Institutions, Trade and Geography: Implications for long-term Development in the Arab World

Ibrahim Elbadawi

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Abstract

Over the past quarter century, standards of living in the Arab world have experienced relative stagnation, as reflected in the expanding income gaps between Arab countries and their East Asian and OECD counterparts over time. The evidence suggests that for all categories of Arab countries, lack of confidence with regard to protection of property rights (rule of law) and deplorable standards of democracy are the main factors explaining the relative underdevelopment of the Arab world. This is consistent with the global evidence in this literature and confirms the adage: "Institutions Rule". However, in addition to its indirect influence through institutions, geography is also found to be directly associated with underdevelopment in some large, tropical and arid Arab countries. This suggests that explicit consideration of the physical ecology of development should be given high priority as well.

المؤسسات، التجارة والجغرافيا: متضمنات التنمية بعيدة المدى في العالم العربي

إبراهيم البدوي

ملخص

خلال الربع الأخير من القرن الماضي، شهدت مستويات المعيشة في العالم العربي تدهوراً نسبياً، حسبما عكسته الفجوات المتزايدة في هذا المجال بين الدول العربية من جانب وبين أقطار شرق آسيا ومنظمة التعاون الاقتصادي والتنمية من جانب آخر. توضح الشواهد أن لكل مجموعات الدول العربية كانت العوامل الرئيسية المفسرة للتخلف النسبي للدول العربية تتمثل في عدم الثقة في ما يتعلق بحماية حقوق الملكية، بمعنى غياب حكم القانون، والمستويات المتدنية للممارسة الديموقراطية . ويتسق مثل هذا التفسير مع الشواهد الدولية في الأدبيات المتخصصة، والتي تم تلخيصها في مقولة أن المؤسسات تلعب دوراً حاسماً في إحداث التنمية. كذلك وجد أن

* World Bank, Washington DC. Email: Ielbadawi@worldbank.org. An earlier version of this paper was presented at the Arab Planning Institute International Conference on Institutions and Development Performance held at Beirut, Lebanon on June 8-10, 2004. The views expressed are not necessarily those of the World Bank, its Board of Directors or affiliated organizations. The author would like to acknowledge the research support of Gary Milante.

هناك تأثير غير مباشر للجغرافيا على التخلف من خلال المؤسسات، بالإضافة إلى التأثير المباشر في بعض الأقطار العربية ذات المساحات الواسعة وتلك الاستوائية والقاحلة. وتفسر هذه النتـــائج أهمية إيلاء العوامل البيئية في التنمية الأولوية المتقدمة التي تستحقها.

Introduction

"Governments' arbitrary interferences in man's property result in loss of incentives, which could eventually lead to a weakening of the state. Expropriation is self-defeating for any government because it is a form of oppression, and oppression ruins society." Ibn Khaldoun (1332-1406).

"You will find in the climates of the north, peoples with few vices, many virtues, sincerity and truthfulness. Approach the south, you will think you are leaving morality itself, the passions become more vivacious and multiply crime. The heat can be so excessive that the body is totally without force. The resignation passed to the spirit and leads people to be without curiosity, nor the desire for noble enterprise." (Montesquieu, 1989, English edition).

"All the inland parts of Africa, and all that part of Asia which lies any considerable way north of the Euxine [Black] and Caspian seas, the ancient Scythia, the modern Tartary and Siberia, seem in all ages of the world to have been in the same barbarous and uncivilized state in which we find them at present…Commerce and manufactures, in short, can seldom flourish in any state in which there is not a certain degree of confidence in the justice of government." Adam Smith (1776).

Throughout recent history, economists, geographers, social thinkers and historians have been intrigued by the phenomenon of income disparities across countries. Many scholars have turned to interpretations of institutions, geography and endowment to explain why some nations are prosperous and others are not. The above three quotes by three great social thinkers make this point. For example, Ibn Khaldoun (1332-1406), the famous 14th century Arab scholar emphasized the role of institutions, and suggested in other major contributions[1] that geography has a lot to do with the emergence of type of institutions associated with strong and dynamic civilizations.

Four hundred years later, Montesquieu provided an interpretation to the climate theory of underdevelopment, albeit with an explicit racist bent.[2] Finally, Adam Smith (1776) emphasized both geography and institutions, largely reproducing the insight of Ibn Khaldoun.

Until today, this phenomenon and its explanation continue to be a very critical question facing the economic profession. Rodrik, a leading economist, and his research associates (Rodrik, Subramanian and Trebbi, 2002) note that: Average income levels in the world's richest and poorest nations differ by a factor of more than 100. Sierra Leone, the poorest country for which national income statistics are available, has per capita GDP of $490, compared to Luxemburg's $50,061 (expressed in PPP-adjusted current "international" dollars for 2000).

