model

Variable	Random Effect Probit [1] Coefficient	*Z*	Random Effect Probit [2] Coefficient	*Z*	Random Effect Probit [3] Coefficient	Z	Random Effect Probit [4] Coefficient	*Z*
Log Real GDP per capita	-0.32	-0.72	-0.37	-0.82	-0.30	-0.66	-0.31	-0.90
Real GDP pc Growth	-10.41***	-3.34	-10.28***	-3.30	-9.85***	-3.16	-7.41**	-2.37
Log Rent per capita	-0.45***	-4.23	-0.45***	-4.17	-	-	-.035	-0.28
Log Rentpc* Dummy for Ploity less than 6	-	-	-	-	-	-	-0.45***	-6.32
Dum_25*Log Rentpc	-	-	-	-	-0.07	-0.28	-	-
Dum_25-75*Log Rentpc	-	-	-	-	-0.33**	-2.19	-	-
Dum_75*Log Rentpc	-	-	-	-	-0.38***	-3.41	-	-
STRA	1.81***	4.85	1.85***	4.90	1.81***	4.87	1.02***	3.29
ARAB	-7.04***	-3.83	-	-	-	-	-	-
GCC	-	-	-16.01	-0.00	-15.50	-0.00	-6.22	-0.03
Other Oil-Dependent Arab	-	-	-22.38	-0.00	-21.87	-0.00	-11.01	-0.03
Non-oil Arab	-	-	-6.43***	-3.55	-6.33***	-3.55	-4.78***	-3.31
SSA	-4.48***	-3.10	-4.57***	-3.13	-4.41***	-3.09	-3.50***	-2.95
LAC	-3.28***	-2.92	-3.35***	-2.95	-3.21***	-2.90	-2.58***	-2.76
SCA	-4.80***	-3.32	-4.86***	-3.33	-4.56***	-3.21	-3.78***	-3.08
EA	-3.02**	-2.35	-3.10**	-2.38	-2.94**	-2.32	-2.06**	-2.02
Constant	6.25	1.56	6.61	1.63	5.40	1.35	5.44	1.71
Observations	449	-	449	-	449	-	449	-
LR statistic	44.44	-	44.87	-	43.37	-	12.40	-
Value	0.000	-	0.000	-	0.000	-	0.000	-
Log Likelihood	-143.51	-	-142.80	-	-141.27	-	-120.83	-

Notes: 1. *: for $0.05 < \text{p-value} \leq 0.10$; **: for $0.01 < \text{p-value} \leq 0.05$; ***: for $\text{p-value} \leq 0.01$. 2. Definition of Regressors (Tables 3-5): Log Real GDP pc: natural logarithm of initial GDP per capita in each period. Real GDP_pc Growth Rate: Real GDP pc growth rate in each period. Ln Rentpc: Natural logarithm of resource rents per capita. Ln Rentpc* Ploity less than 6: interaction between Rent pc and the dummy for countries with initial polity below 6. Dum_25*Log Rentpc: interaction between Rent pc and a dummy variable for the lowest quartile of the same variable. Dum_25-75*Log Rentpc: interaction between Rent pc and a dummy variable for the two middle quartiles of the same variable. Dum_75*Log Rentpc: interaction between Rent pc and a dummy variable for the top quartile of the same variable. STRA: sum of transitions from democratic to authoritarian regimes during the period. Log Real GDP pc: natural logarithm of initial GDP per capita in each period. Real GDP_pc Growth Rate: Real GDP pc growth rate in each period. Ln Rentpc: Natural logarithm of resource rents per capita. Arab: Dummy variable= 1 if country is in the Arab region, 0 otherwise. GCC: Dummy variable= 1 if country is a member of the Gulf Cooperation Council of the Arab region, 0 otherwise. Other Oil-dependent Arab: Dummy variable= 1 for non-GCC oil-producing Arab countries, 0 otherwise. Non-oil Arab: Dummy variable= 1 for non-oil Arab countries, 0 otherwise. SSA: Dummy variable= 1 if country is in Sub-Saharan Africa, 0 otherwise. LAC: Dummy variable= 1 if country is in Latin America & the Caribbean, 0 otherwise. SCA: Dummy variable= 1 if country is in Southern Central Asia , 0 otherwise. EA: Dummy variable= 1 if country is in East Asia, 0 otherwise. Partial Democracy: Polity multiplied by a dummy for Partial Democracy, where the latter= 1 if Polity falls in the closed interval [1,8]. Home war: dummy that equals 1 if a country experience civil or external wars during the period; 0 elsewhere. Unemployment rate (source ILO): the number of unemployed divided by the labor force (employment + unemployment). Political Repress_25: Political Repression index multiplied by a dummy for countries in the lowest quartile of political repression distribution (where the index of Political Repression is increasing in the degree of repression and ranges between 0 (repression free) to 1 (most repressive)). Political Repress_25-75: Political Repression index multiplied by a dummy for countries in the two middle quartiles of political repression distribution. Political Repress_75: Political Repression index multiplied by a dummy for countries in the top quartile of political repression distribution.

