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Working Paper No. 1301

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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 Arab countries. In the 1990s, many of them started to adopt economic reform programs that were broadly market packages aiming at reducing the role of the state, whereas competition laws mostly appeared in the following wave of reforms in the 2000s. However, the adoption of law does not seem to be sufficient in its own and what really matters is its implementation and enforcement. To date, many Arab countries have at least ten years of experience in competition policy, which we believe is a sufficient and suitable experience for assessment. However, to our knowledge, there are no cross countries studies assessing the market outcomes of competition policy in this group of countries. Against this backdrop, the objective of this paper is twofold. First, the paper aims at assessing competition policy in Arab countries in terms of rules (*de jure*) and implementation (*de facto*). For both the rules and implementation, we construct indices assessing three categories: enforcement, advocacy and institutional effectiveness. Second, the paper analyses the association between competition policy rules (*de jure)* and implementation (*de facto*) and competition outcomes (factual-based and perception-based). This correlation exercise uses our own created indices and the World Bank Enterprise Surveys data (WBES). Our main findings show that, in general, the overall assessment of our group of Arab countries competition legislations seems to be broadly average. In particular, Egypt and Tunisia had better scores in their implementation index for 2012 compared to their corresponding rules index, while it is the inverse in the Jordanian and Moroccan cases. Moreover, the Djiboutian and the Yemeni legislations are the weakest among the group. As per factual based competition outcomes, our competition indices are in general negatively correlated with market power, pointing out the importance of the deterrence effect that competition policy can play in limiting market power. In addition, on the perception-based outcomes front, our indices are mostly positively associated with perceiving more competition.
Keywords: Competition Policy, Arab Countries, *de jure* vs. *de facto*.
JEL Classifications: L4, D2.

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 Arab countries. 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 Arab countries. On the macro level, literature suggests that competition has a positive impact on growth, innovation, productivity, employment, and welfare. It can help reducing poverty by controlling inflation, corruption, and social inequalities. On the markets level, competition provides a variety of choices for the consumers, eliminates barriers to entry, and helps increasing quality and reducing prices (OECD, 2014).

In the 1990s, many Arab countries started to adopt economic reform programs that were broadly market packages aiming at reducing the role of the state. Surprisingly, these programs implicitly implied an orientation towards a market economy structure without an explicit adoption of competition laws. They included the following measures among others: privatization, less state intervention, and more reliance on markets. Yet, competition laws mostly appeared in the following wave of reforms in the 2000s with the objective of regulating business environment. However, the adoption of law does not seem to be sufficient in its own and what really matters is the implementation and enforcement of the law.

Afterwards, Arab countries were deeply affected by the Arab Spring transition context. The latter represents an opportunity but also a challenge for competition policy in these countries. On the one hand, the Arab Spring context could be a good opportunity to effectively implement that policy because of the following reasons: First, there are popular aspirations and increase in people's awareness in favor of more transparency, and hence in favor of competition implementation. Second, there is a pressure on governments to effectively adopt reforms and control corruption. On the other hand, post uprisings policy makers were supposed to respond to the social demands and at the same time efficiently macro-manage the transition period. In such a challenging context, one might think that competition enforcement is not a priority reform in the short run. It could be considered as a luxurious policy compared to the pressing social demands. Yet, we argue that reforming the business environment is crucial in order to boost growth and create jobs which are much needed in these countries, particularly post uprisings.

In this context, it is surprising how little evidence we have on competition policy in general and in particular for Arab countries. To our knowledge, there are no cross countries studies on the latter group with regards to competition rules and implementation assessment. Against this backdrop, our contribution to the literature on competition policy in Arab countries is twofold as follows. First, following Dutz and Vagliasindi (2000 and 2002), we construct indices assessing competition policy rules (*de jure*) and implementation (*de facto*) regarding three categories: enforcement, advocacy and institutional effectiveness. We have also improved Dutz and Vagliasindi (2002 and 2000) methodology by changing some variables definitions to make them factual based instead of being survey based and by adding four additional assessment criteria for the independence from Voigt (2009). The rules assessment (*de jure*) will account for the competition law and its subsequent amendments in each country. As for the implementation assessment (*de facto*), it will be mainly based on the publicly available data provided by the competition authorities in their

annual reports (for instance the actual enforcement and advocacy activities) and some anecdotal evidence from press as a complementary source whenever needed. Second, the paper analyses the association between competition policy rules (*de jure*) and implementation (*de facto*) and competition outcomes (factual-based and perception-based) at the sectoral level. This correlation exercise depends on our own created indices and firm-level data from the publicly available World Bank Enterprise Survey dataset (WBES). The availability of the latter has particularly restricted our choice of countries and timeframe. It is eventually harmonized and available for the year 2013 for the following group of Arab countries: Djibouti, Egypt, Jordan, Lebanon, Morocco, Palestine, Tunisia, and Yemen. To date, Lebanon and Palestine did not introduce yet a competition law whereas the rest of the group have at least ten years of experience in competition implementation. We believe this is a sufficient and suitable implementation experience for assessment in order to extract useful policy recommendations for a better future performance. As for the two countries without a competition law, they would serve as comparators to the rest of the group and will add variability to the correlation exercise.

It is worth clarifying that our own created *de jure* and *de facto* indices aim at assessing competition policy at the economy wide level (i.e. on the macro level and not on markets or sectors level). In this context, the value added from our own created indices is fourfold as follows. First, our objective is to undertake a factual based assessment of competition policy on both the de *jure* and *de facto* fronts. To that effect, we improved Dutz and Vagliasindi (2002 and 2000) methodology as follows: we changed some of the variables definitions so that they become objective definitions (factual based) instead of being subjective (survey based). In addition, we included four additional criteria from Voigt (2009) to assess the independence since Dutz and Vagliasindi's work relied only on one aspect in this regard which we found relatively incomprehensive, particularly given the specificity of our group of Arab countries. Second, to our knowledge, this is the first time to have this type of constructed competition indices for Arab countries. Third, some of the existing competition indicators are rather subjective as follows. For instance, the Global Competitiveness Index (GCI) includes three sub-indices measuring countries' performance with regards to competition. These indices are very commonly used as a measurement for competition policies or regimes, yet we argue that their results should be treated with caution since they are based on the personal evaluation of business executives through surveys. Hence, these indices might not necessarily reflect a fair assessment of competition policy but rather reflect the interests of the surveyed business community. Similarly, the EBRD competition policy transition indicator reflects the judgment of the EBRD's Office of the Chief Economist and hence, it could be also considered as a subjective indicator. Fourth, the distinction between laws and implementation is not accounted for in the existing competition indicators which are available for Arab countries. For example, the OECD competition law and policy (CLP) indicators merge altogether *de facto* and *de jure* aspects in their assessment.

Our main findings show that, in general, the overall assessment of our group of Arab countries competition legislations seems to be broadly average. In particular, Egypt and Tunisia had better scores in their 2012 implementation index compared to their corresponding rules index, while it is the inverse in the Jordanian and Moroccan cases. Moreover, the Djiboutian and the Yemeni legislations are the weakest among the group. As per factual based competition outcomes, our competition indices are in general negatively correlated with market power, pointing out the importance of the deterrence effect that competition policy can play in limiting market power. In

addition, on the perception-based outcomes front, our indices are mostly positively associated with perceiving more competition.

