Between Stabilization and Allocation in the MENA Region:
Are Competition Laws Helping?

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Abstract

Despite its several benefits, competition policy seems to lack the attention it deserves in terms of public interest and in terms of research in MENA countries. In the 1990s, many of these countries relied on adjustment and stabilization programs offered by international organizations. Surprisingly, these programs implicitly implied an orientation towards a market economy structure without an explicit adoption of competition laws. The latter mostly appeared in the following wave of reforms in the 2000s with the objective of regulating business environment. This in turn raises questions on the extent to which these programs help adjusting structural and allocation issues in the beneficiaries' economies or rather only focuses on adjusting macroeconomic imbalances. There seems to be a sort of a policy consensus that competition laws positively contribute to economic development. However, it is surprising how little evidence we have about the macroeconomic impact of these laws in general and particularly for the MENA region. To our knowledge, there is no study assessing the macroeconomic outcomes of competition laws in the latter. Against this backdrop, our main objective is to empirically assess the impact of competition laws in the MENA region on economic growth. Our contribution is threefold: first, we create indices to assess the effectiveness of MENA countries competition laws using Youssef and Zaki (2018, *forthcoming*) methodology. Second, we disentangle the effect of competition laws on growth by distinguishing between the structural and the cyclical components of GDP growth. Third, we control for the endogeneity of the competition law adoption. Our main findings show that in general, the overall assessment of MENA countries competition legislations seems to be broadly average with the Maltese and the Algerian legislations the best performers among the group while the Iraqi and the Yemeni legislations are the weakest. Advocacy seems to be an area of weakness. In addition, most of these countries legislations score better in the enforcement against anti-competitive acts compared to the institutional effectiveness. As per the effect of competition policy rules on economic growth in MENA countries, competition measures exert a positive and statistically significant effect on the trend component of GDP, while its effects on the cyclical component is sometimes negatives. This result is robust for the four measures of competition we use (the existence of the law, its age, the age of the competition authority and our own created competition rules index) and after we control for the endogeneity of the competition rules.

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1. Introduction

Despite its several benefits, competition policy seems to lack the attention it deserves in terms of public interest and in terms of research in the MENA region. It could be defined as "competition legislation covering the prohibition of cartels and abuse of dominant position and the control of mergers" (Ilzkovitz and Dierx, 2015). The latter policy's benefits are enormous and could be of particular usefulness for developing economies, including MENA countries. On the microeconomic front, competition is essential to achieve allocative efficiency. To that effect, competitive markets are supposed to allocate resources to the most productive and innovative firms and induce the exit of the least efficient firms. This efficiency leads in its turn to improved outcomes on the macroeconomic front in terms of productivity and economic growth (Carlin et al., 2000). In addition, competition policy is an essential component for a good business environment which helps attracting FDIs and thereby stimulates further economic growth (Clarke, 2003 and Godfrey, 2008). It was also argued that competition helps in poverty eradication by reducing barriers to entry, especially to small entrepreneurs. As a result, this will be beneficial for both consumers and small businesses through price reductions and expansion of employment opportunities (Godfrey, 2008 and OECD, 2014).

In addition to the above-mentioned benefits, the timing of competition law adoption must be considered from a political economy perspective. In this context, many MENA countries relied on adjustment and stabilization programs offered by international organizations in several occasions. For instance, in the 1990s, some of them started to adopt economic reform programs that were mostly market packages aiming at reducing the role of the state and stabilizing different macroeconomic aggregates. These programs included the following measures among others: privatization, less state intervention, and more reliance on markets. Surprisingly, these programs implicitly implied an orientation towards a market economy structure without an explicit adoption of competition laws. The latter only appeared in the following wave of reforms in the 2000s with the objective of regulating business environment. Despite its effect on allocative efficiency, competition policy seems to be only prescribed and encouraged by international organizations but is not considered as a usual component of adjustment programs. This in turn raises questions on the extent to which these programs help adjusting structural and allocation issues in the beneficiaries' economies or rather only focuses on adjusting macroeconomic imbalances.

There seems to be a sort of a policy consensus that competition laws positively contribute to economic development. However, it is surprising how little evidence we have about the macroeconomic impact of these laws in general and particularly for the MENA region. Existing literature offered evidence on the impact of competition laws on per capita income (Petersen, 2013), total factor productivity (Buccirossi et al., 2013) and economic growth (Gutmann and Voigt, 2014; Dutz and Vagliasindi, 2000; Dutz and Hayri, 2000). As for the MENA region, much of the research that has been undertaken on competition is sector specific (See for example on aviation sector: Omar and Sekkat, 2012; Barakat, 2012; Morchid and Sekkat, 2012 and Squalli, 2012. On telecommunications sector: Hakim and Neaime, 2011; Ezzat, 2015). To our knowledge, there is no study assessing the macroeconomic outcomes of competition laws in the latter.[3]

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[3]Using their own created indices and World Bank Enterprise Surveys (WBES) firm level data, Youssef and Zaki (2018, *forthcoming*) undertake an assessment of competition policy rules and implementation and their effect on competition outcomes (factual based and perception based) in a group of Arab countries. We plan to extend their analysis by focusing on the macroeconomic impact of competition laws in the MENA region.

Against this backdrop, our main objective is to empirically assess the impact of competition laws in the MENA region on economic growth. Our contribution is threefold: first, we create indices to assess the effectiveness of MENA countries competition laws regarding three categories: enforcement, advocacy and institutional effectiveness. The rules assessment will account for the competition law and its subsequent amendments for each country. To date, all MENA countries introduced a competition law, except five countries: Bahrain, Iran, Lebanon, Libya, and West Bank and Gaza. Most of MENA countries with a competition law have at least ten years of experience in competition implementation. We believe this is a sufficient and suitable experience for assessment in order to extract useful policy recommendations for a better future performance. As for the countries without a competition law, they would serve as comparators for the rest of the group and will add variability to the analysis. Second, we disentangle the effect of competition laws on growth by distinguishing between the structural and the cyclical components of GDP growth. Third, we control for the endogeneity of the competition law adoption. To that effect, our main findings show that the overall assessment of MENA countries competition legislations seems to be broadly average with the Maltese and the Algerian legislations the best performers among the group while the Iraqi and the Yemeni legislations are the weakest. Advocacy seems to be an area of weakness. Moreover, most of these countries legislations score better in the enforcement against anti-competitive acts compared to the institutional effectiveness. As per the effect of competition policy rules on economic growth in MENA countries, competition measures exert a positive and statistically significant effect on the trend component of GDP, while its effects on the cyclical component is sometimes negatives. This result is robust for the four measures of competition we use (the existence of the law, its age, the age of the competition authority and the competition rule index we construct) and after we control for the endogeneity of the competition rules.

The paper will be organized as follows. The second section will provide a summary of the stylized facts related to the political economy of competition laws adoption in MENA countries as well as the existing competition indicators assessing competition laws and policies at the economies wide level. The third section will be dedicated to the methodology. The fourth section will analyze the empirical findings. The fifth will conclude and will offer policy recommendations.

2. Stylized facts

2.1 Political economy context: Stabilization programs and competition laws adoption in the MENA countries

As per Table 1, all MENA countries have adopted a competition law over the last two decades, except five countries, namely Bahrain, Iran, Lebanon, Libya, and West Bank and Gaza. To that effect, Israel was the first country in the region to enact a competition law (1988) while Oman was the last one (2014).

We contrasted the timing of adoption of competition law and its effective implementation on the one hand and the IMF and the World Bank stabilization programs on the other hand and three relevant conclusions can be withdrawn as follows (Table 1): First, in the early 1980s, several MENA countries started getting enrolled in stabilization programs offered by the IMF and the World Bank. Yet, we noticed that there was a lag in time between the enrollment in these programs and competition laws adoption in some cases, namely Djibouti, Egypt, Jordan, Iraq, Morocco and Tunisia. We argue that this type of lags could create some market distortions. For instance, stabilization programs implicitly encourage free markets and privatization. However, competition laws are not a standard component of these programs. Hence, we believe the latter programs implicitly imply an orientation towards open markets

economies, yet it seems they do not necessarily encourage the beneficiary economies to adopt the relevant regulatory tools like a competition law and authority. Second, this lag raises questions on the extent to which these programs are intended to solve structural problems of the beneficiary's economy including allocative efficiency or they rather focus on short term management of macroeconomic imbalances.

Second, we observed some delays between the date of competition law adoption and the creation of a competition authority in the cases of Israel, Morocco, Kuwait, Oman, Qatar, Tunisia and Yemen. In fact, the Yemeni Competition Law was enacted in 1999. Yet, the Yemeni Competition Authority's role was only activated in 2007. Similarly, for the Moroccan case, the law was enacted in 2000 while the competition council came into effect in 2008 only with a consultative role. In 2014, an empowering law was enacted to grant the Council a more important regulatory and executive role. Yet, despite this empowering law, the Moroccan Council was subject to another bottleneck to its functionality post 2014. The reason behind was the fact that the members of the Board were not yet appointed by the King, except for the head. This put the Council's work on hold for around five years to date. We assume that this transition period created an environment of uncertainty, particularly with mergers notifications and approvals. It could also hamper the enforcement role of the authority in the subsequent periods. In the case of Oman, a competition law was enacted in 2014 specifying that the law implementing entity would be the Consumer Protection Authority. Later on, another law was particularly enacted in 2018 regarding the creation of an independent competition authority (and did not amend any of the clauses of the 2014 competition law). As for Kuwait, it enacted a competition law in 2007, while the executive regulation was enacted in 2012 and by virtue of which the Competition Protection Agency was created.

Third, there are some countries which enacted a competition law but did not establish a competition authority, namely Djibouti and Iraq. In general, this delay in time between competition law enactment and establishment of competition authority raises questions on the seriousness towards the effective implementation of competition policy. To that effect, we argue that the adoption of law is not sufficient in itself and what really matters is the implementation.

In this paper, we argue that the effect of competition law is reflected on the trend component of GDP not its cyclical one. Indeed since the enforcement of a competition law is an allocation policy that is likely to affect the structure of the economy (hence the trend component of GDP), it will shift the slope of the GDP trend upward as it is shown in Figure 1. Other policies (fiscal, monetary and tax) are more likely to affect the cyclical component of GDP since they are stabilization policies (they reduce the gap between GDP and its trend).

Figure 1: Stabilization vs. Allocation policies

Source: Constructed by the authors.