Against this backdrop, Rodrik *et al.* ask: Why are some nations so rich and others so poor? What explains such persistent per capita income differences across countries? And what (if anything) can be done to reduce them? They then make the obvious but profound statement: "It is hard to think of any question in economics that is of greater intellectual

(1) Ibn Khaldoun is the founder of sociology, which he called the "Science of Society" and based it on the notion that social phenomena are governed by fixed laws and are related to cause an
d effect. Among his several writings, the *Muqadima* (Introduction to History) is considered the principal precursor of modern sociology. It addresses general sociology, sociology of politics (tribal life, state, caliphs and ruling hierarchy), sociology of urban life, sociology of economics and sociology of knowledge.

(2) Quoted in Easterly and Levine (2003).

significance, or of greater relevance to the vast majority of the world's population."

Two other distinguished economists (Easterly and Levine, 2003) after noting that Canada today has a per capita income 107 times higher than Burundi's, ask the following questions as to what might have accounted for these stark income differences. How much is due to favorable geographic endowment? How much is due to better institutions? How much is due to better policies (especially trade integration and, by implication, globalization). Do the alleged geographic advantages of Canada over Burundi directly affect income, or do they work through institutions or policies?

These questions constitute the essence of the current debate about geography, institutions, trade integration and development (Figure 1). The empirical research agenda, therefore, boils down to finding out which of the arrows in the development diagram is more dominant. In particular, since geography is clearly exogenous, does it directly account for income differences across countries or only indirectly through institutions and/or economic policy?

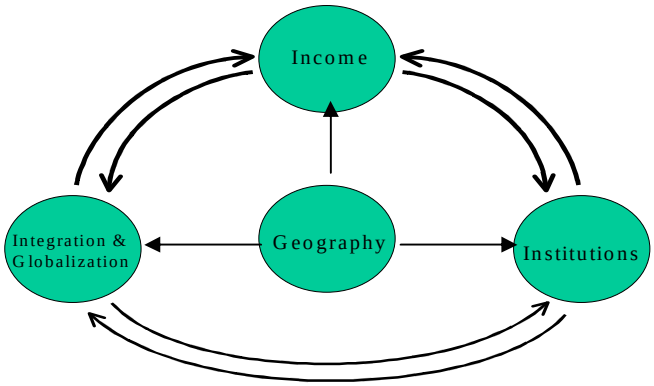

Figure 1. The development diagram.

This paper provides evidence on the relative stagnation of the Arab world in the past quarter century, which is reflected in expanding income gaps between Arab countries and East Asian and OECD countries over time. The paper then applies recent empirical models of long-term determinants of income level across countries to explain this phenomenon. An overview of related literature is offered followed by an analysis of the extent of the income gaps in three groupings of countries in the Arab region (low, middle and high income) relative to low-income, middle-income East Asia and OECD countries. The study assesses the role of the factors associated with differences in standards of living across countries, i.e. geography, democracy, rule of law and economic openness.

Related Literature

Modern development and growth literature, especially the empirical strand of the literature, keeps returning to this ever recurring question with a vengeance, deploying conceptual and methodological advances spawned by the endogenous growth model and cross country econometrics to try to identify the "true" determinants of income disparities across nations among the competing factors of geography, institutions and trade.

Three schools of thoughts may be identified: (a) one emphasizing the central role of geography; (b) the role of institutions; and (c) economic integration.

The Geography School

This school of thought argues that geography directly affects incomes and long-term development. Most notable contributions to this literature are the recent writings by Diamond (1997); Sachs (2001); and Gallup, Sachs and Mellinger (1998). According to this literature, there are several channels through which favorable geography and ecology ─ in terms of access to long coastal lines or sea-navigable rivers and temperate climate ─ could determine income and long-term development.

Firstly, a high share of a country's area around coastal lines or sea-navigable rivers and high economic density along the coast, are important

determinants of competitiveness, especially for transaction-intensive exports, such as manufactures. Secondly, a high share of non-tropical (especially temperate) regions in a country is associated with less prevalence of vector-borne diseases and high agricultural productivity. Thirdly, geography could also simultaneously affect development *indirectly* through institutions. For example, the emergence of modern coastal city states in southern Europe may be credited to the easy access to maritime trade, which led to an unprecedented expansion of merchant class, ship-builders and other associated service communities that depended on transnational trade. This emerging social class had, in turn, acted as a formidable agent pushing for the type of institutions required for expansion of trade and wealth creation.

The Institutional School

According to this school of thought, what matters are the rules of the game in society and their impact on economic incentives and property rights. While recognizing the *endogeneity* of institutions, most notably, to *geography*, this school argues that, nevertheless, the impact of the latter runs through its long lasting impact on institutions. In other words, "institutions rule" (Rodrik *et al.*, 2002). There are, however, different views on how geography shapes institutions. For example, the "Crop" theory of institutions (Engerman and Sokoloff, 1997; Sokoloff and Engerman, 2000) argues that in countries where physical environments are more conducive to plantation-based agriculture, less egalitarian and less inclusive institutions developed.