The paper is organized as follows. Section 2 reviews the literature. Section 3 presents the political economy context where Arab countries have adopted their competition laws. Section 4 is dedicated to the index methodology and results. Section 5 analyses competition and market outcomes through the correlation exercise and Section 6 concludes.

2. Literature review

The literature on competition policy assessment could be divided into two main strands as follows: first, studies examining the economy wide level and second, those focusing on the sectoral level and firms' performance.

Beginning with the first type of studies, Dutz and Vagliasindi (2002) assessed the effectiveness of competition policy in 18 Eastern Europe transition economies. They constructed two indices accounting for the following three categories: law enforcement, advocacy and institutional effectiveness. In addition to these criteria, they used the EBRD Business Environment and Enterprise Performance Survey (BEEPS) to test the impact of competition policy on enterprises mobility; where they found a positive robust relationship between these two. Similarly, Buccirossi et al. (2013) estimated the impact of competition policy on total factor productivity growth for 22 industries in twelve OECD countries over 1995 to 2005. To that effect, they constructed competition policy indexes (CPIs) to assess the effectiveness of competition policy components (see also Buccirossi et al., 2011). Using their created indexes, they found a positive and significant effect of competition policy on total factor productivity. Voigt (2009) also created four indicators to assess the aspects of competition laws and agencies. Then, these indicators were used to estimate the impact of competition policy on total factor productivity in a group of 57 countries. He found that the impact of these indicators is not particularly robust to the inclusion of indicators for the general quality of institutions.

As for the second type of studies, a considerable literature examined the impact of competition on firms' performance. Carlin et al. (2001) found that competition had an important effect on the growth of sales and labor productivity in 25 countries of the Eastern Europe. Similarly, Djankov and Murell (2002) reviewed the determinants of enterprise restructuring in transition economies. They also found that product market competition had a positive and significant effect on enterprise performance in transition economies (Eastern Europe countries through import competition and Commonwealth of Independent States through domestic competition). Likewise, Friesenbichler et al. (2014) reviewed the literature that tackled competition in Eastern Europe countries. The authors mentioned that the research questions in this topic have changed through the past two decades. The earlier articles used to study the relationship between competition and productivity. However, the later studies reviewed the competition effect on the innovation and technology which is in line with the technological advances in these countries.

Regarding the MENA region, much of the research that has been undertaken on competition is mostly sector specific. For instance, there are four interrelated studies on the impact of further liberalization and competition in the Arab airlines industry, particularly in Egypt (Omar and Sekkat, 2012), Jordan (Barakat, 2012), Morocco (Morchid and Sekkat, 2012) and UAE (Squalli,

2012). The four studies adopted the structure-conduct-performance framework which argues that the structure of an industry determines firm conduct which, in turn, determines performance. There are also studies on competition performance and outcomes in the telecommunications sector (see Hakim and Neaime, 2011; Ezzat, 2014) and the banking sector in the MENA region.

Few studies covered the macro dimensions of competition in the region. Gomaa (2014) found a negative impact of competition on growth regardless of the technological gap, but this effect was negligible in the MENA countries. As for ESCWA (2015), it summarized the current status of competition implementation in the Arab countries. It also examined the competition effectiveness challenges. Atiyas (2014) summarized the Turkish experience in competition to provide lessons to Arab countries. Turkey represents an interesting example because it adopted many elements of the enhancing competition reform package. It shifted to a market-oriented system in the 1980s. The paper suggested that the institutions enhancing competition play a significant role in enabling investment and growth.

We could, thus, conclude that the literature provided an evidence that competition policies have positive impact within sectors as well as across economies. Yet, the literature assessing the effectiveness of competition policy and its outcomes is very limited for the MENA region. Against this backdrop, we aim to contribute with an assessment of both rules and implementation competition policy experience across Arab countries and their association with markets outcomes. To our knowledge, this topic has not been covered in the literature on competition policy in Arab countries.

3. Political economy context of competition laws adoption in Arab countries

Having a competition law and a competition authority represents an essential institutional structure for adopting a competition policy in a given country. The latter structures are supposed to dampen the effects of anti-competitive practices on the markets and the economy as a whole. Yet, we argue that the competition policy does not operate in a vacuum, it is directly linked to other factors including the political setup of the economies. From a political economy perspective, the timing of the law adoption is related to some economic and political considerations. In particular, it is worth noting that emerging markets, like Arab countries for example, can face several difficulties while adopting a competition law, including the influence of trading partners; the choice of the general approach of law (per se or rule of reason), its objectives and its scope; the establishment of an efficient authority; and the lack of expertise regarding the economic dimensions of competition laws (Ali El Dean and Mohieldin, 2001).

Generally speaking, competition policy has witnessed a specific attention by the end of the 1990s. In the latter period, globalization and trade liberalization were sort of the prevailing global context. Our group of Arab countries is also not an exception in this context.

In terms of political economy context of law adoption, it seems that most of our countries faced some difficulties while enacting their competition laws, except Tunisia. These difficulties include conflict of interest with other stakeholders, delays in effectively creating a competition authority and political instability. It is also important to note that although four of our group of countries (namely Egypt, Jordan, Morocco and Tunisia) are members of the Agadir agreement which is supposed to boost trade and hence competition policies, the latter did not explicitly address the

competition issue. Indeed, it only states that governments should coordinate overall and sectoral economic and trade policies in order to ensure conditions for objective competition and to promote European investments.

As per Table 1, Tunisia was the first Arab country which adopted a competition law. In 1986, Tunisia was enrolled in a stabilization reform program. Within this context, setting appropriate rules for markets regulation was a must since these programs imply implicit orientation towards free markets and privatization. Nevertheless, Tunisia only enacted its competition law five years later, particularly in July 29, 1991 (Law No. 1991-64). The latter was largely based on the French 1986 ordinance. This is reflected in its focus on the free price setting as well as the administrative setup. The law has been subject to several amendments over the years as will be further elaborated in the rules' assessment section (section 4). By virtue of this competition law, a Competitive Council was created four years later in 1995. It was a necessity since competitiveness and liberalization were becoming widespread and the local markets became open to foreign goods (Anchalia, 2006 and Speelman, 2016). It is also worth mentioning that Tunisia was the first Mediterranean country to sign an Association Agreement with the European Community in 1995. The latter agreement explicitly mentions that anticompetitive practices are considered incompatible with the functioning of the agreement. This has been considered as a factor which has encouraged Tunisia to adopt a competition policy.

As for the rest of the group, first, Egypt and Jordan witnessed failing attempts of drafting a competition law due to resistance from other relevant stakeholders like the government, the parliament and the private sector. In this context, Egypt was enrolled in a reform program called "Economic Reform and Structural Adjustment Program" (ERSAP) in 1991. The latter program implicitly implied an orientation towards a market economy structure without an explicit adoption of a competition law. With much delay and after several drafts, the competition law (the Law No.3 of the year 2005) was adopted 14 years later, particularly in 2005 and the Egyptian Competition Authority (ECA) was accordingly created by virtue of this law. It is argued that the reasons behind this delay could be the following: first, the private sector has been resisting such law due to the high concentration existing in many fields and the rising political influence it had. Second, some ministries did not want to abandon their powers at that time (ESCWA, 2015 and Ghoneim, 2006). In addition to this, Ali El Dean and Mohieldin (2001) suggested that the heavy state intervention in the economy, through the state-owned enterprises and its control of economic activity was a reason behind this delay. To that effect, the Government of Egypt was rather a source of monopoly and hence it was not expected for the latter to adopt a law regulating its own activities.