Table 4: Probability of Democratic Transition- Partial Democracy & Home War

Variable	Random Effect Probit [5] Coefficient	*Z*	Random Effect Probit [6] Coefficient	Z	Random Effect Probit [7] Coefficient	*Z*	Random Effect Probit [8] Coefficient	*Z*
Log Real GDP per capita	-0.02	-0.03	0.08	0.19	0.08	0.17	0.07	0.20
Real GDP pc Growth	-14.23***	-3.00	-10.97**	-2.39	-13.10***	-2.83	-9.27**	-2.16
Log Rent per capita	-	-	0.04	0.29	-	-	0.05	0.42
Log Rentpc* Dummy for Ploity less than 6	-	-	-0.50***	-5.08	-	-	-0.53***	-5.49
Dum_25*Log Rentpc	-0.11	-0.32	-	-	-0.02	-0.05	-	-
Dum_25-75*Log Rentpc	-0.29	-1.35	-	-	-0.21	-0.94	-	-
Dum_75*Log Rentpc	-0.31**	-2.10	-	-	-0.30**	-2.08	-	-
STRA	1.66***	3.14	0.63*	1.88	1.75***	3.35	0.50	1.61
GCC	-12.07	-0.01	-7.60	-0.01	-	-	-	-
Other Oil-Dependent Arab	-14.44	-0.02	-8.78	-0.01	-	-	-	-
Non-oil Arab	-13.65	-0.02	-10.21	-0.02	-13.69	-0.00	-8.81	-0.01
SSA	-4.73**	-2.51	-3.50**	-2.34	-1.88	-1.53	-1.94**	-2.11
LAC	-3.53**	-2.31	-2.30*	-1.90	-0.98	-1.08	-0.75	-1.11
SCA	-3.34	-1.61	-1.94	-1.25	-0.39	-0.24	-0.42	-0.39
EA	-2.86*	-1.73	-1.43	-1.17	-0.38	-0.34	-0.20	-0.26
Partial_Democracy	-	-	-	-	0.98*	1.88	0.90*	1.92
Home war	-0.97*	-1.78	-1.23***	-2.56	-1.06*	-1.95	-1.38***	-2.95
Constant	3.97	0.81	3.01	0.81	0.06	0.01	1.54	0.56
Observations	331	-	331	-	331	-	331	-
LR statistic	20.09	-	5.34	-	22.64	-	3.61	-
Value	0.000	-	0.010	-	0.000	-	0.029	-
Log Likelihood	-95.67	-	-75.77	-	-103.10	-	-78.42	-

Table 5: Probability of Democratic Transition: Robustness Checks- 10-years Periods/Democratic Transitions