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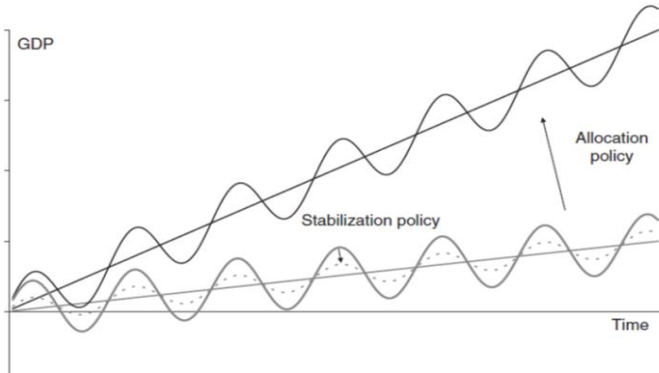
Table 1: MENA countries competition laws and structural adjustment programs

Country	Competition law			Date of creation of competition authority	Major Structural adjustment programs before the adoption of competition law (if any)
	Competition law	Date of enactment	Amendments (if any)		
Algeria	yes	1995	2003, 2008 and 2010	1995 (Authority stopped activities between 2003 and 2013)	- World Bank Structural Adjustment Loan (SAL) in 1996, 1997, 1998 - IMF Stand-By Arrangement 1989, 1991, 1994 and Extended Fund Facility 1995
Bahrain	no	-	-	-	no
Djibouti	yes	2008		no authority till present	- World Bank Structural Adjustment Facility (SAF) in 1996 and Structural Adjustment Loan (SAL) in 2001 - IMF Enhanced Structural Adjustment Facility (ESAF) in 1999
Egypt	yes	2005	2010 and 2014	2005	- World Bank Structural Adjustment Loan (SAL) in 1976 and 1991 - IMF Stand-By Arrangement in 1987, 1991, 1996 and Extended Fund Facility in 1993
Iran	no	-	-	-	- World Bank Structural Adjustment Loan (SAL) in 1957
Iraq	yes	2010	-	no authority till present	IMF first ever loan in 2004: Structural Adjustment Facility and Trust Fund World Bank first ever loan in 2005
Israel	yes	1988	2013 (complementary law)	1994	no
Jordan	yes	2004	2011	2004	- IMF Stand-By Arrangement 1989, 1992, 2002 and Extended Fund Facility 1994, 1996, 1999
Kuwait	yes	2007	2012	2012	no
Lebanon	no	-	-	-	- World Bank Structural Adjustment Loan (SAL) in 1977
Libya	no	-	-	-	no
Malta**	yes	1994	2000, 2003, 2004, 2011, 2012 and 2017	1995	no

Country	Competition law			Date of creation of competition authority	Major Structural adjustment programs before the adoption of competition law (if any)
	Competition law	Date of enactment	Amendments (if any)		
Morocco	yes	2000	2014	2008 (Authority stopped activities since 2014 till present)	- World Bank Structural Adjustment Loan (SAL) in 1988, 1992 - IMF Stand-By Arrangement 1983, 1985, 1986, 1988, 1990 and 1992 Extended Fund Facility 1980
Oman	yes	2014	2018 (complementary law)	2018	no
Qatar	yes	2006		2008	no
Saudi Arabia**	yes	2004	2014	2004	no
Syrian Arab Republic*	yes	2008		2008	no
Tunisia	yes	1991	1995, 2003, 2005 and 2015	1995	- World Bank Structural Adjustment Loan (SAL) in 1988 - IMF Stand-By Arrangement in 1986 and Extended Fund Facility in 1988
UAE**	yes	2012		2012	no
West Bank and Gaza	no	-	-	-	- World Bank Public Financial Management Reform Structural Adjustment Operation in 2004
Yemen	yes	1999		2007	- World Bank Structural Adjustment Loan (SAL) in 1996, 1997 and 1999 - IMF Stand-By Arrangement in 1996 and Enhanced Structural Adjustment Facility (ESAF) and Extended Fund Facility (EFF) in 1997/98

Source: Authors' compilation from MENA countries competition authorities' websites, IMF and World Bank websites, US Department of State 2018 Investment Climate Statements, and Harrigan et al. (2006).

Notes: *For the Syrian case, we are not able to confirm whether the Syrian Competition Commission is still operational or stopped its activities post uprisings. The Commission website was not accessible during our period of study.

** We were not able to confirm the exact date of creation of competition authority for Malta, Saudi Arabia and UAE. Hence, we assumed they started to operate at the same date of the competition law enactment.

2.2 Competition, governance and economic growth: where does the MENA region stand?

Figure 2 provides an insight on how the MENA region compares to the rest of the world regarding its key markets structure. Compared to the rest of the world, in 2010 the MENA region had the highest share of markets dominated by one firm and the lowest share of markets dominated by many firms. We consider this finding as an important motivation to the current paper to disentangle how the region's low performance on competition front would affect its level of economic development.

Figure 2: Key markets structures by region, 2010 (%)
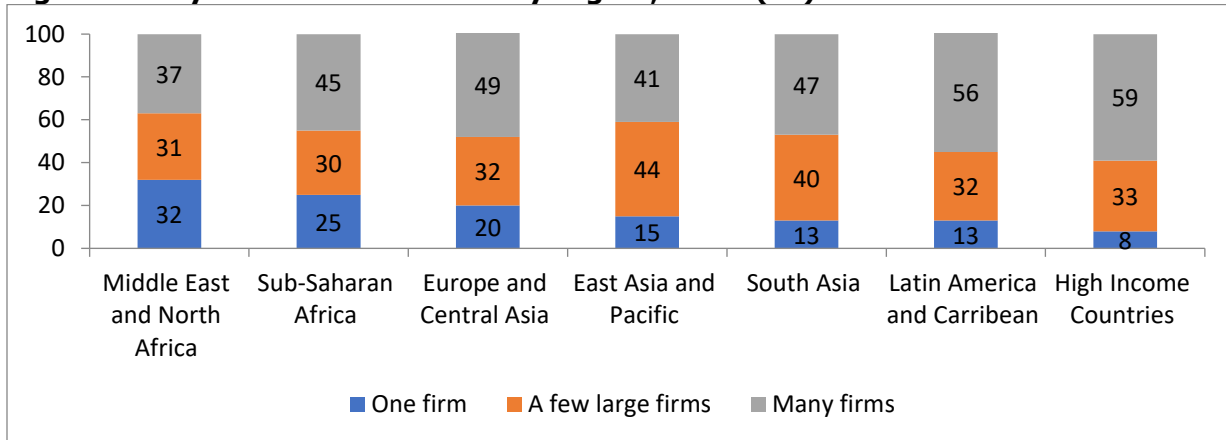
Source: World Bank (2012)

We argue that competition policy is likely to affect allocative efficiency. Hence, we expect that the latter policy will affect the structural component of GDP more than its cyclical component. Figure 3 seems to confirm our assumption: on average over the period 2007-2017, MENA countries with a competition law achieved a higher growth of their GDP structural component as well as a higher actual growth compared to those without competition law.

Figure 3: Cyclical, structural and actual growth in MENA countries, average 2007-2017
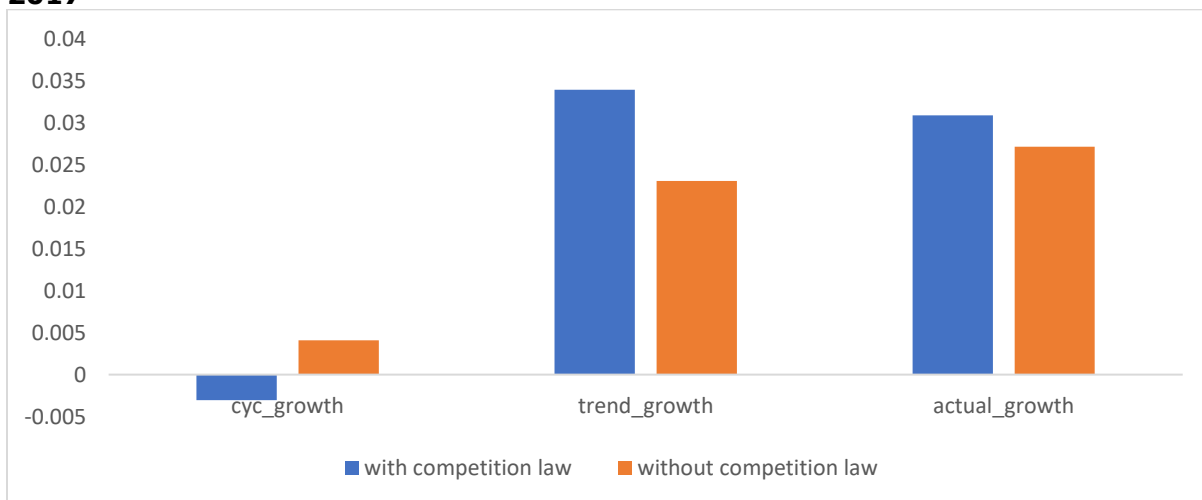
Source: Authors' calculations based on data from World Development Indicators, World Bank and MENA countries competition authorities' websites