Similarly, for Jordan, it started a liberalization program in 1989 and six years later, this reform program was followed by two failing attempts of adopting a competition law, particularly in 1995 and 1998. The latter attempt in particular reached an advanced stage and was submitted to the Parliament. Abbadi (2006) argued that this draft was rejected for the following reasons: First, the law was technical, and the Government and the Parliament were not aware of its benefits to the economy. Second, there were other regulatory pressing issues like privatization which was considered a priority at the expense of adopting a competition law. Third, it was argued that the Jordanian economy is a small one and hence it does not require a competition law. Later in 2000, Jordan joined the World Trade Organization (WTO) and hence there was a need to revamp its legal structure. Therefore, in 2002 the Jordanian government in collaboration with the Euro-Jordanian

Action for the Development Enterprise redrafted the competition law. The latter was effective as a provisional law in August 2002 and was endorsed by the Parliament in 2004 as the Competition Law No. 33. It was also argued that the successful adoption of the 2002 law drew on the Tunisian experience (Speelman, 2016).

Second, regarding Morocco, it rather faced a difficulty in effectively implementing its competition law and creating a competition authority (see further details in the implementation assessment section 4.2.2). For instance, Morocco adopted a competition law in 2000 (Law No. 6-99 of the year 2000). It was largely inspired by the French and the European legislation. Yet, the Moroccan Competition Council only started its activities in 2009. This is also similar to the Yemeni case where the Yemeni Competition Law was enacted in 1999 whereas the Yemeni Competition Authority's role was only activated in 2007.

Finally, our study also accounts for two countries which do not have a competition law to date, namely Lebanon and Palestine. The common factor between these two countries is the political instability which we believe could be a major constraint for adopting necessary business regulations laws like the competition law. This confirms that competition laws adoption has political economy considerations. On the correlation exercise front, these two countries would serve as comparators to the ones adopting competition laws.

Hence, we can conclude that there seems to be some similarities in the political economy context where our group of countries had adopted their competition laws. Yet, their results regarding the available competition indices as well as our own created indices differ which mean that their paths in this regard are not typically similar and implementation also matters (see further details in the index approach section 4).

4. Index approach: Competition rules and implementation assessment

4.1. Index methodology

Following Dutz and Vagliasindi (2002 and 2000)[3] methodology, we will classify and assess the competition policy rules (*de jure*) and implementation (*de facto*) effectiveness in Arab countries. To that effect, we improved the latter methodology as follows. First, we changed some of the variables definitions so that they become objective definitions (factual based) instead of being subjective (survey based). Second, we included four additional criteria from Voigt (2009) to assess the independence since Dutz and Vagliasindi's work relied only on one aspect in this regard (head appointment) which we found relatively incomprehensive, particularly given the specificity of the political economy context in Arab countries. Hence, we have particularly chosen aspects that could be measured from both rules and implementation perspectives (*de jure and de facto)*.

[3] It is worth noting that the Eastern Europe countries shifted from centrally planned economies to market economies in the 1990s and hence started to adopt competition laws by that time. Dutz and Vagliasindi (2002) assessed competition policy rules and implementation in these countries almost ten years after adopting these laws. This means that ten years of competition law implementation is a sufficient period to undertake this type of classification and assessment. Applying this to our Arab countries, most of them started adopting competition laws in the 2000s, except for Tunisia and Yemen which started even earlier. Therefore, we believe that this methodology is applicable and relevant to Arab countries case.

For both rules and implementation, the analysis is based on 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. This binary approach limits the number of assumptions that need to be made when scoring the observations and hence, this will reduce the measurement bias errors. In this context, it is worth clarifying that there are two composite sub-indices, namely enterprises enforcement (under enforcement) and independence (under institutional effectiveness), where the same binary rationale applies for their components as follows: 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 specifications related to the rules' assessment exercise are the following. First, the rules assessment exclusively focuses on the competition law in each country, where we assess the competition law and its different amendments over the years (See annex 2 for a list of countries competition laws and amendments).[4] Hence, competition rules mentioned elsewhere in the legislative body for each country are not accounted for. Second, the overall rules index (*de jure*) is supposed to range from 0 (being the lowest rank) to 8 (being the highest rank).

Using competition authorities' annual reports, we will provide an assessment of the implementation of competition law in each country based the actual count of the anticompetitive cases, studies and advisory opinions. In addition, anecdotal evidence from press will be used as a complementary source whenever needed. Hence, the availability of these annual reports in principal and the availability of some specific information in particular hindered our assessment. The specifications related to this implementation assessment exercise are the following: First, some of the sub-indices account for the authority's decisions in terms of percentage of violations. Hence, our count of cases will be based on the year where the relevant authority has taken a decision and not the year where the authority has received the case.[5] Second, unlike our benchmark papers (Dutz and Vagliasindi, 2000 and 2002 and Voigt, 2009), we relied on a group of variables that are based on objective definitions and not subjective ones in order to reduce the measurement bias errors. Third, the overall implementation indicator (*de facto*) is supposed to range from 0 (being the lowest rank) to 8 (being the highest rank).

The advantages of this methodology are twofold. First, the classification criteria do not depend on the country size neither on the count of the anticompetitive cases. Hence, smaller countries with fewer cases will not be penalized relative to the larger ones. Second, these criteria are tailored for countries in transition and developing countries, and thereby are particularly relevant to our group of Arab countries. In this regard, Dutz and Vagliasindi (2000) argued that this rules and implementation assessment methodology particularly focuses on the economic criteria which is necessary for the case of countries where business and government actors have less experience with well-functioning markets.

[4] 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 our group of countries legislations.

[5] For some cases, the year of receiving the case is different than the year of taking the decision.

Table 2 provides a brief description for each category and its dimensions for both the rules and the implementation. An explanatory annex (Annex 1) will provide the details of the assessment methodology.

4.2. Index approach results

4.2.1. Competition rules assessment in Arab countries (*de jure* index)

We only present in this section findings based on the *de jure* indices calculated for the latest version of the competition law for each country while Annex 3 presents the detailed scores for our competition rules assessment for the earlier versions of the laws.[6]

- **Enforcement against anticompetitive acts**

Regarding the enforcement against enterprises anti-competitive practices, we argue that our group of countries has broadly well-elaborated legislations (Table 3). However, we noticed some weaknesses across the legislations as follows. First, despite the several amendments, the latest version from the Tunisian Competition Law (Law No. 36 of the year 2015) did not mention 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) and the Yemeni one (article 7). Second, the Egyptian and the Jordanian legislations fare better compared to their peers concerning **other horizontal and vertical agreements.** For instance, these two legislations have an explicit rule regulating this kind of agreements. Third, Djibouti and Egypt's legislations are the weakest compared to their peers with regards to **merger controls**. To that effect, the Djiboutian legislation did not mention mergers in any of its 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).[7] 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 enforcement on the **state executive bodies**, the Djiboutian legislation fares better compared to its peers in this regard since it applies on production, distribution and service activities including those by "*corporations governed by public law"* (article 2). The latter was defined by the French law as: the state, regional authorities and public institutions.[8] As for the rest of our

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[6] The assessment of the earlier versions of the competition law for each country is used in the correlation exercise as it will be further elaborated later.