	Random Effect Probit [9]	Random Effect Probit [10]	Random Effect Probit [11]	Random Effect Probit [12]
Variable	**Coefficient (Z)**	**Coefficient (Z)**	**Coefficient (Z)**	**Coefficient (Z)**
Log GDP pc	1.15**	2.35***	1.44**	3.99***
	(2.43)	(3.03)	(2.53)	(6.39)
Real GDP_pc Growth Rate	-9.06**	-17.10**	-14.69**	-8.98
	(-2.11)	(-2.06)	(-2.35)	(-0.96)
Log_rent_pc	-0.42***	-	-0.09	-
	(-4.59)		(-1.03)	
Dum_25*Log Rent_pc	-	-0.59	-	-0.99
		(-1.08)		(-1.59)
Dum_25-75*Log Rent_pc	-	-0.52*	-	-0.73**
		(-1.88)		(-2.54)
Dum_75*Log Rent_pc	-	-0.35**	-	-0.56***
		(-2.21)		(-3.10)
Log Rent_pc* Ploity_below_6	-	-	-0.17**	-
			(-2.53)	
stra	2.16***	2.14***	1.10	3.53***
	(4.02)	(2.86)	(2.11)	(3.41)
Oil arab	-22.37	-26.29	-17.81	-
	(-0.00)	(-0.00)	(-0.00)	
Other arab	-6.36***	-24.53	-15.39	-
	(-3.52)	(-0.00)	(-0.00)	
ssa	-3.62***	-3.81**	-1.88	0.43
	(-2.82)	(-2.00)	(-1.59)	(0.31)
lta	-3.16***	-2.93*	-1.33	0.49
	(-2.79)	(-1.93)	(-1.34)	(0.28)
sca	-3.65***	1.49	1.03	7.44***
	(-2.88)	(0.60)	(0.72)	(3.87)
ea	-2.53*	-0.89	-0.10	4.07**
	(-1.93)	(-0.49)	(-0.10)	(2.58)
Partial Democracy	-	-	-	-2.63***
				(-3.01)
Homewar	-	-1.82*	-1.13	-1.43
		(-1.75)	(-1.59)	(-1.39)
Constant	-4.09	-12.48	-8.09	-27.69
	(-1.02)	(-1.89)	(-1.87)	(-5.36)
Observations	462	300	300	300
LR statistic	66.70	34.10	14.09	80.97
Value	0.000	0.000	0.000	0.000
Log Likelihood	-156.75	-90.93	-89.85	-101.93

Table 6: Probability of Democratic Transitions- Robustness Checks for Before and After the Demise of the Soviet Union

	Random Effect Probit [13]	Random Effect Probit [14]	Random Effect Probit [15]	Random Effect Probit [16]	Random Effect Probit [17]	Random Effect Probit [18]
Period	**1960-1989**	**1991-2009**	**1960-1989**	**1991-2009**	**1960-1989**	**1991-2009**
Variable	**Coefficient (Z)**	**Coefficient (Z)**	**Coefficient (Z)**	**Coefficient (Z)**	**Coefficient (Z)**	**Coefficient (Z)**
Log GDP pc	1.12	-0.57	4.00**	0.20	2.31**	0.55
	(0.95)	(-1.46)	(2.00)	(0.91)	(2.52)	(1.32)
Real GDP_pc Growth Rate	-23.68**	-3.29	-4.54	2.12	-17.59	14.83
	(-1.97)	(-0.83)	(-0.30)	(0.62)	(-1.47)	(1.52)
Log_rent_pc	-0.34	-0.25*	0.59	0.52***	-	-
	(-1.14)	(-1.77)	(0.88)	(3.50)		
Dum_25*Log Rent_pc	-	-	-	-	-0.23	-0.44
					(-0.21)	(-0.86)
Dum_25-75*Log Rent_pc	-	-	-	-	-0.26	-0.42
					(-0.46)	(-1.53)
Dum_75*Log Rent_pc	-	-	-	-	-0.68*	-0.55**
					(-1.87)	(-2.30)
Log Rent_pc* Ploity_below_6	-	-	-2.05**	-0.76***	-	-
			(-2.53)	(-6.12)		
stra	2.82***	1.10***	2.52	0.72***	4.76***	1.04**
	(3.03)	(2.83)	(1.52)	(3.39)	(5.29)	(2.59)
arab	-28.36	-12.91	-	-	-	-
	(-0.00)	(-0.00)				
ssa	-6.78**	-3.51**	-1.08	0.56	-0.28	0.22
	(-1.97)	(-2.55)	(-0.20)	(1.16)	(-0.14)	(0.31)
lta	-6.77**	-1.06	1.02	0.89	-2.05	1.51*
	(-2.25)	(-1.05)	(0.26)	(1.54)	(-0.96)	(1.92)
sca	-22.09	-3.55***	-	-0.12	-15.91	1.18
	(-0.01)	(-2.64)		(-0.23)	(-0.01)	(0.92)
ea	-3.85	-2.42**	3.99	1.06*	2.28	0.94
	(-1.19)	(-1.98)	(0.94)	(1.80)	(1.19)	(1.17)
Partial Democracy	-	-	-	-	0.31	-
					(0.19)	
Homewar	-	-	-	-	1.11	-2.54***
					(0.81)	(-2.73)
Constant	-3.90	6.78	-31.19	-2.39	-20.21	-3.51
	(-0.39)	(1.87)	(-1.85)	(-1.42)	(-2.73)	(-1.05)
Observations	183	188	183	188	178	78
LR statistic	29.43	4.86	19.21	1.7e-05	28.67	1.4e-14
Value	0.000	0.014	0.000	0.498	0.000	0.500
Log Likelihood	-32.12	-63.50	-26.35	-53.08	-36.39	-26.55