We are particularly interested in competition indicators which assess competition policies or competition regimes at the economies wide level (i.e. on the macro level an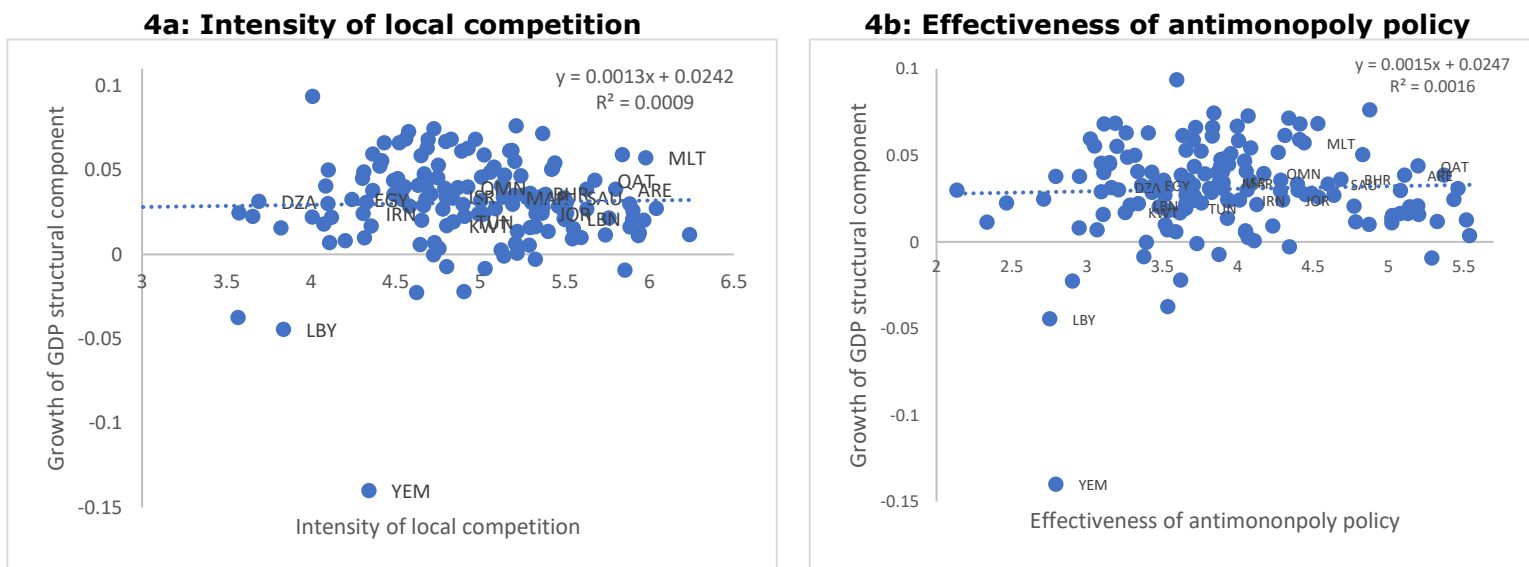d not on markets or sectors level) and their effect on economic growth. This kind of indicators coincides with our own created rules assessment index (see further details on our own created competition rules index in section 3). To our knowledge, there exists few indicators on that front.

The Global Competitiveness Report, published by the World Economic Forum, measures the competitiveness of the world economies through the Global Competitiveness Index (GCI). The latter is based on two data sources as follows: international organizations and national sources data, and its own executive opinion survey.[4] This means that these indicators are rather subjective, and their results should be treated with caution. GCI is based on twelve pillars including a pillar on goods market efficiency. The latter takes into consideration three sub-indices to measure the countries' performance with regards to competition: intensity of local competition, extent of market dominance and effectiveness of anti-monopoly policy. We believe that the three sub-indices provide a sort of a mirror image for competition policy in terms of inputs and outputs: one of them measures the effectiveness of the policy itself while the other two assess the market outcomes in terms of local competition and market dominance.

Figure 4 indicates that, on average over the period 2012-2017, the growth of GDP structural component was positively correlated to the intensity of local competition as well as the effectiveness of antimonopoly policy. Regarding MENA countries, many of them fall on the average line indicating that there is a room for improvement on that front.

Figure 4: GCI competition indices and growth of GDP structural component, average 2012-2017

4a: Intensity of local competition

$y = 0.0013x + 0.0242$
$R^2 = 0.0009$

4b: Effectiveness of antimonopoly policy

$y = 0.0015x + 0.0247$
$R^2 = 0.0016$

Source: Authors' calculations based on data from World Development Indicators, World Bank and Global Competitiveness Reports Database, World Economic Forum

Note: The related questions to these indices in the executive opinion survey are the following:
- Intensity of local competition: "In your country, how intense is competition in the local markets? [1 = not intense at all; 7 = extremely intense]"

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[4] This survey is carried in each country by local institutes with a reasonable understanding of the national business environment and that can reach out to leading business executives. The survey respondents are firms representing the main sectors of the economy, including agriculture, manufacturing industry, non-manufacturing industry, and services.

- Effectiveness of anti-monopoly policy: "In your country, to what extent does anti-monopoly policy promotes competition? [1 = does not promote competition; 7 = effectively promotes competition]"

In the particular case of developing countries like MENA countries, the lack of supportive institutional framework could be an impediment for competition law and policy's effective implementation. This includes an independent judiciary, good governance, independent media and professional and well-trained staff (Khemani, 2007). This seems to be the case in MENA countries where countries with competition laws have higher governance scores compared to those without competition laws on average over the period 2007-2017 (Figure 5). On a separate yet pertinent note, it is worth mentioning that accounting for governance scores corroborates in a way with the institutional effectiveness aspect in our rules assessment index (see further details on our own created competition rules index in section 3).

Figure 5: MENA countries governance scores, average 2007-2017
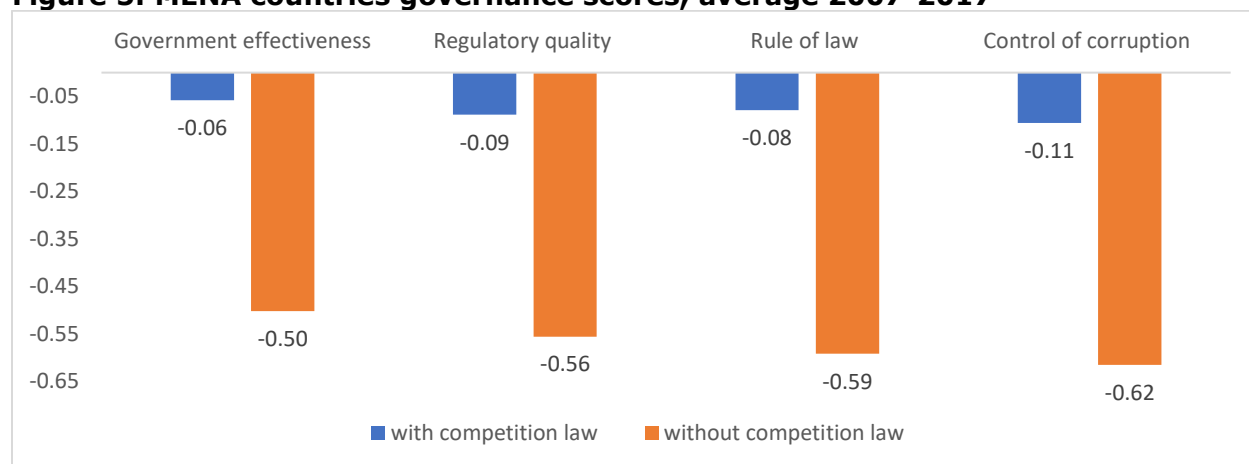
Source: World Governance Indicators, World Bank and MENA countries competition authorities' websites
Note: Governance estimates range from approximately -2.5 (weak) to 2.5 (strong) governance performance. Variables measure the following:
- Government effectiveness: Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- Regulatory quality: Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- Rule of law: Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- Control of corruption: Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

We argue that economic freedom is of direct relevance to competition policy. The latter is supposed to be distinct from crony capitalism and hence, markets should be open to all players regardless of their connections. Moreover, freedom to start business as well as the rule of law and regulations are necessary for economic freedom. All these aspects coincide with competition policy and are particularly relevant for the MENA region. In this context, Al Ismaily et al. (2017) argued that in Arab countries, economic reforms before the uprisings were sort of crony capitalism in the form of free markets whereby government elite control was replaced by crony capitalism elite control. Elites were granted privileges to state assets, monopolies, and opportunities for the regime's connections. This indeed raises questions on the effectiveness of competition policy in place in such circumstances.

To that effect, Economic Freedom Index measures the degree to which policies and institutions are supportive of economic freedom. The latter is based on several cornerstones including freedom to enter markets and compete. The summary index is supposed to range from 0 to 10.[5] Two main conclusions could be withdrawn as follows. First, the Arab Spring could represent an opportunity in favor of more reforms and control of corruption, and hence in favor of economic freedom. However, post uprisings, particularly over the period 2011 till 2016, most MENA countries witnessed a decline in their index score with the MENA average score reaching 6.6 in 2016 down from 6.8 in 2011 (Figure 6). It is also worth mentioning that Tunisia and Egypt witnessed the most noticeable decline in their scores despite being the most affected by the uprisings.[6] Second, economic freedom seems to be positively correlated with economic growth on average overt the period 2011-2016 in MENA countries.

Figure 6: Economic freedom index in MENA countries

6a: Economic freedom index in MENA countries, 2011-2016
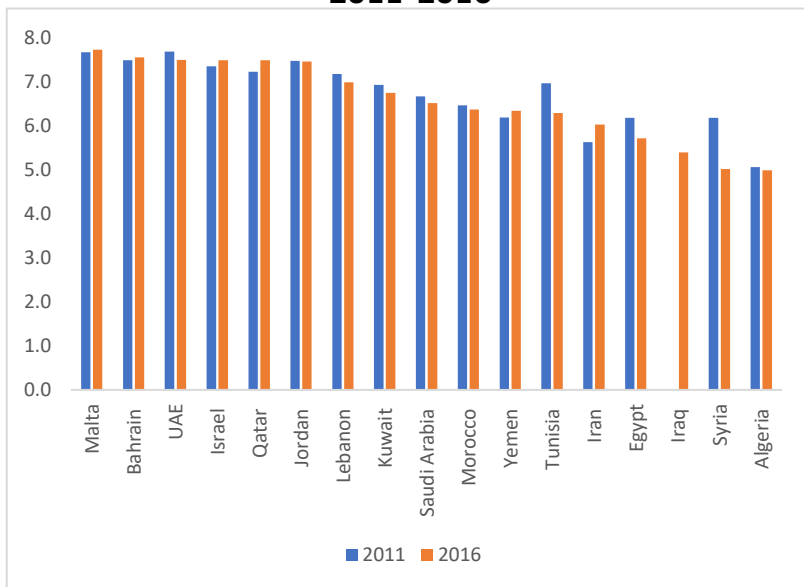
6b: Economic freedom index and growth of GDP structural component in MENA countries, average 2011-2016
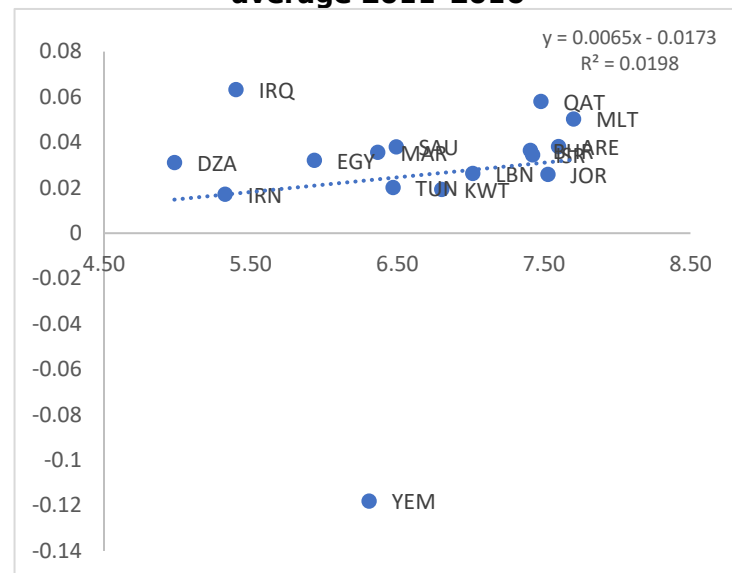
Source: Economic Freedom Index dataset, Fraser Institute and World Development Indicators, World Bank.