[7] 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.

[8] Unfortunately, we were not able to find this definition in the Djiboutian law. Since the Djiboutian legal system was primarily based on the French Civil Code, we assumed it is safe to use the French law definition for that particular term.

group of countries legislations, it seems that they did not explicitly address competitive activities by the state executive bodies.

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 and the Yemeni legislations. The Egyptian legislation imposed two different set of fines with the highest imposed on the cartel cases. For these two set of fines, the law also specified a threshold based on the firm's revenues for the product related to the anticompetitive. The earlier drafts of the law only specified nominal ceilings for the fines. This is also similar to the Jordanian law that has well elaborated two sets of fines with different thresholds (articles 20 to 22). As for the Yemeni and the Djiboutian legislations, they only specified nominal ceilings for the fines. However, it is worth mentioning that this sub-index focuses on the fines magnitude and variability regardless of the imposing entity (whether the authority itself or an economic court). Despite the fact that the Egyptian law stipulated a variety of fines, it did not grant ECA the power to directly impose fines. The latter are determined by the economic court. As for the Tunisian case, the Competition Council has the power to impose fines.

- **Advocacy**

Our advocacy index suggests that the Egyptian and the Tunisian laws fare better compared to their peers with regards to the advocacy rules in general (Table 4). For the **infrastructure**, competition legislations in our group of countries did not grant them the right to introduce relevant new laws. The Djiboutian and the Yemeni legislations are the weakest compared to the rest of the group since they did not mention this aspect in any of their clauses. Yet, Egypt, Jordan, Morocco and Tunisia's legislations granted their respective authorities the right to give their opinion on that front (Egypt: article 11 of the Law No. 3 of the year 2005; Jordan: article 14 of the Law No. 3 of the year 2004; Morocco: article 15 of the Law No. 6-99 of the year 2000; Tunisia: article 11 Law No. 36 of the year 2015).

Regarding the **education** (i.e. the dissemination), the Egyptian and the Tunisian laws fare better compared to their peers. The Egyptian Law 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.[9]

- **Institutional effectiveness**

Our institutional effectiveness index indicates that there seems to be an extent of variability in the different legislations power regarding the institutional effectiveness, where the Tunisian

[9] 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.

legislation is the strongest and the Djiboutian and the Yemeni legislations are the weakest among the group (Table 5). Regarding **independence**, the Jordanian Competition Directorate and the Yemeni Competition Authority seem to be overall the least independent given their particular structure. They are both 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. 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 Jordanian and Yemeni legislations scores regarding all sub-components of independence assessment.

Regarding **the head appointment**, in the Egyptian case, ECA shall be managed by a Board of Directors and its composition shall be formulated by virtue of a decree of the Competent Minister (article 12). This Board includes representatives of various ministries, independent experts and representatives of trade unions and industry associations. The Chairperson of the Board (who is the head of the Authority) is chosen by the Competent Minister. This seems to be similar to the Tunisian case where the Chairman of the Board of Competition, the two vice-presidents, the Board members are appointed based on a decree based on a proposal from the Minister of Commerce (Article 13, Law No. 36 of the year 2015). As for the Moroccan case, the earlier version of the law (Law No. 06-99 of the year 2000) specified that the President of the Competition Council should be appointed by the Prime Minister (article 19). The latest version of the law (Law No. 104-12 of the year 2014) did not specify any rules with regards to the appointment of the President. Therefore, we assumed that the rule in the earlier version of the law still holds. Finally, there seems to be some ambiguity with regards to the Djiboutian legislation in this regard. There are no clear clauses on the head of the authority neither his/her appointment process. Yet, the Minister of Commerce is mentioned in several clauses, but his/her role is not clearly specified. Accordingly, this has affected all the relevant independence criteria scoring.

As 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 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.

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). As for the Moroccan law no. 6-99 of the year 2000, it specified a term length for the members of the Board of the competition council to be five years subject to renewal for one time. This was not specified in the latest version of the law, but we assume the earlier clauses are still valid. As for the head, it was only mentioned that he is appointed by the Prime Minister without a mention on his legal term length or dismissal procedures. In the Egyptian case, the law specified a legal term of four years subject to one renewal for all the Board of Directors members which includes by definition the head of the authority.

Regarding **the Government supervision of the authority**, the Jordanian and the Yemeni authorities are in general the weakest 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. Tunisia's legislation fares better compared to the rest of the group in this regard where it is the only one that does not stipulate including government representatives in the authority's board (article 13).

Finally, for the **budget,** the Egyptian law is the only legislation among the group which clearly mention that ECA should have an independent budget (article 14). The Tunisian legislation in its turn mentioned in one of its earlier versions (2005 amendment) that the council's budget is attached to the Ministry of Trade's budget. The rest of the group legislations did not mention the budget in any of their clauses.

Regarding the **appeal**, the Egyptian, the Djiboutian and the Yemeni legislations seem to be weaker compared to their peers. For instance, these three legislations did not specify a rule in this regard.[10]

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. Similarly, article 14 from 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. In addition, all the Authority's decisions and opinions have to be published on the Authority's website.[11] As for the rest of the group laws, including the Djiboutian, Moroccan, the Jordanian and the Yemeni, they did not specify any clauses to that effect.

The overall index for the rules (*de jure)* is supposed to range from 0 (being the lowest rank) to 8 (being the highest rank). To that effect, based on our rules assessment we can eventually conclude that: First, the overall assessment of the Arab countries' competition legislations (*de jure*) seems to be broadly average (Figure 1 and Annex 3 for more details). In this context, the Djiboutian and the Yemeni legislations are the weakest compared to their peers. This suggests that there are several potential areas for reforms on the legislative front. Second, four countries among our group revised their laws with some improvements in different aspects as previously explained. Yet, only Tunisia and Egypt indices witnessed an improvement in their value following their latest amendment in comparison to their earlier drafts. Third, the six countries competition legislations score better in the enforcement against anti-competitive acts compared to the advocacy and the institutional effectiveness, except for Tunisia in 2015 which had a better score in institutional

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

[11] 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.

effectiveness compared to other dimensions (Annex 3). 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 our group of countries legislations.

Finally, it is worth mentioning that our rules assessment did not account for the leniency programs and settlements. This could be an area for future research.

4.2.2. Competition implementation assessment in Arab countries in 2012 (*De facto index)*

This section complements the previous section so as to provide a comprehensive assessment of the competition policy in our group of Arab countries. We will provide in this section results based on the implementation assessment of 2012 for Egypt, Jordan, Morocco and Tunisia. Table 6 provides the summary of these results. We have particularly assessed implementation in 2012 since its results will be used in the correlation exercise (as will be explained later in section 5). Unfortunately, we were not able to find public reports covering the Yemeni Competition Authority and the Djiboutian one annual activities. This could be reflecting the fact that both laws do not stipulate that decisions should published or publicly available (as elaborated in section 4.2).