On the other hand, the "Germs" theory of institutions (Acemoglu, Johnson, and Robinson, 2001, 2002) is built on the observation that in colonies with inhospitable germ environment (as measured by the mortality rate of European colonialists), colonial authorities established "extractive" institutions. However, European colonialists had tended to settle and, therefore, establish settler-class institutions in more hospitable germ environments. Therefore, this literature suggests that, given the very high inertia in the development of institutions over time, the European colonial

mortality rates is likely to be an important determinant of the quality of current institutions.

Rodrik *et al.* (*op. cit.*), however, reject the idea of a causal geographic theory of institutions. Rather, they argue that variables associated with geography, such as the "settlers mortality rate", are simply good statistical instruments for identifying the exogenous components of institutions that are associated with income.

The Trade and Globalization School

This school of thought argues that international trade and globalization lead to higher degree of specialization, expand economies of scale, and promote diffusion of technology and learning. Hence, it is argued that open trade and globalization tend to increase total factor productivity (TFP) and growth and long-term incomes. Moreover, according to this view, geography affects development through trade openness, because it determines "natural openness", which is influenced by the geography variables of the "Gravity Model" of bilateral trade (Frankel and Romer, 1999; Frankel *et al.*, 1996) to wit: (a) distance from major markets ─ negatively; (b) area and population size between two trading partners ─ positively; (c) higher population size (or area) of the home country ─ negatively; and (d) land lockedness ─ negatively.

The Evidence

The main evidence from recent empirical literature on the determinants of long-term income levels across countries may be summarized in the following broad conclusions:

- Institutions have direct effects on income, while geography doesn't, though the latter influences institutions through settlers' mortality (Acemoglu, Johnson, and Robinson, 2001).
- Institutions determine long-term income levels; while neither policy, including trade, nor geography have direct impact on income, though geography determines institutions (Easterly and Levine, 2003).
- The most compelling evidence in support of the above conclusions is provided by Rodrik *et al.*, which conclude that Institutions rule.
- However, Sachs (2003) shows that malaria transmission, which is strongly affected by ecological conditions, directly affects the level of per capita income after controlling for the quality of institutions. This suggests that geography has not

only an indirect effect on incomes, as suggested by the above literature, but also a direct effect as well.

Evidence from New Cutting-edge Research. A new line of econometric research takes a critical view of the conventional "Instrumental Variable" approach that constitutes the "work horse" for testing the competing debates in this literature (Rigobon and Rodrik, 2004). These authors argue that the requirements for valid instruments are quite demanding because it is difficult to come up with truly exogenous variables that would also satisfy the exclusion restrictions.(3) Therefore, because the list of plausible instruments is extremely short, it is not possible to undertake joint determination of income, institutions and trade openness. Instead, this new research proposes a novel approach, which avoids these problems, called "Identification through Heteroskedasticity" (IH). By splitting the sample into two sub-samples, where the variance of the shock to institutions is larger in one sub-sample compared to the other, the IH approach generates enough equations for identifying the parameters of the system. In particular, Rigobon and Rodrik adopt two splitting strategies: (a) countries colonized by Europeans *vs*. those that have not; and (b) East-West aligned countries (Eurasian) *vs*. those that are aligned in the North-South axis (Africa, the Americas).

The evidence from both approaches is remarkably similar. The full results for the system of income, rule of law, democracy and openness are summarized in Table 1 which is based on the second splitting strategy. The evidence suggests the following broad conclusions for the long-term determinants of income levels:(4)

- Institutions (both political and economic) are robustly associated with income levels;
- Moreover, and contrary to the conventional literature, geography also has direct effects on income levels;

(3) These are variables that are strongly correlated with the right-hand side "potentially" endogenous variables in the income regression but are unrelated to income itself.

(4) The results for the other three equations on Democracy, Rule of Law and Openness are not discussed.

- However, similar to the evidence from most of the earlier literature, trade openness has no effect.

Table 1. Estimates of a Matrix of Income, Rule of Law, Democracy and Trade

	Y	Log Democracy	Log Rule of Law	Log Open	DistEq	Log Area	Log Pop
Income		0.157	0.671	NS	0.113	-0.176	0.124
Democracy	0.318		0.206	-0.393	0.213	NS	-0.233
Rule of Law	0.622	0.104		0.129	0.160	0.079	NS
Openness	NS	-0.204	0.157		-0.199	-0.103	-0.701

N.B.

- Splitting strategies used is based on geography (see above).
- NS: statistically non-significant.

- Definition of Variables:
  Open ─ trade ratio/GDP
  DistEq ─ distance from the equator
  Area and Pop ─ land area and population, respectively
  Democracy ─ measured by the widely quoted Polity IV index, which provides global ratings of the standards of democracy (see http://www.cidcm.umd.edu/inscr/polity/)
  Rule of law ─ a composite indicator of a number of elements that capture the protection afforded to property rights as well as the strength of the rule of law (Kaufman and Kraay, 2002).

Source: Table 6 of Rigobon and Rodrik (2004).

Moreover, the IH model also generates interesting evidence on how much of the variability of income and associated variables are explained by the model (Figure 2).