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[5] The index incorporates 42 distinct variables. Each component (and sub-component) is placed on a scale from 0 to 10 that reflects the distribution of the underlying data. When sub-components are present, the sub-component ratings are averaged to derive the component rating. The component ratings within each area are then averaged to derive ratings for each of the five areas. In turn, the five area ratings are averaged to derive the summary rating for each country.

[6] following Syria which witnessed the most important decline in its score but is rather particular case since it did not reach yet a political settlement

3. Competition Rules Index

We create indices to assess the effectiveness of MENA countries competition laws where we follow the same specifications of Youssef and Zaki (2018, *forthcoming*). They undertook this competition rules assessment for a group of Arab countries, namely Djibouti, Egypt, Jordan, Morocco, Tunisia and Yemen and we are extending their assessment for the remaining MENA countries.

The specifications for this competition rules assessment are as follows: first, the assessment exclusively accounts for the competition law and its subsequent amendments for each country over the years (see Annex 2 for a list of MENA countries competition laws and amendments). [7] Hence, competition rules mentioned elsewhere in the legislative body for each country are not accounted for. Second, this assessment accounts for three categories: enforcement, advocacy and institutional effectiveness. Under these three categories, eight main dimensions will be considered with equal weights, where each one of them will be assessed on binary basis i.e. taking the value one if the criterion exist and zero otherwise. In this context, it is worth clarifying that there are two composite sub-indices, namely enterprises enforcement and independence, where the same binary rationale applies for their components: If the criterion exists, a score of 0.25 is assigned in the case of the enterprises enforcement category and 0.2 in the case of the independence category, and zero otherwise. The overall rules index is supposed to range from 0 (being the lowest rank) to 8 (being the highest rank).

Table 5 provides a brief description for each category and dimensions of the rules assessment index. Annex 1 provides the details of the assessment methodology. We only present in this section findings based on the latest version of the competition law for each country while Annex 3 presents the detailed scores for our competition rules assessment. [8]

- #### Enforcement against anticompetitive acts

Regarding the enforcement against anticompetitive acts, the Maltese followed by the Algerian and Jordanian legislations fare better on that front compared to the rest of MENA countries legislations (Table 2).

Table 2: Rules assessment – Index on enforcement against anticompetitive acts

	DZA	DJI	EGY	ISR	IRQ	JOR	KWT	MLT	MAR	OMN	QAT	SAU	SYR	TUN	UAE	YEM
Enforcement against anti-competitive acts	2	1.25	1.75	1.5	0.75	2	1.75	2.5	1.75	1.75	1.75	1.75	1.5	1.5	0.5	0.5
Enterprises	1	0.25	0.75	0.5	0.75	1	0.75	0.5	0.75	0.75	0.75	0.75	0.5	0.5	0.5	0.5
Abuse of dominance	0.25	0	0.25	0	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0	0	0	0
Hard-core cartels	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Other agreements	0.25	0	0.25	0	0	0.25	0	0	0	0	0	0	0	0	0	0
Mergers	0.25	0	0	0.25	0.25	0.25	0.25	0	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
State executive bodies	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Fines	1	0	1	1	0	1	1	1	1	1	1	1	1	1	0	0

Source: Constructed by the authors based on MENA countries latest competition legislations

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[7] It is worth mentioning that this Djiboutian Law regulates competition related issues as well as consumer protection issues. This is not the case with the rest of MENA countries competition legislations.
[8] The assessment of the earlier versions of the competition law for each country is used in the empirical exercise of the effect of competition rules on economic growth in MENA countries as it will be further elaborated later.

Our enterprises enforcement indices results suggest the following: first, **hard core cartels** seem to be an area of consensus for all legislations in the region where they all have clear and well elaborated clauses on that front. Second, for the **abuse of dominance,** despite the several amendments, the latest version from the Tunisian Competition Law (Law No. 36 of the year 2015) did not mention any economic criteria to define dominance in the relevant market, not even through market shares. However, the law has elaborated the actions which should be considered as abuse of dominance (article 5). This has been also the case with the Djiboutian legislation (article 4), the Emirati one, the Israeli one, the Syrian one (article 6) and the Yemeni one (article 7). In the Algerian case, earlier draft of the law (Law No. 95-06 of the year 1995) did not have for definition for dominance yet this was accounted for in the subsequent versions. Third, the Algerian, The Egyptian and the Jordanian legislations fare better compared to their peers concerning **other horizontal and vertical agreements.** For instance, these three legislations are the only ones which have an explicit rule regulating this kind of agreements. It is also worth mentioning that earlier draft of the Algerian law (Law No. 95-06 of the year 1995) did not account for these agreements and they were only included in the subsequent versions later on. Fourth, Djibouti, Egypt and Malts's legislations are the weakest compared to their peers with regards to **merger controls**. To that effect, the Djiboutian and the Maltese legislations did not mention mergers in any of their clauses. As for the Egyptian one, it specifies that in cases of mergers and acquisitions, companies are only requested to notify the Egyptian Competition Authority (ECA) post action (article 19 from the Law no. 3 of the year 2005).[9] This means that ECA does not have the control of approving or prohibiting such transactions. It is worth mentioning that the 2008 amendment of the law introduced new fines for the failure of ECA notification in the cases of mergers and acquisitions (article 22 from the Law No. 190 of the year 2008). Yet, the Egyptian legislation and its subsequent amendments have never introduced a merger control program. We believe that this represents a major challenge to the Egyptian competition policy performance.

As for the **state executive bodies,** the Maltese legislation fares better compared to the rest of the group where it stipulated in its 2000 amendment that the provisions of this act shall apply to any government departments or any corporate in which the government holds a controlling interest (article 27 of the Act No. XXVIII of the year 2000 amending article 30 from the principal Act No. XXXI of the year 1994). It is also worth mentioning that the Kuwaiti, Qatari and Saudi legislations are particularly weak on that aspect since they are even not applied on the activities of state-owned enterprises (SOEs) (Qatar: article 5 of the Law No. 19 of the year 2006, Kuwait: article 6 of the Law No. 2 of the year 2012, Saudi Arabia: article 3 of the Law No. M/25).

Regarding **the fines**, it seems that generally our group of countries legislations stipulated a variety of fines which are sufficient to serve as a deterrent for the most harmful violations, except for the Djiboutian, the Emirati and the Yemeni legislations. These latter legislations only specified a nominal ceiling for the fines.

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[9] The Moroccan Law No. 104-12 of the year 2014 stipulates that the Competition Council has to be notified with mergers before the realization of the operation only if certain conditions apply (article 12). This is also similar to the Jordanian law; the concentration operation has to be approved by the Minister only if the total share of the Enterprise or Enterprises concerned in the operation exceeds 40% of the total transactions in the market (Article 9 from the law no. 33 of the year 2004). As for the Egyptian law, it requires notification for all mergers operations post action.

- **Advocacy**

Table 3: Rules assessment – Index on advocacy

	DZA	DJI	EGY	ISR	IRQ	JOR	KWT	MLT	MAR	OMN	QAT	SAU	SYR	TUN	UAE	YEM
Advocacy	1	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0
Infrastructure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	1	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0

Source: Constructed by the authors based on MENA countries latest competition legislations

Our advocacy index results indicate that this is generally a weak area in MENA countries competition legislations (Table 3). For instance, Algeria, Egypt, Malta and Tunisia fare better compared to the rest of MENA countries with regards to the advocacy rules in general.

On the **infrastructure,** competition legislations in our group of countries did not grant them the right to introduce relevant new laws. Yet, some of the legislations granted their respective authority the right to give its opinion on that front. This includes the Algerian, the Egyptian, the Emirati, the Jordanian, the Kuwaiti, the Moroccan and the Qatari legislations (Algeria: article 36 of the Law No. 08-12; Egypt: article 11 of the Law No. 3 of the year 2005; Jordan: article 14 of the Law No. 3 of the year 2004; Kuwait: article 10 of the Law No. 2 of the year 2012; Morocco: article 15 of the Law No. 6-99 of the year 2000; Qatar: article 8 of the Law No. 19 of the year 2006; Tunisia: article 11 Law No. 36 of the year 2015; United Arab Emirates: article 13.3 of the Law No. 4 of the year 2012).

Regarding the **education**, the Algerian, the Egyptian and the Tunisian laws fare better compared to their peers. The Algerian law specified that the authority has to prepare an annual report and to address it to the government and the Minister of Trade. Yet, it also specified that this report has to be publicly shared a month after being shared with the government. As for the Egyptian Law, it stipulates that ECA is the entity entitled to preparing an annual report on the activities of the Authority and its future plans and recommendations to be submitted to the Competent Minister upon its approval by the Board of Directors. A copy thereof shall be sent to the Parliament and the Shura Council. The law also states that ECA shall issue periodicals containing decisions, recommendations, procedures, and measures adopted and pursued by the Authority as well as other matters relating to the Authority. Similarly, the Tunisian Law No. 36 of the year 2015 specified that the Authority has to prepare an annual report and to present to the People's Assembly, the Prime Minister (article 14). In addition, all the Authority's decisions and opinions have to be published on the Authority's website. Other legislations like the Emirati, Iraqi, Kuwaiti, Omani, Qatari, Syrian and Saudi Arabian legislations mentioned that an annual report with the authority's activities should be only shared with either the Minister of Trade and Industry or the Cabinet of Ministers (Iraq: article 7 of the Law No 14 of the year 2010; Kuwait: article 10 of the Law No. 2 of the year 2012; Oman: article 10 of the Law No. 2 of the year 2018; Qatar: article 8 of the Law No. 19 of the year 2006; Saudi Arabia: article 9.7 of the Law No. M/24 of the year 2014; Syria article 13B of the Law No. 3 of the year 2008; UAE: article 13 of the Law No. 4 of the year 2012). Yet, these legislations did not specify that this report has to be shared with the Parliament or the public in general.