- **Enforcement against anticompetitive acts**

On **the enterprises' enforcement**, we noticed that the Moroccan Competition Council was relatively passive (Table 6). Yet, it is worth highlighting that the latter council conducted several studies on competition in specific sectors throughout the studied years (2009-2013). The council did not prove any violations in any of the cases it studied but it provided recommendations to improve competition for several cases. This is in fact due to its limited consultative role (see further details in the following sub-section). Tunisia fares better compared to the rest of the group on that front. As for the **state executive bodies**, our group of countries seem to be inactive on that front in 2012. This is rather an expected finding since our rules' assessment revealed that all our group of countries legislations did account for that aspect (except Djibouti) and hence this was also reflected on the implementation front. Regarding **the fines,** the relevant information was not available in our group of countries annual reports and hence we were not able to assess this aspect.

- **Advocacy**

Our *de facto* advocacy index suggests that Egypt and Jordan seem to be more active with regard to **advocacy** compared to Morocco and Tunisia (Table 6). As for the **infrastructure**, for the case of Egypt, it might have not been active in early implementation years with regards to infrastructure. Yet, it was active with other advocacy activities. For instance, ECA has been solicited several times by ministries and other public authorities with regards to SOEs performance. FY2012 was an important year for ECA in terms of infrastructure initiatives. [12] Regarding the **education**, there

[12] The initiatives are as follows: First, ECA arranged with the Prime Minister to send a letter to all Government agencies to ask them to comply with the Competition Law. Second, ECA became a member in a committee along with the Electricity Regulator and the Consumer Protection Agency. This committee meets regularly and ECA's role was to make sure that all their decisions and laws do not contradict with the Competition Law. Third, ECA also cooperates with the Environment Regulator to make that one of their protocols does not contradict with the Competition Law. Fourth, ECA addressed the Ministry of Education to modify two ministerial decrees with regards to school uniforms. The Ministry in its turn modified the decree based on ECA's suggestions. Finally, ECA signed several cooperation protocols with several governmental entities in this year as well.

was no mention of any seminar directed to the public in 2012 in Tunisia. This could be interpreted by the fact that the Tunisian Authority is the oldest compared to its peers. And therefore, it could be in a position that it does not need to promote anymore for competition policy.

- **Institutional effectiveness**

Overall, our *de facto* institutional effectiveness index suggests that Tunisia fares better on that front compared to the rest of the group while Egypt and Morocco achieved similar score. Regarding **independence**, we tried to assess it to the extent of the available information. It is worth mentioning that the Jordanian council's particular structure being a department of the Ministry of Trade affected its scoring on that front. Five aspects were assessed regarding independence as follows: the head appointment, dismissal, and reelection, the government supervision and the budget.

First, on the **heads' appointment,** the criterion assesses whether the head of the competition authority is not politically connected to the government/ruling party/ruling family. Unfortunately, there was no available information to assess this aspect. Second, regarding the **heads' dismissal and reelection,** Table 7 below summarizes the related information for our group of countries. It seems that Morocco is the only country which witnessed a reelection of the head in 2014. Yet, the council's activities were frozen starting that date. Newspapers were eventually the only accessible source to discern the dismissal story behind each head. We understand that this is just an anecdotal evidence, yet it still provides important insights. This anecdotal evidence points out that there was one incident where the head of the competition council in Tunisia was removed without a legal procedure (in February 2011, Table 7). This might be also related to the political turmoil which Tunisia witnessed in that particular timeframe.

On **the government supervision,** we assumed that the fact that Egypt and Morocco agencies have government representatives in their board and Jordan's council being a department of the Ministry of Trade make them subject to government supervision on the implementation front also. As for Tunisia, there was no available information to assess the extent of government supervision to their decisions from a *de facto* perspective.

And finally, regarding **the agencies budgets**, all of our group of countries agencies reported their respective budget in their annual reports, except the Jordanian Competition Council. We believe that the latter particular structure, being part of the Ministry of Industry, could be a reason behind the non-disclosure of the specific council's budget.[13] For the rest of the group, Table 8 summarizes this piece of information to the extent of the available data. For instance, Tunisia seems to be the only country in our group which committed to consistently increase the budget for its competition council.

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[13] We were able to find an item in Jordan's fiscal budget on competition for a specific program titled "spreading competition culture", but we cannot assume that this is the competition council overall budget. We were able to trace the amount allocated to the latter program in the budget starting 2008 till 2017. This amount was cut by half over this period, moving from 140 thousand Dinars at the beginning of this period to 70 thousand Dinars by the end of the period.

As for **the appeal,** information on appealed cases was not available and hence we were not able to assess this aspect. For **the transparency**, we looked at whether the authorities effectively published their decisions or not. All competition authorities provided a regular coverage of their enforcement cases, advocacy efforts and other activities in their annual reports, except for Jordan. The latter covered only the most important complaints, studies, advisory opinions and activities. We noticed that the Moroccan competition legislation did not stipulate that the authority' decisions should be publicly available. Yet, on the implementation side, Morocco's Competition Council published on its website an annual report summarizing all their activities and decisions.

- **Other observations on competition policy implementation *(de facto)***

The first observation that arises from the implementation assessment (*de facto*) is to account for the average difference between the year of receiving the case and the year of taking the decision for each authority. This could be an indicator of overall institutional efficiency for the authorities. We noticed that there are some cases which took around three to five years to be studied by the Egyptian Competition Authority (ECA).[14] We assume that there could be data collection problems in these cases or other procedural bottlenecks. However, we argue that this delay is harmful on several levels. First, it hinders the deterrence impact of the relevant decision in particular and of the authority in general. Second, by the time the authority takes a decision, the anticompetitive practice would have been established and already damaged market outcomes. In other words, while the firm practicing an anticompetitive act will benefit from such a delay, other firms will be harmed not only because of this act, but also due to uncertainties implied by lengthy decisions.

The second observation is related to the Moroccan Competition Council. Compared to its peers, it is the only one which relies sometimes on specialized private firms to undertake market studies. The Council has clarified in its 2011 Annual Report that this kind of studies represents a tool to discover markets and it does not affect the Authority's decisions. Yet, we argue that this practice could entail a sort of conflict of interests and could affect the independence and credibility of the authority.

The third observation is about the difference between the date of the law adoption and the activation of the competition authority in the Yemeni and Moroccan cases. 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 2001 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 2013. 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 general, these delays raise questions on the seriousness towards the

[14] For example: the cartel leather case: from March 2011 to August 2015; carpets case: from June 2010 to August 2015; Nama for water transport: September 2012 to August 2015; Dream Land case: November 2013 to April 2016; Pasta case: May 2011 to May 2016; Corn case: October 2011 to September 2014;

effective implementation of the law. It also confirms our assumption that the adoption of laws is not sufficient in itself and what really matters is the implementation.

As per Figure 2, overall, in 2012, Egypt and Tunisia had better scores in their implementation index (*de facto)* compared to their corresponding rules index (*de jure,* 2008 for Egypt and 2005 for Tunisia). On the contrary, Jordan and Morocco had a higher overall rules index (*de jure)* compared to their overall implementation index (*de facto).* From a policy perspective, this confirms that a law enactment is not sufficient in itself and does not guarantee an effective implementation.