- Income level ─ geography and institutions explain roughly 49% of the variance of income including 7% for democracy, 20% for rule of law and 16% for distance from the equator, leaving 51% unexplained.

- Democracy ─ 60% of its variation is unexplained, leaving only 14, 11 and 14% to be explained by income, rule of law and distance from the equator, respectively.

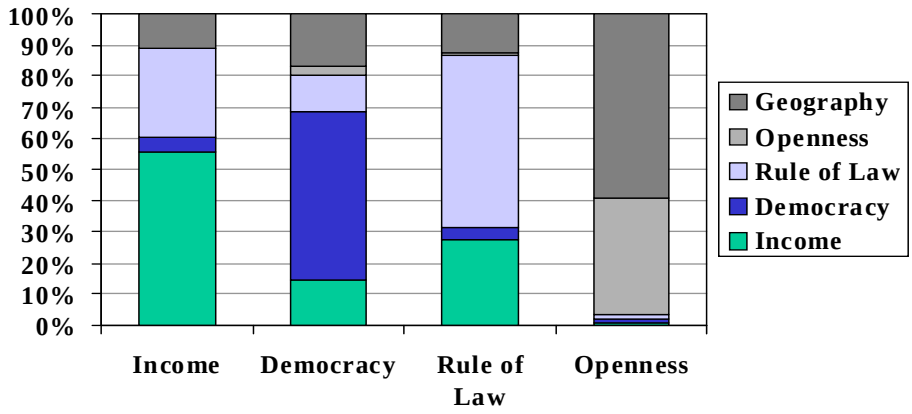

Figure 2. Variance decomposition of incomes.

- Rule of Law ─ 59% of its variation is unexplained but more than 20% is explained by income and 14% by the distance from the equator, leaving a marginal 5% for democracy.
- Trade Openness ─ size area and population account for a combined share of more than 55% (including 39% for area); and, leaving a relatively smaller share of 36% unexplained.

Where Does the Arab World Stand and Why?

Arab countries are compared to relevant comparator groups with regard to income, democracy and rule of law. Rigobon's and Rodrik's estimates are used to explain the income differences between the Arab countries and comparator groups.

Real per capita GDP data (1995 PPP) over 1975-2001 suggests that all Arab country groupings lag behind comparators, especially in the post-1990s period. Median per capita income levels in low-income Arab countries rose from about $500 in 1975 to reach slightly above $1500 by 2001. However, the median for low-income countries in the world has risen faster and by 1990, it surpassed the income levels for the Arab counterparts,

reaching more than $2000 in 2001 (Figure 3a). The experience of Sudan, as a low-income Arab country, reflects a similar experience (Figure 3b).

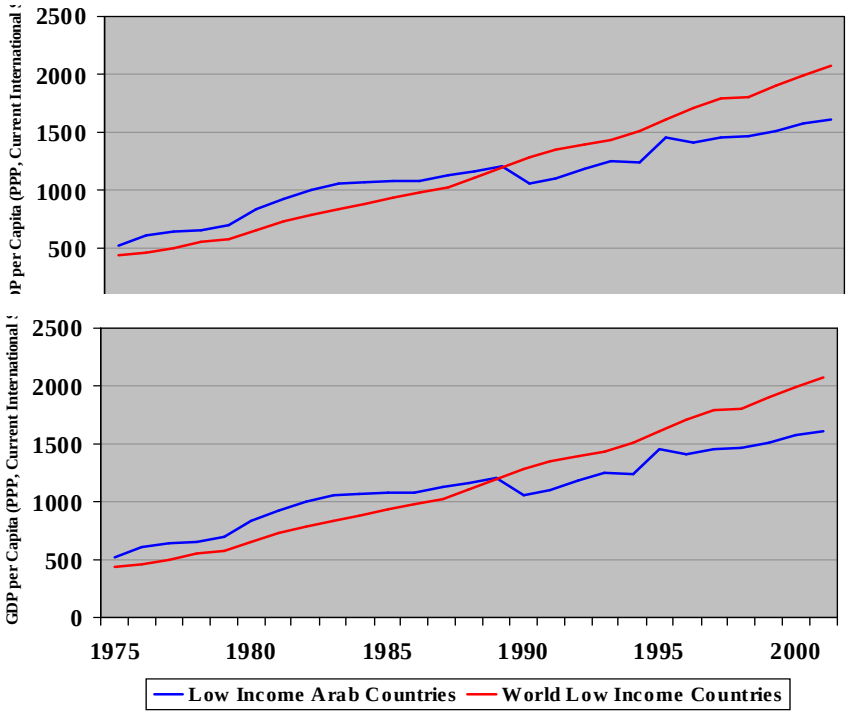

Figure 3a. Low-income countries: (GDP per capita, 1975- 2001).