- **Institutional effectiveness**

Table 4: Rules assessment – Index on institutional effectiveness

	DZA	DJI	EGY	ISR	IRQ	JOR	KWT	MLT	MAR	OMN	QAT	SAU	SYR	TUN	UAE	YEM
Institutional effectiveness	2.4	0	1.4	2.2	0.2	1	2	2.2	1	1.4	1	1	2.4	2.4	1	0
Independence	0.4	0	0.4	0.2	0.2	0	0	0.2	0	0.4	0	0	0.4	0.4	0	0
Appointment of the head	0	na	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dismissal of the head	0	na	0.2	na	0	0	0	0	0	0	0	0	0	0	0	0
Reelection of the head	0	na	0	na	0	0	0	0	0	0	0	0	0	0.2	0	0
Government supervision	0.2	na	0	0.2	0	0	0	0.2	0	0.2	0	0	0.2	0.2	0	0
Budget	0.2	0	0.2	0	0.2	0	0	0	0	0.2	0	0	0.2	0	0	0
Appeal	1	0	0	1	0	1	1	1	1	0	0	1	1	1	1	0
Transparency	1	0	1	1	0	0	1	1	0	1	1	0	1	1	0	0

Source: Constructed by the authors based on MENA countries latest competition legislations

Before elaborating the criteria related to **independence**, we would like to highlight some specificities in some countries legislations as follows: First, the Jordanian Competition Directorate, the Qatari Competition Protection and Anti-Monopoly Committee, the Emirati Competition Regulation Committee and the Yemeni Competition Authority seem to be overall the least independent authorities compared to the rest of the group given their particular structure. They are parts of their respective Ministry of Industry, Trade and Supply. In addition, the relevant Minister is the Chairperson of the Advisory Board of the Competition Directorate in the Jordanian case and the head of the authority in the Yemeni case. This is also the case in the Saudi Arabian case: it is claimed that the General Authority for Competition is independent while the head of the authority is the Minister of Trade and Investment (article 8 of the Law No. M/24 of the year 2014). In this regard, it is argued that competition law is supposed to apply on all sectors and entities practicing an economic activity. Therefore, it is better to have the authority as an independent entity isolated from political interference and stakeholders influence instead of being a division or a department within a government ministry (Khemani, 2007). This particular structure has accordingly affected these above-mentioned legislations scores regarding all sub-components of independence assessment. Second, the Omani case is unique in the following sense: it enacted a competition law in 2014 which did not account for any institutional aspects in any of its clauses. In addition, the General Authority for Consumer Protection was the entity entitled to implement the competition law. Four years later, a new legislation (Law No. 2 of the year 2018) was enacted to create a separate competition authority. This latter legislation regulated institutional aspects but did not update any of the other clauses which were in the earlier one. Third, the Maltese case is interesting in the sense that its relevant authority started as government department in 1994 but later in 2011 an independent authority has been established.

As for the independence criteria, first regarding **the head appointment[10],** this seems to be a weak aspect in all MENA countries legislations where none of them stipulated that the head is appointed/answerable to the parliament. Second on **the head reelection**, the Tunisian legislation fares better compared to the rest of the group since it is the only one that specified that the head of the authority is only appointed for five years and his/her term is not subject to renewal (article 13). Third for **the dismissal procedures of the head of the authority**, the Egyptian law fares better compared to its peers. For instance, it is the only legislation

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[10] We noticed in the Maltese and Israeli legislations an interesting specification for the Board members and the Mergers Advisory Committee, where there are academic specifications for the members. We believe this is a good practice compared to specifying members by affiliations.

among the group which elaborated that the Board membership (which includes the head of the authority) does not come to an end except by resignation or in case the member is involved in a criminal judgment. And hence, a legal procedure exists for dismissal of the head of the authority. As for the rest of MENA countries legislations, they did not account for this aspect. Fourth for **the Government supervision of the authority**, the Jordanian, the Qatari and the Yemeni authorities are in general the weakest among the group because of their underlying structure being already part of the Government. As for the rest of the legislations, we assessed whether they stipulate that their respective authorities' boards should include government's representatives who are involved in the decision-making process. Algerian, Malta, Omani, Syrian and Tunisian legislations fare better compared to the rest of the group in this regard where they are the only legislations among the group not stipulating to include government representatives in the authority's board (Algeria: article 23 of the Law No. 03-03 of the year 2003; Malta: article 9 of Act No. VI of the year 2011Syria: article 11b of the Law No. 7 of the year 2008; Tunisia: article 13 of the Law No. 36 of the year 2015). Finally, for the **budget,** the Iraqi, Egyptian, Omani, Syrian laws fare better compared to the rest of the group where they either stipulated that the authority should have an independent budget, or the authority enjoys financial autonomy (Iraq article 4 of the Law No. 14 of the year 2010; Egypt article 14 of the Law No. 3 of the year 2005; Oman: article 14 of the Law 2 of the year 2018; Syria: article 22 of the Law No. 7 of the year 2008). The rest of the group legislations did not mention the budget in any of their clauses.

Regarding the **appeal**, the Djiboutian, the Egyptian, the Iraqi, the Omani, the Qatari and the Yemeni legislations seem to be weakest compared to their peers. For instance, these legislations did not specify a rule in this regard.[11]

Regarding **transparency**, The Egyptian legislation has clearly elaborated several aspects in this regard. Article 11 stipulates that ECA is the entity entitled to preparing an annual report on the activities of the Authority and its future plans and recommendations to be submitted to the Competent Minister upon its approval by the Board of Directors. A copy thereof shall be sent to the People's Assembly and the Shura Council. The same article also states that ECA shall issue periodicals containing decisions, recommendations, procedures, and measures adopted and pursued by the Authority as well as other matters relating to the Authority. As for the Tunisian law, it specified that the Authority has to prepare an annual report and to present to the People's Assembly, the Prime Minister (article 14 from the Law No. 36 of the year 2015). In addition, all the Authority's decisions and opinions have to be published on the Authority's website.[12] The Omani and Syrian legislations specified that all the authority's decisions should be published in two daily journals (Oman: article 27 of the Law 67 of the year 2014 and Syria: article 14 of the Law No. 3 of the year 2008).

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[11] We would like to highlight here that our assessment exclusively accounts for competition laws and these particular cases did not mention appeal regulation in any of their clauses.

[12] It is worth mentioning that the earlier versions of the Tunisian Law did not account for this transparency aspect before. The 1999 amendment of the Law No. 64 of the year 1991 has only mentioned that the Authority has to prepare an annual report and send it to the President.

- Overall MENA countries competition rules assessment

Figure 7: Overall rules assessment in MENA countries
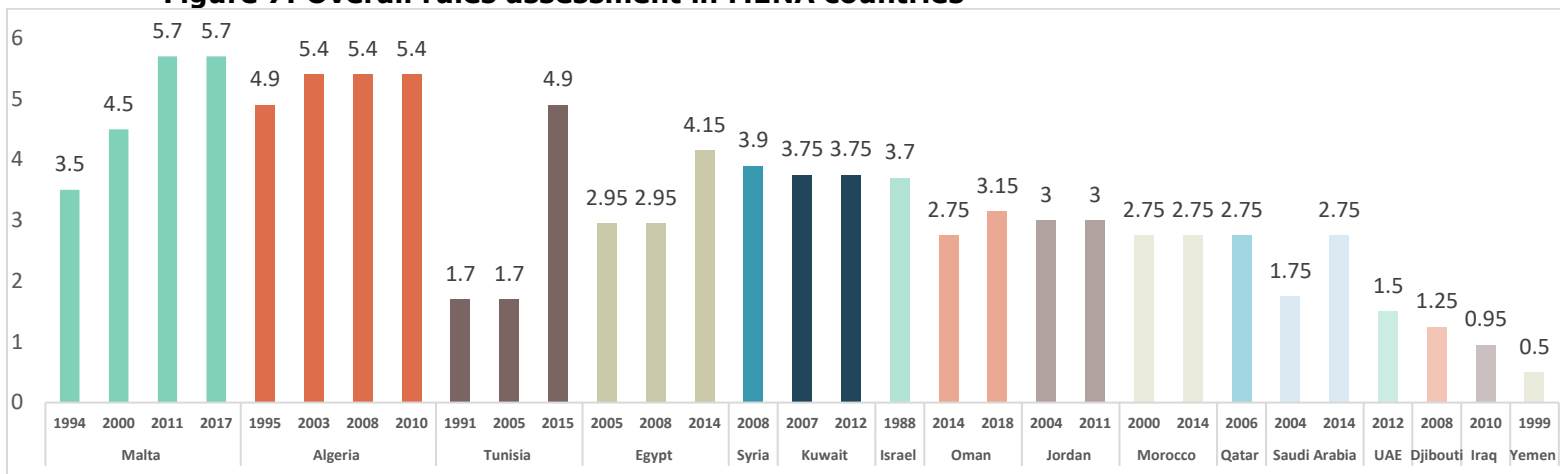
Source: Constructed by the authors based on MENA countries competition legislations

The overall index for the rules is supposed to range from 0 (being the lowest rank) to 8 (being the highest rank). To that effect, three conclusions could be withdrawn based on our rules assessment (Figure 7): First, the overall assessment of MENA countries competition legislations seems to be broadly average. For instance, the Maltese and the Algerian legislations are the best performers among the group whereas the Iraqi and the Yemeni legislations are the weakest. This suggests that there are several potential areas for reforms on the legislative front. Second, all MENA countries revised their laws with some improvements in different aspects, except Djibouti, Iraq, UAE, Yemen.[13] Yet, these laws amendments are not necessarily reflected as an improvement in their overall index scoring. In this context, Egypt and Tunisia indices witnessed the most noticeable improvement in their value following their latest amendment in comparison to their earlier drafts. Third, regarding MENA countries performance for the three categories we noticed that advocacy is mostly the weakest category. This is an interesting finding since Dutz and Vagliasindi (2002 and 2000) considered the advocacy aspects as relevant to countries in transition and hence, they could be an area of particular focus for the latter. Yet, it seems that this is not the case in MENA countries legislations. In addition, our indices results suggest that most MENA countries competition legislations score better in the enforcement against anti-competitive acts compared to the institutional effectiveness, except for Algeria, Israel, Kuwait, Syria, Tunisia, and UAE (see Annex 3 for further details).