Comparing the enforcement from the two perspectives, all countries had better scores on the rules front (*de jure)* compared to the implementation (*de facto),* except Tunisia. On the contrary, advocacy scores were in general better on the implementation front (*de facto)* compared to the rules front (*de jure).* Finally, on the institutional effectiveness, our group of countries also had better scores on the implementation front (*de facto)* compared to the rules front, except Jordan. The latter's particular structure had affected its institutional effectiveness score in general on the two sides.

As for the areas of further research, we propose the following. First, it is important to gather information on the fines in amounts. Second, it could be useful to broaden the definition of advocacy to account for other activities. Third, on the institutional effectiveness, it could be useful to assess the authority's staff (skills and number of employees). Finally, on the firm level, the linkages that might arise between a firm's political connections and its involvement in anticompetitive practice could be assessed.

4.2.3. Towards a comparative analysis of competition indices: Similarities or Differences?

In this section, we compare our own created *de jure* and *de facto* indices methodology and results to some other existing competition indicators in the literature in order to shed the light on the similarities and differences between both.

First, as previously clarified, we improve Dutz and Vagliasindi (2002 and 2000) index methodology by having objective definitions for all variables and by adding four additional assessment aspects under the independence category. Hence, these methodological changes had an impact on our indices scores on the *de jure* and *de facto* fronts. For instance, our indices scores would have included many missing values if we solely relied on Dutz and Vagliasindi (2002 and 2000) methodology as is, which confirms the necessity of our introduced changes.

Second, on the one hand, our overall *de jure* index results for the Yemeni performance corroborates with the GCI sub-index on the effectiveness of antimonopoly policy results where Yemen had the weakest score among the group in both indicators (Figure 3). This means that Yemen's competition legal setup is still lacking many aspects, and this in turn is being reflected on the business community assessment of the outcomes of this policy. Yet, for the rest of our countries, our results showed some inconsistencies with that index. One possible explanation could be the fact that this index is survey based and hence its results rather reflect the surveyed business community

interests. The latter's perspective regarding an effective competition policy might not necessarily coincide with our assessment results.

On the other hand, when we compare this GCI sub-index with our *de facto* index results, we find opposite results with regards to the Egyptian and Tunisian performance as follows: GCI sub-index indicates that Tunisia had a better score than Egypt over the period 2007 till 2017 whereas our *de facto* index for 2012 shows that Egypt had a better score than Tunisia. In fact, the sub-components of our *de facto* index indicate that Tunisia is doing better than Egypt on all fronts except advocacy, particularly education. We argued in the previous section that the Tunisian authority is the oldest one in the region and it could be in a position that it no longer needs to promote for its competition policy. On the contrary, Egypt made significant advances on this advocacy front. This kind of details is indeed not captured by the GCI sub-index. The latter is rather survey-based while our *de facto* index is factual based and assessing the implementation which explains the difference in both results.

Third, we compared our own created *de jure* and *de facto* indices to the OECD competition policy and law (CLP) indicators. The latter indicators are based on answers provided by the jurisdictions' competition authorities to a questionnaire that was circulated in 2013. They measure the strength and scope of competition regimes and assess the ability of a country's competition regime to achieve more competition while allowing efficiency gains. Two set of indicators are constructed from the questionnaire database where one set provides an aggregated picture and the other provides a more disaggregated overview (See Alemani et al., 2013 for a detailed methodology of CLP indicators). Comparing these indicators to our own created ones, we noticed the following: On the methodological front, CLP indicators' definitions revealed that they merge altogether *de facto* and *de jure* aspects in their assessment and this confirms our added value in the separation between both. As for the results, findings from our *de facto* advocacy index share some similarities with CLP aggregated indicators results for Egypt. The latter indicate that Egypt is doing well in advocacy compared to the other areas (Figure 4). This is consistent with our *de facto* advocacy index that also shows that Egypt made some advancement in this area. In this context, it is also worth mentioning that the Egyptian Competition Authority (ECA) was one of the winners the first World Bank Competition Advocacy Contest in 2014.

Fourth, our *de jure* and *de facto* enforcement indices show some similar results to the OECD set of disaggregated CLP indicators on mergers in Egypt where both indicate that mergers seem to be an area of weakness to the competition policy in Egypt. Yet, our *de jure* and *de facto* indices results contradict with the disaggregated CLP indicators regarding the independence where Egypt scored in the latter even better than the OECD average (Egypt's independence score is 0 versus an OECD average score of 0.04). CLP independence indicator is the simple average of six *de facto* components assessing whether the government has influenced the activities and decisions of the institutions that enforce competition law over the past five years. These CLP indicators are based on a questionnaire directed to the competition authorities, and hence we think that the independence scores in particular could be inconclusive somehow for the following reasons. First, we assume that it is likely that an authority's replies to the related questions for this independence assessment would be rather perception-based and might be influenced by political considerations and/or power dynamics between the government and the authority. Second, we argue that the government's intervention in an authority's activities would not take a formal shape to the extent

to make it reported by the authority in a questionnaire. Hence, an authority might just report that the government does not intervene because of the non-existence of a formal relevant proof in this regard. From our side, our independence assessment, whether on the *de jure* or *de facto* fronts, is not only based on the government intervention but also includes other aspects (head appointment, head reelection, head dismissal and budget).

Fifth, EBRD competition policy transition indicator results show a similar pattern for the Jordanian and the Moroccan competition policy (Figure 6). This is relatively similar to our overall *de jure* and *de facto* indices where both countries have relatively close results. In terms of methodology, EBRD transition indicators scores reflect the judgment of the EBRD's Office of the Chief Economist and hence they could be also considered as subjective indicators. As per Figure 6, our group of countries performance regarding this indicator seems to be comparable to the average of Eastern Europe countries. In addition, Turkey fares better in comparison to the Arab countries as well as the average of Eastern Europe countries (see Atiyas, 2014 for further details on the Turkish experience in competition policy).

5. The nexus between *de jure* and *de facto* competition indices and policy outcome

We undertake a correlation exercise that aims at assessing the association between competition policy rules (*de jure*) and implementation (*de facto*) and competition outcomes in terms of market power and perception of competition (factual-based and perception-based respectively) at different disaggregation levels: the average sectoral level by country and the firms level. This correlation exercise will depend our own created indices and the publicly available firm-level data from the World Bank Enterprise Survey dataset (WBES) in 2013 for all the available Arab countries, namely Djibouti, Egypt, Jordan, Lebanon, Morocco, Palestine, Tunisia and Yemen. We used the latter dataset in particular as it has been harmonized for all countries making the variables comparable. It is also worth clarifying that we have used our own created relevant indices for the year 2012, assuming that competition policy rules and implementation in a certain year would be reflected on firms' performance in the subsequent year. Regarding the rules (*de jure)* indices, we used the indices corresponding to the version of each law that was adopted in 2012. For the sectoral correlations, we collapsed the firm-level data to obtain data at the sector-country level (around 180 sectors and 8 countries).