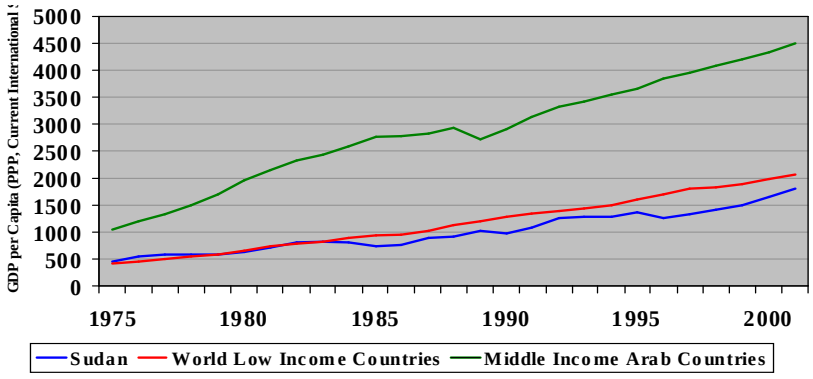

Figure 3b. Income trends in Sudan (GDP per capita, 1975 – 2001).

However, the income divergence between the middle-income Arab countries and middle-income East Asia is much more dramatic. While both groups started at similar income levels of about $1500 in 1975, the Arab middle-income group essentially stagnated while the East Asian countries experienced unprecedented economic expansion for the following quarter century. Therefore, by 2001, the median income in the Arab group was only $4000, compared to about $12,000 for East Asia (Figure 4a). In terms of country experiences, it is remarkable to note that by 2001, Malaysia's per capita income was twice that of oil-rich Algeria and three times that of Egypt (Figure 4b).

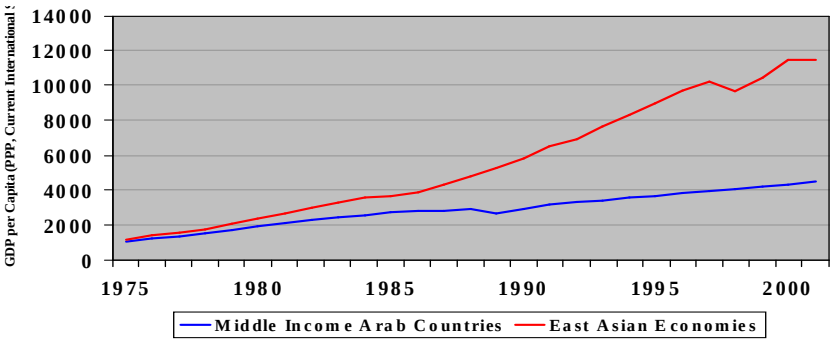

Figure 4a. Middle-income countries (GDP per capita, 1975- 2001).

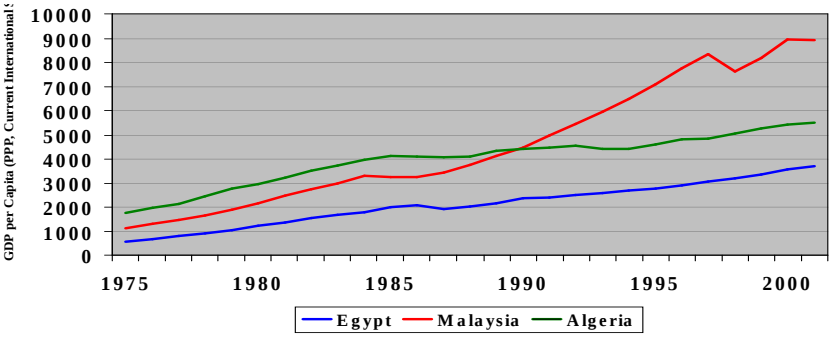

Figure 4b. Middle-income cases (GDP per capita, 1975- 2001).

Even more remarkable is the experience of the high-income oil Arab economies of the GCC, which started in 1975 with a median income of $10,000, twice the OECD median. However, by 2001, this Arab group could only manage to reach $15,000, compared to a staggering $30,000 for the OECD (Figure 5a). The comparison between Oman and Norway is very revealing: both are oil-producing small countries with similar income levels of about $5000 in 1975. However, by 2001, Oman's income barely reached $15,000, while that of Norway shot to more than $35,000 by that year (Figure 5b).

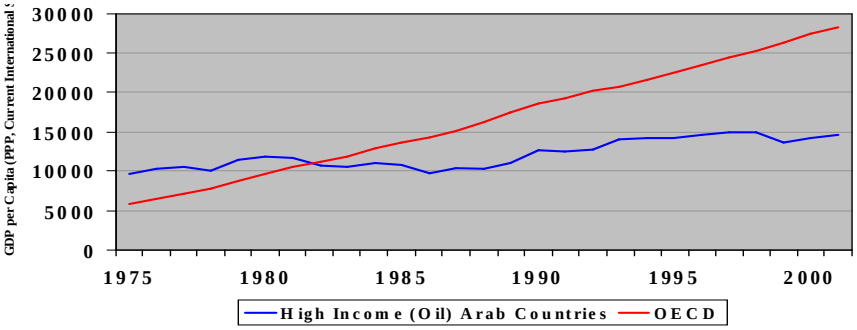

Figure 5a. High-income countries (GDP per capita, 1975- 2001).