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[13] Israel also introduced an amendment in 2013 which we did not account for in our assessment (see Annex 2 for further details).

Table 5: Competition rules assessment criteria

Category	Main dimension	Description
1. Enforcement against anti-competitive acts	**Enterprises**	**composite index formed by adding 0.25 for**
		(1) Abuse of dominance if definition of dominance includes economic criteria regarding relevant market beyond market share- and abuse of dominance rather than dominance alone is prohibited,
		(2) Hard-core cartels if exemptions explicitly exclude practices that significantly restrain competition,
		(3) Other agreements if horizontal and vertical agreements are prohibited only if they limit competition,
		(4) Mergers if only those leading to significant limitation of competition are illegal
	State executive bodies	1 if anti-competitive activities by regional or local state executive and governing bodies are prohibited
	Fines	1 if penalties are not unduly limited
2. Advocacy	**Infrastructure**	1if the agency has the power either to change rules or to introduce new laws to promote competition (including infrastructure regulation)
	Education	1 if the agency has mandate or obligation to disseminate annual reports/periodic information to Parliament and/or the public at large
3. Institutional effectiveness	**Independence**	**composite index formed by adding 0.2 for**
		(1) Head appointment: 0.2 if the head of the competition authority is formally independent (appointed/answerable to parliament)
		(2) Head dismissal: 0.2 if the head cannot be removed from office except by legal procedures
		(3) Head reelection: 0.2 if the head terms are not renewable
		(4) Government supervision: 0.2 if members of the government do not have the right to give instructions to the competition agency
		(5) Budget: 0.2 if the laws grants minimal independence in budget
	Appeal	1 if the law ensures right of appeal to an independent entity
	Transparency	1 if all decisions are required to be published or publicly available

Source: Youssef and Zaki (2018, *forthcoming*)

4. Econometric Specification

Following Gutmann and Voigt (2014), we will study the effect of competition laws on GDP growth by decomposing it to cyclical and structural components. Using a panel of MENA countries over the period 1980-2017, our analysis includes a 2SLS regression, where i is the country, t is the time as follows (Equation 1 below):

$$Y_{it} = \beta_0 + \beta_1 Law_{it} + \beta_2 X_{it} + e_{it} \qquad (1)$$

Regarding the dependent variable, we do believe that competition policy is likely to affect allocative efficiency. Hence, we expect that competition laws will affect the structural component of GDP more than its cyclical component. We will calculate the latter using the widely known and common technique of the Hodrick Prescott (HP) linear filter (1997).[14] Regarding the independent variables, as a basic model we will code the legal basis of MENA countries competition laws by creating a dummy variable (Law_{it}) which takes the value 1 if such law exists and 0 otherwise. X_{it} is a vector of time-variant control variables affecting economic growth (schooling rate as a measure of human capital, physical investment as a measure of capital, natural resources and arable land as a measure of endowments).

We will contrast this basic model's results with a second model where we estimate the following regression:

$$Y_{it} = \beta_0 + \beta_1 Comprules_{it} + \beta_2 X_{it} + e_{it} \qquad (2)$$

In this second model, instead of the dummy variable (Law_{it}), we will use our own created competition rules assessment index ($Comprules_{it}$) (see further details on our own created competition rules index in section 3, Annex 1 and Annex 3). $Comprules_{it}$ is equal zero for countries which did not introduce a competition law.

In addition, competition laws effects are supposed to materialize or become stronger post adoption of the law. This oldness or age effect also applies on the existence of a competition authority where its deterrence effect increases post its creation. Therefore, we will account for this age effect by estimating the following regressions:

$$Y_{it} = \beta_0 + \beta_1 Age\_law_{it} + \beta_2 X_{it} + e_{it} \qquad (3)$$

$$Y_{it} = \beta_0 + \beta_1 Age\_authority_{it} + \beta_2 X_{it} + e_{it} \qquad (4)$$

The oldness or age of the competition law (Age_law_{it}) is equal to zero until the law is introduced and positive values counting the years afterwards. The same is also applied to the oldness or

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[14] The HP filter minimizes the following equation:

$$Min \sum_{t=1}^{T} (y_t - y_t^*)^2 + \lambda \sum_{t=2}^{T-1} [(y_{t+1}^* - y_t^*) - (y_t^* - y_{t-1}^*)]^2$$

where y is the logarithm of real GDP and y* is the logarithm of potential real GDP. λ is a weighting factor that determines the degree of smoothness of the trend. The standard procedure is to set λ equal to 6.25 for annual data following the Ravn-Uhlig (2002) rule. T is the length of the time series. This univariate filter hence estimates the series that minimizes the deviation between actual and potential output while constraining the rate of change in potential output for the whole sample of T observations. Alternatively, it decomposes or filters raw GDP data into cyclical and trend or structural components (See chapter 1 in Galal et al., 2017 for related findings on South Med countries GDP cyclical and structural components performance post uprisings).

age of the competition authority ($Age\_authority_{it}$).[15] Age_law_{it} and $Age\_authority_{it}$ are equal to zero for countries that have not introduced a competition law. It is also worth clarifying that age of the law and age of the authority are not necessarily the same (as per our findings in Table 1, section 2 on stylized facts) and that is why we differentiate between them in our regressions.

Compared to the existing literature, an important value added of this paper is the consideration of the endogeneity issue that might arise between competition laws and economic growth. To that effect, we will employ an instrumental variables approach using the following instruments which are supposed to explain competition variables. First, the legal origins, whether civil or common law, have important economic consequences. They influence resource allocation through their effect on finance, labor markets, and competition (La Porta et al., 2008). Second, we follow the methodology of Acemoglu and Robinson (2014) in instrumenting endogenous institutions by using the logged capped settler mortality; the log population density in 1500; and the share of the Muslim population in 1900. Indeed, they argue that inclusive political institutions, which are sufficiently centralized and pluralistic, tend to establish economic institutions that efficiently allocate resources, reduce barriers to entry and adjust markets functioning.

5. Empirical Findings

Table 6 shows the effect of different variables on GDP and its components (cyclical and trend). While the effect of investment is greater on the cyclical component than on the trend one, most of the other variables exert a more pronounced and more significant effect on the trend component. Indeed, the effect of schooling rate on the trend component is positive and statistically significant. This result is in line with the new theory of economic growth developed in the early 1980s emphasizing the importance of education and innovation (elements of human capital) in long-term economic growth (Lucas and Mankiw, 1988 et al, 1992). Furthermore, scarce and limited factors of production (arable land and natural resources) tend to reduce the trend of GDP in the long run. This also confirms the "curse of natural resources hypothesis" (Sachs and Warner, 1995) since resource-rich countries MENA countries have neither achieved economic prosperity nor became developed countries and their growth performance has been extremely volatile. The same analysis applies on arable land that suffers from drought, lack of technical progress and urbanization. All these factors have led to considerable losses of arable land throughout the region. Openness variable is in general insignificant since the MENA region's exports are chiefly concentrated in oil or traditional products with a low value-added.

Turning to our variables of interest, Table 6 shows that, interestingly, while the trend component is positively affected by competition variables, the latter have a negative impact on the cyclical component of GDP. In fact, the cyclical part of GDP is likely to decrease reflecting the adjustment cost implied by the compliance with competition rules. By contrast, as it was presented in Figure 1, competition rules lead to a better allocation of resources improving the structure of the economy and hence the trend component of GDP increases. This result is confirmed by the existence of a competition law (*Law),* our own created competition rules index that was presented in Section 3 (*Comp rule*) and by two variables measuring the oldness of the law or the authority in charge of the competition policy (*Age law* and *Age autho,* respectively). Finally, given the high collinearity between these four variables (0.7-0.9), it was impossible to introduce them in the same regression. This is why, using the

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[15] We were not able to confirm the exact date of creation of competition authorities in Malta, Saudi Arabia, Syria and UAE. Hence, we assume they were created at the same time of the competition law adoption.

principal component analysis, we created an index combining the four variables and used it as a comprehensive measure of competition (measuring the existence of a law or not, the quality of the rules and the age of both the law and the authority). In line with our previous results, the effect of this index is positive and significant on the trend component of GDP and negative on the cyclical one.

Obviously, our competition measures can suffer from an endogeneity. This is why we controlled for this using two sets of instruments. Table 7 shows the effect of competition measures on growth when the former are instrumented by the legal origin (whether it is French or British). The argument behind these instruments is that the legal origins, whether civil or common law, influence resource allocation through their effect on finance, labor markets, and competition (La Porta et al., 2008). Our findings remain robust since the trend component is still positively affected by competition variables whereas the cyclical one is not affected by any competition measure.

Second, we follow the methodology of Acemoglu and Robinson (2014) in instrumenting endogenous institutions by using the logged capped settler mortality; the log population density in 1500; and the share of the Muslim population in 1900 (see Table 8). They argue that inclusive political institutions, which are sufficiently centralized and pluralistic, tend to establish economic institutions that efficiently allocate resources, reduce barriers to entry and adjust markets functioning. This instrumentation does not affect the robustness of our findings since competition variables have a positive effect on the trend component and negative one on the cyclical one.

In a nutshell, different competition measures exert a positive and statistically significant effect on the trend component of GDP, while its effects on the cyclical component is sometimes negative. This result is robust for the four measures of competition we use (the existence of the law, its age, the age of the competition authority and our own created competition rules index we construct) and after we control for the endogeneity of the competition rules.