Table 7: Probability of Democratic Transition: Robustness Checks- The Arab Wars

	Random Effect Probit [15]		Random Effect Probit [16]		Random Effect Probit [17]		Random Effect Probit [18]	
Variable	**Coefficient**	**Z**	**Coefficient**	**Z**	**Coefficient**	**Z**	**Coefficient**	**Z**
Log Real GDP per capita	-0.28	-0.72	0.13	0.36	0.01	0.03	-0.27	-0.71
Real GDP pc Growth	-9.64***	-3.24	-8.86***	-2.99	-8.84***	-3.07	-9.35***	-3.20
Dum_25*Log Rentpc	-0.01	-0.05	0.003	0.01	0.05	0.22	0.002	0.01
Dum_25-75*Log Rentpc	-0.25*	-1.73	-0.23	-1.59	-0.20	-1.43	-0.24*	-1.66
Dum_75*Log Rentpc	-0.34***	-3.18	-0.34***	-3.13	-0.30***	-2.86	-0.32***	-3.06
STRA	1.61***	4.54	1.63***	4.45	1.44***	4.21	1.53***	4.49
Non-oil Arab	-2.82*	-1.88	-3.48**	-2.34	-2.89**	-1.98	-2.30	-1.46
SSA	-3.73***	-3.14	-1.92*	-1.96	-2.64***	-2.68	-3.78***	-3.22
LAC	-2.66***	-2.88	-1.31*	-1.69	-1.86**	-2.42	-2.69***	-2.95
SCA	-3.95***	-3.26	-2.42**	-2.34	-3.00***	-2.95	-3.97***	-3.34
EA	-2.46**	-2.33	-0.93	-1.00	-1.61*	-1.77	-2.54**	-2.43
Partial_Democracy	0.62**	2.10	0.65**	2.22	0.66**	2.33	0.64**	2.21
Ln CivilWars_bddist$_{-1}$	-0.95***	-2.90	-	-	-	-	-	-
Ln IntArabWars_bddist$_{-1}$	-	-	-0.30	-1.25	-	-	-	-
Ln ArabIsraelWars_bddist$_{-1}$	-	-	-	-	-9.55**	-2.05	-	-
Ln MajArabWars_bddist$_{-1}$	-	-	-	-	-	-	-0.89***	-2.83
Constant	4.44	1.29	-0.02	-0.01	1.48	0.49	4.43	1.31
Observations	449	-	449	-	449	-	449	-
LR statistic	32.04	-	34.60	-	26.89	-	30.02	-
Value	0.000	-	0.000	-	0.000	-	0.000	-
Log Likelihood	-141.06	-	-148.52	-	-145.12	-	-140.85	-

Notes: Definitions of Additional Regressors: Ln CivilWars_bddist$_{-1}$= lagged log of battle deaths from Arab civil wars in (1960 -2009), weighted by distance from the Arab countries directly involved in the conflicts. Ln IntArabWars_bddist$_{-1}$= lagged log of battle deaths from Arab international and regional wars in (1960 -2009), weighted by distance from the Arab countries directly involved in the conflicts. Ln ArabIsrealWars_bddist$_{-1}$= lagged log of battle deaths from Arab-Israeli wars in (1960 -2009), weighted by distance from the Arab countries directly involved in the conflicts. Ln MajArabWars_bddist$_{-1}$= lagged log of battle deaths from all major Arab wars in (1960 -2009), weighted by distance from the Arab countries directly involved in the conflicts.