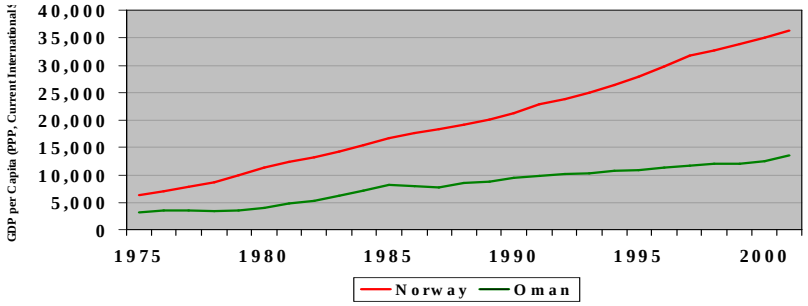

Figure 5b. High-income cases (GDP per capita, 1975- 2001).

Describing the standard of democracy in the Arab world as lagging behind will be a gross understatement. It is, in fact, appalling. According to this index, the Arab world has consistently lagged behind the standard of democracy achieved by the rest of the world over the last quarter century (Figure 6). Moreover, the Arab region was the only region not affected by

the massive wave of democratization that swept the world since the mid-1980s.

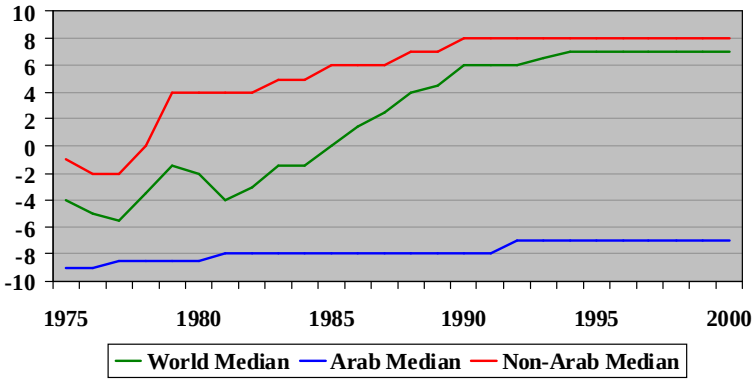

Figure 6. Relative median polity.

Finally, the performance of the Arab countries in terms of rule of law is mixed, where the Region is not dramatically lagging behind as in the case of democracy (Figure 7). For example, relative to the OECD countries, the rule of law is weaker in high-income Arab countries and is much weaker in middle-income Arab countries. However, surprisingly, rule of law is better in both groups than in East Asia in 2000. However, the low-income Arab countries have very poor standard in terms of rule of law; along with Algeria and Syria (middle-income countries).

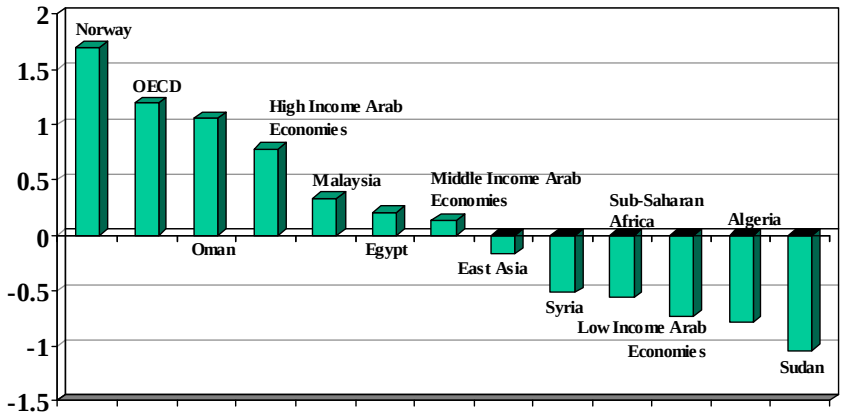

Figure 7. Rule of law measures for regions and cases (2000).

Explaining Relative Incomes in the Arab World

So what accounts for most of the underdevelopment (in terms of income levels) of the Arab world? And, given their geographic and population attributes, what would the income levels of the Arab countries have been had they adopted the same standards of democracies and rule of law of comparator countries.

Firstly, median income in low-income Arab countries was $1560 in 2000, compared to $2080 and $6350 for the world's low- and middle-income groups, respectively. For both comparisons, the income differentials could be substantially accounted for by the combined effect of rule of law and democracy. Nevertheless, population and geography are important as well (Figure 8). However, simulating income levels in low-income Arab countries, assuming the level of institutions in their comparable groups makes clear how critical institutions can be in explaining the underdevelopment of this group of Arab countries. The most remarkable evidence is that for these countries to achieve the living standards of middle-income countries of the world, significantly enhancing political governance (democracy) should be the top priority in the reform agenda, though further improvements in economic institutions (rule of law) is also critical.