As previously elaborated in the index section, our own created competition indices are the following: *dejure* is either the overall or the individual index (enforcement, advocacy, and institutional effectiveness) for competition rules and *de facto* is the overall or the individual index for competition implementation that result from the index approach investigation. While these indices vary across countries, they are equal zero for the countries which did not introduce a competition law in this respective assessment timeline, namely Lebanon and Palestine.

First, regarding the factual-based measure, we calculate two sets of correlations with different disaggregation levels as follows: one set is calculated for our own created competition indices and the share of sales of firm *i* operating in sector *j* in country *c* in the total sales by region and by sector (reflecting market power on the firms' level). The other set of correlations is calculated for our own created competition indices and the average share of sales of firms operating in sector *j* in country *c* in the total sales by region and by sector (reflecting market power on the sectoral level).

Second, two other sets of correlations are calculated for a perception-based measure of competition as follows: on the firms' level, this latter measure is a dummy variable that takes the value of 1 if the firm is facing any type of pressure from domestic or foreign competitors. As for the sectoral level, this measure represents rather the share of firms by sector and country facing any type of pressure from domestic or foreign competitors.

Tables 9 and 10 present our correlations results. Concerning correlations of the factual-based measure of competition and our own created competition indices, the significant negative signs in general indicate that competition policy and its components are associated with a reduction in market power. In particular, the following conclusions can be withdrawn. First, the correlation with the overall *de facto* and the overall *de jure* is negative and statistically significant on the firms' level, pointing out the importance of the deterrence effect that competition policy can play to reduce market power. In addition, it is also important to disentangle the individual component of each index.

Second, while the correlations with *de jure* and the *de facto* enforcement indices are insignificant, correlations with *de jure* and *de facto* advocacy are negative and statistically significant on both firms and sectoral levels. This confirms our previous finding from the index approach where Arab countries experienced significant advances particularly in the *de facto* advocacy component of competition (and especially at the education level such the case of Morocco and Jordan). As per institutional effectiveness, the correlation with the *de facto* one is positive on the sectoral level (and hence counter-intuitive). This suggests that further reforms should be implemented on that front in order to effectively influence market outcomes. For instance, it might indicate that our group of countries did not achieve their full potential regarding this *de facto* institutional effectiveness aspect: first, our countries relevant index results are broadly average where most of them had a score close to the average of 1.5, indicating the possibility of further improvement. Second, regarding the specific case of Jordan, it even achieved a *de facto* index score lower than its *de jure* score. The latter authority institutional setup, being part of the Ministry of Industry and Trade, has affected its performance on that front. Finally, it is worth mentioning that the non-availability of information on appealed cases represent a limitation to our results.

Moving to the firms' perceptions, significant positive signs broadly indicate that firms' perceptions towards competition are positively associated with our own created indices. On the firms' level, all correlations are positive and statistically significant. Sectoral level correlations are similar to the factual-based regarding both *de facto* and *de jure* enforcement which are insignificant. Correlations with *de facto* advocacy as well as *de jure advocacy* are positive, which indicate that they are associated with perceiving more competition (since firms become more aware of the benefits of a competitive environment) and finally *de jure* institutional effectiveness is also positively associated to the competition perception.

6. Conclusion

This paper represented an attempt to assess competition policy rules (*de jure*) and implementation (*de facto*) in a group of Arab countries and its association with competition outcomes (factual-based and perception based) on the sectoral level. To that effect, we first constructed two indices, *de jure* and *de facto,* assessing three main categories: enforcement, advocacy and institutional

effectiveness. On the rules front (*de jure)*, our indices suggest the following: First, the overall assessment of our group of Arab countries competition legislations seems to be broadly average, with the Djiboutian and the Yemeni legislations the weakest among the group. This suggests that there are several potential areas for reforms on the legislative front for these countries. Second, four countries among our group revised their laws with some improvements in different aspects. Yet, only Tunisia and Egypt indices witnessed an improvement in their value following their latest amendment in comparison to their earlier drafts. Third, the six countries competition legislations score better in the enforcement against anti-competitive acts compared to the advocacy and the institutional effectiveness, except for Tunisia in 2015 which had a better score in institutional effectiveness compared to other dimensions

As for the implementation assessment (*de facto*) for 2012, our results indicate the following: First, Morocco seemed to be inactive with regards to the enforcement against anticompetitive acts of enterprises. This is due to its particular consultative role. Second, Egypt and Jordan were more active on the advocacy front while Tunisia was inactive on the education aspect, probably because its council is the oldest in the region. As for the institutional effectiveness, our results suggest that Tunisia fares better on that front compared to the rest of the group while Egypt and Morocco achieved similar score. In addition, Jordan had the weakest score on that front compared to its peers and this is mostly related to the council particular structure being part of the Ministry of Trade. Moreover, the implementation assessment revealed three additional observations as follows. First, there are some cases which took around three to five years to be studied by ECA. We argue that this delay is harmful for the competition on the market level as well as on the economy wide level. Second, the Moroccan Competition Council is the only one in its peers that relies sometimes on specialized private firms to undertake market studies. We think that this practice could entail a sort of conflict of interests and could affect the independence and credibility of the authority. Third, there seems to be a difference between the date of the law adoption and the activation of the competition authority in the Yemeni and Moroccan cases. This raises questions on the seriousness towards the effective implementation of the law.

Overall, in 2012, Egypt and Tunisia had better scores in their implementation index (*de facto)* compared to their corresponding rules index (*de jure,* 2008 for Egypt and 2005 for Tunisia). On the contrary, Jordan and Morocco had a higher overall rules index (*de jure,* 2004 for Jordan and 2000 for Morocco*)* compared to their overall implementation index (*de facto).* From a policy perspective, this confirms that a law enactment is not sufficient in itself and does not guarantee an effective implementation.

On a pertinent note, we compared our own created *de jure* and *de facto* indices methodology and results to some other existing competition indicators in the literature in order to shed the light on the similarities and differences between both. Five main conclusions can be withdrawn as follows. First, we improve Dutz and Vagliasindi (2002 and 2000) index methodology and this indeed had an impact on our indices scores. Second, our overall *de jure* index results for the Yemeni performance corroborates with the GCI sub-index on the effectiveness of antimonopoly policy results, whereas for the rest of our countries, our results showed some inconsistencies with that index. Moreover, when we compare this GCI sub-index with our *de facto* index results, we found opposite results with regards to the Egyptian and Tunisian performance. Third, in terms of methodology, OECD CLP indicators merge altogether *de facto* and *de jure* aspects in their

assessment which confirms our added value in the separation between both. In addition, findings from our *de facto* advocacy index share some similarities with OECD CLP aggregated indicators results for Egypt. Fourth, our *de jure* and *de facto* enforcement indices show some similar results to the OECD disaggregated CLP indicators on mergers in Egypt, whereas our findings contradict regarding the independence in Egypt. Fifth, EBRD competition policy transition indicator could be also considered as a subjective indicator.

Finally, we used our own created indices to analyze the association between competition policy rules (*de jure)* and implementation (*de facto)* and market outcomes from both factual and perception basis through a correlation exercise. Our main findings show that regarding factual based competition outcomes, our competition indices are in general negatively correlated with market power, pointing out the importance of the deterrence effect that competition policy can play in limiting market power. In addition, on the perception-based outcomes front, our indices are mostly positively associated with perceiving more competition.