Table 6: Effect of Competition of GDP components (1)

	Comp. Rules			Age of law			Age of authority		
	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)
Ln(Inv)	0.527***	0.678**	0.464***	0.472***	0.578*	0.416***	0.501***	0.356	0.454***
	(0.0311)	(0.307)	(0.0341)	(0.0317)	(0.313)	(0.0354)	(0.0275)	(0.286)	(0.0315)
Ln(School)	0.340***	-0.133	0.397***	0.216***	-0.0546	0.281***	0.245***	-0.396	0.325***
	(0.0542)	(0.478)	(0.0593)	(0.0567)	(0.532)	(0.0634)	(0.0501)	(0.500)	(0.0575)
Ln(Arable)	-0.0372***	-0.0325	-0.0388***	-0.0342***	-0.0469	-0.0352***	-0.0315***	-0.0563	-0.0324***
	(0.00632)	(0.0535)	(0.00692)	(0.00603)	(0.0536)	(0.00674)	(0.00569)	(0.0539)	(0.00653)
Ln(Open)	-0.124**	-0.496	-0.0552	-0.0781	-0.489	-0.0110	-0.0358	-0.376	0.0264
	(0.0617)	(0.631)	(0.0675)	(0.0597)	(0.643)	(0.0667)	(0.0567)	(0.648)	(0.0650)
Ln(Nat. Res.)	-0.0563**	0.270	-0.111***	-0.0782***	0.199	-0.131***	-0.0992***	0.114	-0.149***
	(0.0280)	(0.279)	(0.0307)	(0.0272)	(0.279)	(0.0303)	(0.0258)	(0.277)	(0.0296)
Ln(Comp. rules)	0.152***	-0.633***	0.178***						
	(0.0220)	(0.234)	(0.0241)						
Ln(Age law)				0.138***	-0.321**	0.147***			
				(0.0158)	(0.158)	(0.0176)			
Ln(Age autho.)							0.149***	-0.165	0.150***
							(0.0135)	(0.143)	(0.0155)
Constant	11.92***	8.217	12.92***	13.46***	10.42	14.27***	12.53***	16.56***	13.08***
	(0.677)	(6.796)	(0.741)	(0.717)	(7.092)	(0.801)	(0.585)	(6.125)	(0.671)
Observations	306	155	306	306	155	306	306	155	306
R-squared	0.832	0.080	0.806	0.845	0.059	0.814	0.863	0.040	0.826
Number of codes	14	14	14	14	14	14	14	14	14

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Effect of Competition of GDP components (2)

	Existence of law			General Index		
	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)
Ln(Inv)	0.527***	0.591*	0.462***	0.469***	0.605*	0.408***
	(0.0313)	(0.323)	(0.0342)	(0.0310)	(0.314)	(0.0344)
Ln(School)	0.337***	-0.208	0.391***	0.223***	-0.0753	0.280***
	(0.0547)	(0.500)	(0.0597)	(0.0548)	(0.516)	(0.0608)
Ln(Arable)	-0.0358***	-0.0431	-0.0372***	-0.0356***	-0.0440	-0.0367***
	(0.00633)	(0.0539)	(0.00691)	(0.00595)	(0.0536)	(0.00660)
Ln(Open)	-0.140**	-0.434	-0.0743	-0.0814	-0.496	-0.0121
	(0.0618)	(0.640)	(0.0674)	(0.0587)	(0.641)	(0.0651)
Ln(Nat. Res.)	-0.0334	0.183	-0.0844***	-0.0756***	0.211	-0.130***
	(0.0278)	(0.278)	(0.0304)	(0.0267)	(0.279)	(0.0296)
Law	0.215***	-0.715*	0.258***			
	(0.0321)	(0.372)	(0.0351)			
Index				0.148***	-0.347**	0.162***
				(0.0158)	(0.160)	(0.0176)
Constant	11.93***	10.48	12.99***	13.62***	9.644	14.58***
	(0.686)	(7.261)	(0.748)	(0.702)	(7.122)	(0.779)
Observations	306	155	306	306	155	306
R-squared	0.830	0.056	0.806	0.850	0.063	0.822
Number of codes	14	14	14	14	14	14

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Instrumenting Competition Measures by the Legal Origin

	Comp. Rules			Age of law			Age of authority			General Index		
	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)
Indicator		-0.794		0.253***	-0.350	0.295***	0.306***	-0.418	0.358***	0.277***	-0.392	0.324***
		(0.529)		(0.0276)	(0.236)	(0.0317)	(0.0352)	(0.287)	(0.0425)	(0.0305)	(0.263)	(0.0347)
Constant	9.305***	5.186	9.850***	16.89***	9.538	18.72***	15.90***	11.14	17.57***	17.38***	8.285	19.30***
	(0.605)	(12.96)	(0.669)	(1.136)	(10.41)	(1.304)	(1.097)	(9.672)	(1.325)	(1.191)	(11.15)	(1.356)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	306	155	306	306	155	306	306	155	306	306	155	306
Num of code	14	14	14	14	14	14	14	14	14	14	14	14

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Instrumenting Competition Measures – Acemoglu et al. (2014)

	Comp. Rules			Age of law			Age of authority			General Index		
	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)	Ln(GDP)	Ln(GDP cyc)	Ln(GDP trend)
Indicator	0.649***	-1.892***	0.705***	0.341***	-1.089***	0.370***	0.335***	-1.201**	0.364***	0.365***	-1.137***	0.397***
	(0.129)	(0.702)	(0.140)	(0.0387)	(0.380)	(0.0437)	(0.0422)	(0.478)	(0.0484)	(0.0461)	(0.408)	(0.0510)
Constant	21.80***	-30.16	23.12***	21.05***	-31.54	22.31***	16.06***	-19.98	16.88***	21.30***	-31.43	22.59***
	(3.595)	(20.49)	(3.888)	(1.976)	(19.74)	(2.234)	(1.640)	(18.36)	(1.882)	(2.223)	(20.24)	(2.462)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	140	68	140	140	68	140	140	68	140	140	68	140
Num of code	5	5	5	5	5	5	5	5	5	5	5	5

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6. Conclusion

This paper represented an attempt to empirically assess the impact of competition laws in the MENA region on economic growth. To that effect, we first constructed our own indices to assess the effectiveness of MENA countries competition laws regarding three categories: enforcement, advocacy and institutional effectiveness (we extended Youssef and Zaki, 2018 *forthcoming* assessment for the rest of MENA countries). Our indices suggest the following: first, the overall assessment of MENA countries competition legislations seems to be broadly average with the Maltese and the Algerian legislations the best performers among the group while the Iraqi and the Yemeni legislations are the weakest. This suggests that there are several potential areas for reforms on the legislative front. Second, most MENA countries revised their laws with some improvements in different aspects. Yet, this was not necessarily reflected as an improvement in their overall index scoring. In this context, Egypt and Tunisia indices witnessed the most noticeable improvement in their value following their latest amendment in comparison to their earlier drafts. Third, in terms of MENA countries legislations performance in the three categories, advocacy seems to be an area of weakness. Moreover, most of these countries legislations score better in the enforcement against anti-competitive acts compared to the institutional effectiveness.

As for the econometric approach, we used the above-mentioned indices to empirically assess the effect of competition policy rules on economic growth in MENA countries. Our main findings show that competition measures exert a positive and statistically significant effect on the trend component of GDP, while its effects on the cyclical component is sometimes negative. This result is robust for the four measures of competition we use (the existence of the law, its age, the age of the competition authority and our own created competition rules index we construct) and after we control for the endogeneity of the competition rules using the legal origin and following Acemoglu et al. (2014) methodology.

From a policy perspective, it seems that there is a lack of evidence on the macroeconomic impact of competition policies and laws in the MENA region. Developing countries, like MENA countries, are constrained by several barriers to competition including large informal sector, barriers to entry, state monopoly in key sectors, corruption as well as challenging political economy context. They also suffer from institutional and structural weaknesses which make them more vulnerable to anticompetitive practices (UNCTAD, 2010). Market power creates barriers to entry which leads to inequality and poorer economic performance including lower growth and more instability (Stiglitz, 2015). Hence, an appropriate evaluation of the impact of competition laws can help providing them more legitimacy as follows. First, this evaluation exercise can help countries already adopting competition laws to consider their benefits and hence efficiently implement them. Second, the lack of evidence might cause a reluctance by the countries which did not adopt them yet to eventually consider them. Hence, this exercise can help motivating these countries to effectively consider them

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Annex 1: Competition policy rules assessment methodology[16]

This methodology for competition rules assessment has several advantages as follows. The criteria of the assessment are tailored for countries in transition and developing countries, and thereby are particularly relevant to our group of MENA countries. In this regard, Dutz and Vagliasindi (2000) argued that this assessment methodology particularly focuses on the economic criteria which are necessary for the case of countries where business and government actors have less experience with well-functioning markets (see also Youssef and Zaki, 2018 *forthcoming* for further details).

- **The enforcement category**

This category includes three dimensions assessment of enforcement rules and practice towards enterprises and state executive bodies in addition to the relevant fines.

The **enterprises** enforcement consists of four equal sub-dimensions with regard to the definition of abuse of dominance, hard core cartels, other agreements, and mergers. In the case of abuse of dominance, it is required to have economic criteria to define dominance beyond market shares. Also, abuse rather than dominance is the prohibited act. As for the hard-core cartels, the prerequisite is to have a "per se" rule prohibiting agreements between competing firms on prices, market shares and/or bids. For the other agreements, a rule of reason should be relevant for the vertical and other horizontal agreements. And finally, the rule for mergers should be prohibiting them in case they limit competition in their respective market.

For the **state executive bodies**, the legal criteria assess whether anti-competitive activities by regional or local state executive and governing bodies are prohibited, including restrictions to the free movement of goods and capital between regions/localities, plus restriction of competition in the production of infrastructure and non-infrastructure goods and services.

Regarding **fines**, the legal criteria consider whether fines are sufficient to deter anticompetitive acts (if the penalties are not excessively limited, either because they are set on a stand-alone basis in nominal terms and not protected from inflationary devaluation or because all ceilings are set below 5% of the firm's annual turnover during the firm's preceding financial year). In addition, the criteria consider whether different set of fines are imposed on different anticompetitive acts with the highest fine for hard core cartels. It is worth clarifying here that our fines assessment is based on the magnitude of the fines and not the imposing entity (whether the authority or the court). It could be argued that granting the authority the power to impose fines increases its independence. Yet, we follow Voigt (2009) who argues that courts are supposed to be sufficiently independent and hence, the possibility to take a case to a court will incentivize the authority to apply the law as closely as possible.

- **The advocacy category**

The advocacy category includes two dimensions that consider the ability to change rules with regards to regulation of infrastructure in addition to the awareness or education activities by the authority.

For the case of **infrastructure**, it is required that the authority has the power either to change rules or to introduce new laws and regulations where infrastructure regulation is absent or

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[16] We follow Youssef and Zaki (2018, *forthcoming)* methodology for competition rules assessment. They undertook this assessment for a group of Arab countries, namely Djibouti, Egypt, Jordan, Morocco, Tunisia and Yemen. We extend their results to the rest of MENA countries.

not well defined. Concerning **awareness and education**, it considers the mandate of the authority to disseminate annual reports about its activities to the parliament or the public.