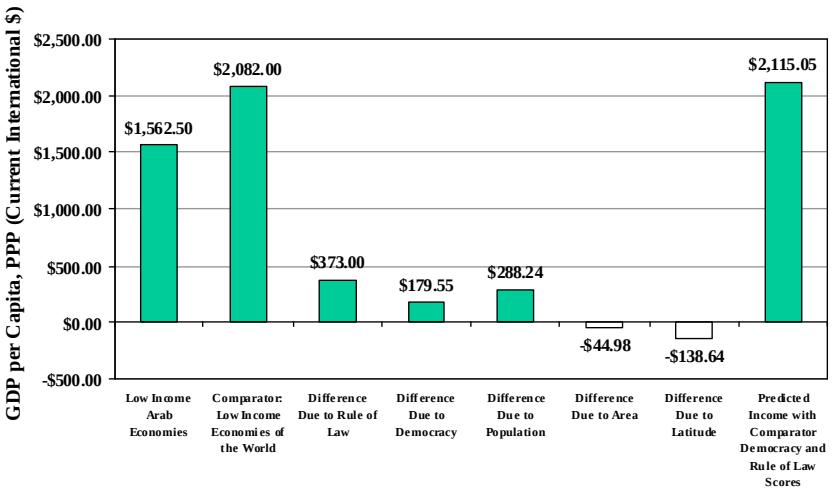

Figure 8. Decomposing differences in income per capita (PPP) of low-income Arab *vs* the World's low-income economies (2000).

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Secondly, for the middle-income Arab countries, a better insight may be gained by undertaking country-specific analysis; given the extreme diversity on both the Arab and East Asian middle-income economies. Cases in point are Algeria (median income of $5430 in 2000) and Egypt (median income of $3550) compared to Malaysia with a median income of $8920 in the same year. In Algeria, rule of law accounts for most of the income differential ($2898), while the higher standard of democracy in Malaysia accounted for a difference of $345 (Figure 9a). In the case of Egypt, higher standards of democracy and rule of law in Malaysia, respectively, account for $1,423 and $856 of the income differentials between the two countries (Figure 9b). With regard to the other factors, latitude favors Algeria and Egypt, while land area favors Malaysia. Again, simulating income levels in these two Arab countries under the assumption that they attain the levels of institutions prevailing in Malaysia, it suggests that income levels would rise to more than $8600 in Algeria and to more than $5800 in Egypt.

Thirdly, median income in high-income Arab countries was $13,630 in 2000, compared to $22,183 for OECD (Figure 10). As in the previous cases, the combined effect of better institutions in the OECD countries accounts for more than $3700 of the income differential. Indeed, assuming OECD-type institutions income levels in high-income Arab countries would reach more than $17,300. However, surprisingly most of the effect is accounted for by rule of law, leaving a much smaller effect for democracy.

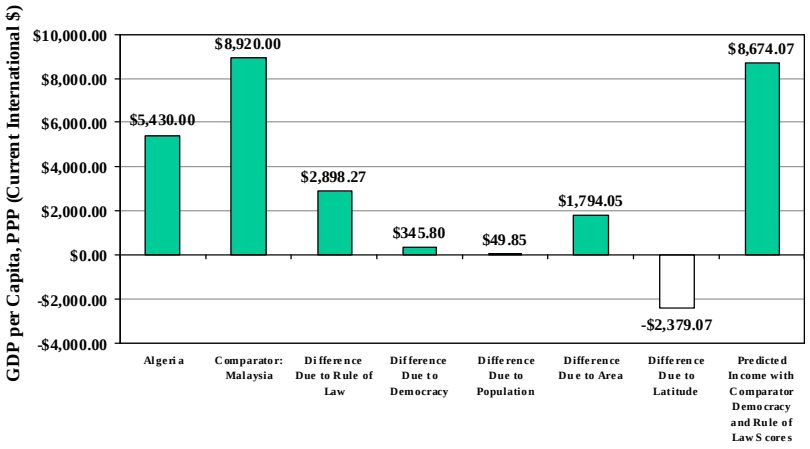

Figure 9a. Case study: Difference in income per capita of Algeria *vs.* Malaysia (2000).