Table 8: How Does Resource Rent Hinder Democratic Transitions-The Employment and Political Repression Channels

	Random Effect Probit [19]		Random Effect Probit [20]		Random Effect Probit [21]	
Variable	**Coefficient**	**Z**	**Coefficient**	***Z***	**Coefficient**	***Z***
Log Real GDP per capita	0.86	0.55	3.08***	3.04	-0.07	-0.20
Real GDP pc Growth	-29.51	-1.44	-32.52*	-1.84	-8.66*	-1.65
Dum_25*Log Rentpc	0.62	0.47	-	-	-0.27	-0.67
Dum_25-75*Log Rentpc	0.12	0.16	-	-	-0.30	-1.31
Dum_75*Log Rentpc	-1.42***	-2.71	-1.09***	-2.63	-0.39**	-2.55
STRA	4.93***	3.11	5.55***	4.25	0.76**	2.16
Non-oil Arab	-39.93	-0.00	-	-	-10.79	-0.00
SSA	-8.04	-1.44	-	-	-2.18**	-2.41
LAC	-2.52	-1.04	-	-	-0.16	-0.25
SCA	-6.29	-1.47	-	-	-0.27	-0.23
EA	-6.20	-1.50	-	-	-0.55	-0.71
Partial Democracy	-	-	-	-	1.01	1.95
Home War	-	-	-	-	-1.00*	-1.70
Unemployment rate	-79.18	-1.59	-82.62**	-2.10	-	-
Unemployment rate _sq	419.17**	2.06	427.48**	2.56	-	-
Political Repress_25	-	-	-	-	-4.27	-1.64
Political Repress_25_75	-	-	-	-	-1.88*	-1.80
Political Repression_75	-	-	-	-	-2.13**	-2.40
Constant	-0.84	-0.06	-20.82	-2.76	3.23	1.11
Observations	122	-	122	-	216	-
LR statistic	17.86	-	25.94	-	3.16	-
Value	0.000	-	0.000	-	0.038	-
Log Likelihood	-34.13	-	-36.86	-	-72.05	-

Table 9: Average Decadal Rate of Unemployment Rate by Region (2000-2009)

Arab	**8.94**
UAE	4.00
Qatar	0.52
Saudi Arabia	5.63
Algeria	16.60
Egypt	10.20
Morocco	10.12
Syria	10.13
Tunisia	14.38
Sub-Saharan Africa	**16.08**
Latin America	**9.26**
Southern Central Asia	**10.28**
East Asia	**4.88**

Table 10 : Probability of Democratic Transition- Neighborhood Effects

	Random Effect Probit [22]		Random Effect Probit [23]	
Variable	**Coefficient**	***Z***	**Coefficient**	**Z**
Log Real GDP per capita	0.06	0.16	-0.01	-0.03
Real GDP pc Growth	-9.98**	-2.33	-14.09***	-2.94
Dum_25*Log Rentpc	0.14	0.40	0.02	0.06
Dum_25-75*Log Rentpc	-0.07	-0.34	-0.20	-0.92
Dum_75*Log Rentpc	-0.13	-0.98	-0.27*	-1.84
STRA	1.30***	3.14	1.79***	3.30
Non-oil Arab	-9.40	-0.02	-16.35	-0.00
SSA	-1.21	-1.19	-1.79	-1.49
LAC	-1.73**	-2.11	-0.87	-0.98
SCA	-0.25	-0.18	-0.28	-0.17
EA	-0.33	-0.36	-0.31	-0.28
Partial_Democracy	1.03**	2.15	1.01*	1.94
Home war	-0.84*	-1.75	-0.97*	-1.77
Average Regional Polity	0.16***	2.85	-	-
Neighbor war	-	-	-0.71*	-1.79
Constant	-0.43	-0.13	0.93	0.24
Observations	323	-	331	-
LR statistic	15.10	-	20.22	-
Value	0.000	-	0.000	-
Log Likelihood	-95.78	-	-101.40	-

Notes: Definitions of Additional Regressors: Average Regional Polity: average polity in the immediate neighboring countries for the country in question. Neighborhood war: the number of the immediate neighbors of the country in question that experienced war.

Appendix Table A.1: Summary Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Resources Rent per capita	1194	3173	0.3	22219
GDP per capita	6267	9719	400	66844
Polity	-2.677	4.56	-10	9.4
GDP growth rate	0.04	0.03	-0.06	0 .13
Neighbor war	0.5	0.35	0	1
Home war	0.22	0.30	0	1
Unemployment rate	0.09	0.06	0.01	0.3
Average regional polity	-0.69	4.41	-8.75	9.9
Political repression	0.47	0.20	0.00	0.9
Battle Death in Arab civil wars	4550	4052	0	77405
Battle Death in Arab international wars	606	9357	0	241167
Battle Death in Arab-Israeli wars	0.3	1.5	0	24.9
Battle Death in major Arab wars	1056	10246	0	241190

Figure A.1: Number of Countries Achieving Democratic Transition (Decadal & half decadal frequencies)