It is worth mentioning here that Dutz and Vagliasindi (2002 and 2000) included in their advocacy assessment a dimension on privatization. The latter dimension considers whether the law grants the authority the power to break up assets as pro-competition restructuring before privatization and as an ultimate remedy to rectify recurrent abuse of dominanceWe did not account for this dimension in our assessment for the following reasons: First, we believe that this dimension is rather tailored to the Eastern Europe countries experience which moved from centrally planned economies to market economies. This process entailed privatization while our group of countries does not seem to be sharing this particular aspect. Second, our group of countries laws did not mention privatization in any of their clauses which confirms our previous argument. Third, if we account for this dimension, all countries would score zero and hence, from an empirical point of view, there will not be any variability.

- **The institutional category**

This category considers the degree of independence of the authority, the transparency of the authority, and the effectiveness of the appeals process.

The political independence consists of five equal sub-dimensions which are assigned 0.2 if the criterion exists and zero otherwise as follows. First, on the appointment of the head of the competition authority, the legal criteria require that the head is neither appointed nor answerable to the government nor to a particular Minister. Second, regarding the dismissal procedures of the head, the legal criteria assume that the authority would be more independent if its head cannot be removed from office except by legal procedure. Third, the head is assumed to be less if his/her terms are renewable because they have an incentive to please those who can reappoint them. Fourth, to ascertain the independence of the authority, legal criteria inquire whether the authority finds itself under direct supervision of the government: whether members of the government have the right to give instructions to the competition authority or not. Finally, on the development of the budget, on the legal front (*de jure*), it is required that the law grants the authority minimal independence with its budget.
As for **the appeals**, 1 is given if the law grants ultimate appeal to courts or specialized independent tribunals. And finally, for the **transparency,** the legal criteria require publishing all decisions or at least to make them publicly available.

Annex 2: Competition Legislations in the MENA Countries

The laws we account for in our rules assessment are the following:

Country	Competition law	Amendments
Algeria	Law No. 95-06 of the year 1995	- Amendment 2003: Law No. 03-03 of the year 2003 - Amendment 2008: Law No. 08-12 - Amendment 2010: Law No. 10-05
Djibouti	Law No. 28 of the year 2008	
Egypt	Law no. 3 of the year 2005	- Amendment 2008: Law no. 190 of the year 2008 - Amendment 2014: Law no. 56 of the year 2014.
Iraq	Law No. 14 of the year 2010	
Israel	Law No. 5748 of the year 1988	
Jordan	Law No. 33 of the year 2004	Amendment 2011: Law Amending Competition Law No. 18 of the year 2011.
Kuwait	Law No. 10 of the year 2007	Amendment 2012: Law No. 2 of the year 2012
Malta	Act No. XXXI of the year 1994	- Amendment 2000: Act No. XXVIII of the year 2000 - Amendment 2011: Act No. VI of the year 2011 - Amendment 2017: Act No. XXV of the year 2017
Morocco	Law No. 6-99 of the year 2000	Law no. 104-12 of the year 2014
Qatar	Law No. 19 of the year 2006	
Oman	Law No. 67 of the year 2014	Law No. 2 of the year 2018
Saudi Arabia	Law No. M/25 of the year 2004	Amendment 2014: Law No. M/24 of the year 2014
Syria	Law No. 7 of the year 2008	
Tunisia	Law No. 64 of the year 1991	Law no. 36 of the year 2015
UAE	Law No. 4 of the year 2012	
Yemen	Law No. 19 of the year 1999	

Source: Authors' compilation based on competition authorities' websites

Notes:
- For Israel, we only accounted for the 1988 version in our assessment and we did not account for the Law No. 5774 of the year 2013 (entitled "Law for Promotion of Competition and Reduction of Concentration") for the following reasons: First, this is a complementary law to the original law of 1988 and this original law is still being applied. Second, it has particular complementary objectives that are not supposed to change our indices scores. For instance, it aims at increasing competitiveness in the Israeli economy. It regulates the economy wide concentrations, the competition in specific sectors and the separation between large non-financial corporations and large financial entities.
- For Jordan, the original law and its amendment are to be read with Competition Law No. 3 of the year 2004. We would like to also clarify that we do not account for the provisional competition law of the year 2002 in our assessment.
- For Malta, we did not account for the 2003 amendment: Act No. IV of the year 2003, the 2004 amendment: Act No. III of the year 2004 and the 2012 amendment: Act No. VI of the year 2012 since they represent minor amendments to the original version of the law and did not affect any of our indices scores.
- For Tunisia, the 1991 version of the law has been subject to several amendments (precisely in 1993, 1995, 1999, 2003 and 2005). The 2015 version was the most comprehensive amendment compared to the rest of the amendments.

Annex 3: Competition Rules Assessment Results (1)

	Algeria				Djibouti	Egypt			Israel	Iraq	Jordan		Kuwait	
Years and different versions of the competition law	1995	2003	2008	2010	2008	2005	2008	2014	1988	2010	2004	2011	2007	2012
Overall rules assessment	4.9	5.4	5.4	5.4	1.25	2.95	2.95	4.15	3.7	0.95	3	3	3.75	3.75
1. Enforcement against anti-competitive acts	1.5	2	2	2	1.25	0.75	0.75	1.75	1.5	0.75	2	2	1.75	1.75
Enterprises	0.5	1	1	1	0.25	0.75	0.75	0.75	0.5	0.75	1	1	0.75	0.75
Abuse of dominance	0	0.25	0.25	0.25	0	0.25	0.25	0.25	0	0.25	0.25	0.25	0.25	0.25
Hard-core cartels	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Other agreements	0	0.25	0.25	0.25	0	0.25	0.25	0.25	0	0	0.25	0.25	0	0
Mergers	0.25	0.25	0.25	0.25	0	0	0	0	0.25	0.25	0.25	0.25	0.25	0.25
State executive bodies	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Fines	1	1	1	1	0	0	0	1	1	0	1	1	1	1
2. Advocacy	1	1	1	1	0	1	1	1	0	0	0	0	0	0
Infrastructure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	1	1	1	1	0	1	1	1	0	0	0	0	0	0
3. Institutional effectiveness	2.4	2.4	2.4	2.4	0	1.2	1.2	1.4	2.2	0.2	1	1	2	2
Independence	0.4	0.4	0.4	0.4	0	0.2	0.2	0.4	0.2	0.2	0	0	0	0
Appointment of the head	0	0	0	0	na	0	0	0	0	0	0	0	0	0
Dismissal of the head	0	0	0	0	na	0	0	0.2	na	0	0	0	0	
Reelection of the head	0	0	0	0	na	0	0	0	na	0	0	0	0	0
Government supervision	0.2	0.2	0.2	0.2	na	0	0	0	0.2	0	0	0	0	0
Budget	0.2	0.2	0.2	0.2	0	0.2	0.2	0.2	0	0.2	0	0	0	0
Appeal	1	1	1	1	0	0	0	0	1	0	1	1	1	1
Transparency	1	1	1	1	0	1	1	1	1	0	0	0	1	1

Source: Constructed by the authors based on MENA countries competition legislations.

Annex 3: Competition Rules Assessment Results (2)

	Malta				Morocco		Oman		Qatar	Saudi Arabia	
Years and different versions of the competition law	1994	2000	2011	2017	2000	2014	2014	2018	2006	2004	2014
Overall rules assessment	3.5	4.5	5.7	5.7	2.75	2.75	2.75	3.15	2.75	1.75	2.75
1. Enforcement against anti-competitive acts	1.5	2.5	2.5	2.5	1.75	1.75	1.75	1.75	1.75	0.75	1.75
Enterprises	0.5	0.5	0.5	0.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Abuse of dominance	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Hard-core cartels	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Other agreements	0	0	0	0	0	0	0	0	0	0	0
Mergers	0	0	0	0	0.25	0.25	0.25	0.25	0.25	0.25	0.25
State executive bodies	0	1	1	1	0	0	0	0	0	0	0
Fines	1	1	1	1	1	1	1	1	1	0	1
2. Advocacy	0	0	1	1	0	0	0	0	0	0	0
Infrastructure	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	1	1	0	0	0	0	0	0	0
3. Institutional effectiveness	2	2	2.2	2.2	1	1	1	1.4	1	1	1
Independence	0	0	0.2	0.2	0	0	0	0.4	0	0	0
Appointment of the head	0	0	0	0	0	0	na	0	0	0	0
Dismissal of the head	0	0	0	0	0	0	na	0	0	0	0
Reelection of the head	0	0	0	0	0	0	na	0	0	0	0
Government supervision	0	0	0.2	0.2	0	0	na	0.2	0	0	0
Budget	0	0	0	0	0	0	0	0.2	0	0	0
Appeal	1	1	1	1	1	1	0	0	0	1	1
Transparency	1	1	1	1	0	0	1	1	1	0	0

Source: Constructed by the authors based on MENA countries competition legislations.

Annex 3: Competition Rules Assessment Results (3)

	Syria	Tunisia			UAE	Yemen
Years and different versions of the competition law	2008	1991	2005	2015	2012	1999
Overall rules assessment	3.9	1.7	1.7	4.9	1.5	0.5
1. Enforcement against anti-competitive acts	1.5	0.5	0.5	1.5	0.5	0.5
Enterprises	0.5	0.5	0.5	0.5	0.5	0.5
Abuse of dominance	0	0	0	0	0	0
Hard-core cartels	0.25	0.25	0.25	0.25	0.25	0.25
Other agreements	0	0	0	0	0	0
Mergers	0.25	0.25	0.25	0.25	0.25	0.25
State executive bodies	0	0	0	0	0	0
Fines	1	0	0	1	0	0
2. Advocacy	0	0	0	1	0	0
Infrastructure	0	0	0	0	0	0
Education	0	0	0	1	0	0
3. Institutional effectiveness	2.4	1.2	1.2	2.4	1	0
Independence	0.4	0.2	0.2	0.4	0	0
Appointment of the head	0	0	0	0	0	0
Dismissal of the head	0	0	0	0	0	0
Reelection of the head	0	0	0	0.2	0	0
Government supervision	0.2	0.2	0.2	0.2	0	0
Budget	0.2	0	0	0	0	0
Appeal	1	1	1	1	1	0
Transparency	1	0	0	1	0	0

Source: Constructed by the authors based on MENA countries competition legislations.