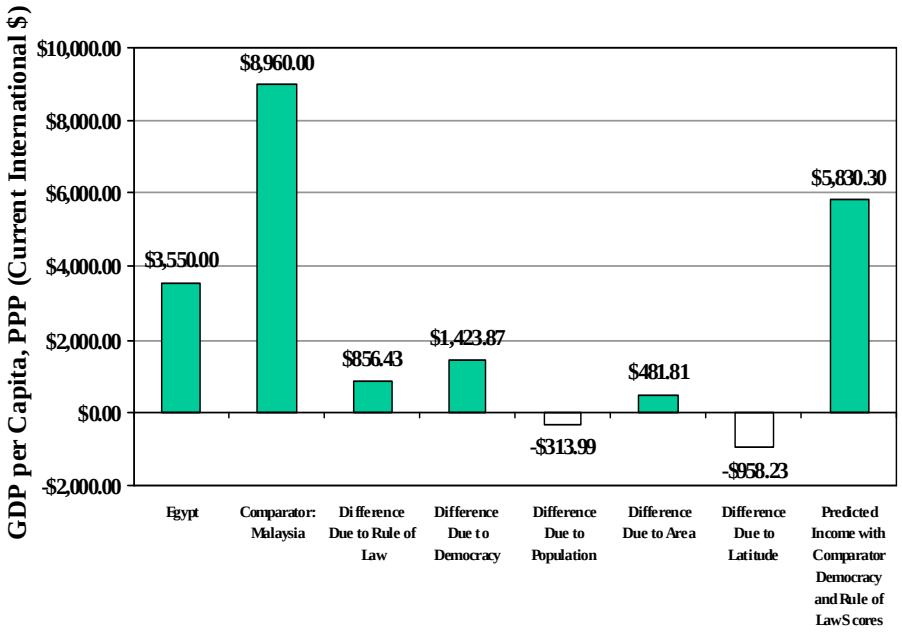

Figure 9b. Case study: Difference in income per capita (2000), Egypt *vs.* Malaysia.

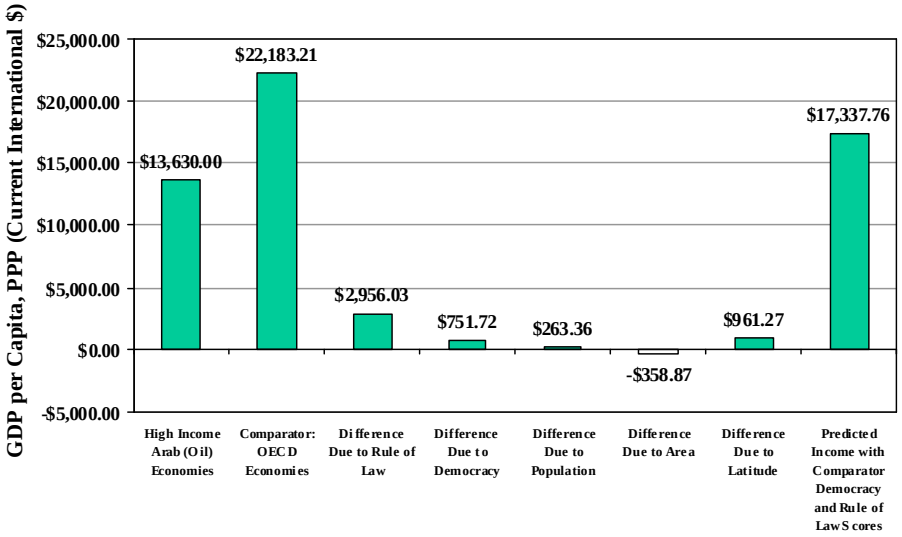

Figure 10. Decomposing differences in income per capita, high-income Arab vs. OECD economies (2000).

Conclusion

This paper reviews the literature on income gaps across countries and analyzes the income differentials in three grouping of countries in the Arab world (low, middle and high income) relative to East Asia and OECD countries. The analysis reveals that the Arab world income levels lag behind these countries.

In explaining the underdevelopment of the Arab world, the paper uses a recent empirical model for the joint determinants of income, democracy, rule of law and economic openness, while controlling for geography and population as exogenous country characteristics.

The evidence suggests that for all categories of Arab countries, lack of confidence with regard to protection of property rights (rule of law) and deplorable standards of democracy are the main factors explaining the relative underdevelopment of the Arab region. This confirms the fundamental conclusion of Rodrik *et al* (2002): "Institutions Rule".

However, geography factors are also important determinants. For example, in the cases of high-income Arab countries (Oman, Saudi Arabia) as well as Sudan, latitude has had a negative effect. On the other hand, latitude favors the middle-income Arab (Algeria, Egypt and Syria) compared to the East Asian countries. Also the large size of some Arab countries (Sudan, Algeria and Saudi Arabia) constitutes a disadvantage for them.

To overcome relative underdevelopment, the Arab region must significantly enhance its institutions, including strong commitment to real, broad-based and home- grown democratic reforms. However, given the adverse geography in several countries (hot, arid or tropical climate, large land area relative to population), these countries must pay attention to the physical ecology of development. For example, efforts to eradicate or substantially reduce the burden of malaria should take high priority in Yemen and Sudan. In addition, investing in appropriate agricultural research and adaptive technology for arid and semi-arid climate conditions is critical.

Finally, while economic openness is found not to have an independent direct effect on income levels across countries, Arab countries should not underestimate the potential indirect gains from closer economic and political Arab integration. At least two benefits may flow from such integration. Firstly, it provides peer pressure and convergence criteria for governance reforms and democratization. Secondly, it can improve the geography of development for all Arab countries by expanding economic space for better attracting foreign as well as intra-Arab investment, intra-industry trade as well as by pooling and coordinating comparative advantages across the region. Therefore, it will certainly be to the advantage of the Arab countries to address the issue of closer economic and political Arab integration.

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