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Table 1: Arab countries competition laws' year of adoption

Country	Year
Tunisia	1991
Yemen	1999
Morocco	2000
Jordan	2004
Egypt	2005
Djibouti	2008

Source: Authors' compilation from competition authorities' websites

Table 2: Competition Rules and Implementation Assessment Criteria

	Rules	Implementation
	1. Enforcement against anti-competitive acts	
Enterprises	**Composite index formed by adding 0.25 for** **(1) Abuse of dominance:** 0.25 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:** 0.25 if exemptions explicitly exclude practices that significantly restrain competition, **(3) Other agreements:** 0.25 if horizontal and vertical agreements are prohibited only if they limit competition, **(4) Mergers:** 0.25 if only those leading to significant limitation of competition are illegal	**Composite index formed by adding 0.25** **(1) Abuse of dominance:** 0.25 if violations constitute at least 10% of decisions, **(2) Hard-core cartels:** 0.25 if violations constitute at least 10% of decisions, **(3) Other agreements:** 0.25 if violations constitute at least 10% of decisions, **(4) Mergers:** 0.25 if at least 10% of cases examined are modified in some forms
State executive bodies*	1 if anti-competitive activities by regional or local state executive and governing bodies are prohibited	1 if violations at least 10% of decisions (half if at least 1 violation)
Fines	1 if penalties are not unduly limited	1 if one of the 3 largest fines levied per year is in the "hard core cartel" category
	2. Advocacy	
Infrastructure*	1if the authority has the power either to change rules or to introduce new laws to promote competition (including infrastructure regulation)	1 if the authority had comments on infrastructure regulations (half if at least 1 comment)
Education*	1 if the authority has mandate or obligation to disseminate annual reports/periodic information to Parliament and/or the public at large	1 if at least one speech or seminar directed to consumers (half if at small business)
	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 authority, **(5) Budget:** 0.2 if the laws grants minimal independence in budget.	**Composite index formed by adding 0.2 for** **(1) Head appointment:** 0.2 if the head of the competition authority is not politically connected to the government/ruling party/ruling family, **(2) Head dismissal:** 0.2 if actual term length and the one expected by the law do not deviate, **(3) Head reelection:** 0.2 if actual head terms were not renewable, **(4) Government supervision** 0.2 if members of the government do not effectively give instructions to the competition authority, **(5) Budget:** 0.2 if the budget of the authority remained at least constant.
Appeal	1 if the law ensures right of appeal to an independent entity	1 if appeals are judged based on economic content rather than on due process and fairness
Transparency	1 if all decisions are required to be published or publicly available	1 if all authority's decisions are effectively published

Source: Dutz and Vagliasindi (2002 and 2000) and Voigt (2009)

Note: * Dutz and Vagliasindi (2002 and 2000) consider these dimensions in particular as tailored criteria for countries in transition.

Table 3: Rules assessment – Index on enforcement against anticompetitive acts

	Djibouti	Egypt	Jordan	Morocco	Tunisia	Yemen
Overall enforcement against anti-competitive acts	1.25	1.75	2	1.75	1.5	0.5
Enterprises	0.25	0.75	1	0.75	0.5	0.5
Abuse of dominance	0	0.25	0.25	0.25	0	0
Hard-core cartels	0.25	0.25	0.25	0.25	0.25	0.25
Other agreements	0	0.25	0.25	0	0	0
Mergers	0	0	0.25	0.25	0.25	0.25
State executive bodies	1	0	0	0	0	0
Fines	0	1	1	1	1	0

Source: Calculated by the authors based on the countries latest competition legislations (Egyptian Competition Law No. 3 of the year 2005 amended by Law no. 56 of the year 2014.; Djiboutian Consumer and Competition Law No. 28 of the year 2008; Jordanian Competition Law No. 3 of the year 2004 amended by Law No. 18 of the year 2011; Moroccan Competition Law No. 104-12 of the year 2014; Tunisian Competition Law No. 36 of the year 2015 and Yemeni Competition Law No. 19 of the year 1999)
Note: this enforcement index should take a value from 0 to 3, where 0 is the lowest value and 3 is the highest value.

Table 4: Rules assessment – Index on advocacy

	Djibouti	Egypt	Jordan	Morocco	Tunisia	Yemen
Overall advocacy	0	1	0	0	1	0
Infrastructure	0	0	0	0	0	0
Education	0	1	0	0	1	0

Calculated by the authors based on the countries latest competition legislations (Egyptian Competition Law No. 3 of the year 2005 amended by Law no. 56 of the year 2014.; Djiboutian Consumer and Competition Law No. 28 of the year 2008; Jordanian Competition Law No. 3 of the year 2004 amended by Law No. 18 of the year 2011; Moroccan Competition Law No. 104-12 of the year 2014; Tunisian Competition Law No. 36 of the year 2015 and Yemeni Competition Law No. 19 of the year 1999)
Note: this advocacy index should take a value from 0 to 2, where 0 is the lowest value and 2 is the highest value.

Table 5: Rules assessment – Index on institutional effectiveness

	Djibouti	Egypt	Jordan	Morocco	Tunisia	Yemen
Overall institutional effectiveness	0	1.4	1	1	2.4	0
Independence	0	0.4	0	0	0.4	0
Appointment of the head	na	0	0	0	0	0
Dismissal of the head	na	0.2	0	0	0	0
Reelection of the head	na	0	0	0	0.2	0
Government supervision	na	0	0	0	0.2	0
Budget	0	0.2	0	0	0	0
Appeal	0	0	1	1	1	0
Transparency	0	1	0	0	1	0

Calculated by the authors based on the countries' latest competition legislations (Egyptian Competition Law No. 3 of the year 2005 amended by Law no. 56 of the year 2014.; Djiboutian Consumer and Competition Law No. 28 of the year 2008; Jordanian Competition Law No. 3 of the year 2004 amended by Law No. 18 of the year 2011; Moroccan Competition Law No. 104-12 of the year 2014; Tunisian Competition Law No. 36 of the year 2015 and Yemeni Competition Law No. 19 of the year 1999)
Note: this institutional effectiveness index should take a value from 0 to 3, where 0 is the lowest value and 3 is the highest value.

Table 6: Competition implementation assessment in Arab countries, 2012

	Egypt	Jordan	Morocco	Tunisia
Overall implementation index	3.65	2.25	2.4	3.35
1. Enforcement against anti-competitive acts	0.25	0.25	0	0.75
Enterprises	0.25	0.25	0	0.75
Abuse of dominance	0	0.25	0	0.25
Hard-core cartels	0.25	0	0	0.25
Other agreements	0	0	0	0.25
Mergers	0	na	0	0
State executive bodies	0	0	0	0
Fines	na	na	na	na
2. Advocacy	2	2	1	1
Infrastructure	1	1	0	1
Education	1	1	1	0
3. Institutional effectiveness	1.4	0	1.4	1.6
Independence	0.4	0	0.4	0.6
Appointment of the head	na	na	na	na
Dismissal of the head	0.2	0	0.2	0.2
Reelection of the head	0.2	0	0.2	0.2
Government supervision	0	0	0	na
Budget	0	na	0	0.2
Appeal	na	na	na	na
Transparency	1	0	1	1

Source: Calculated by the authors based on the competition authorities' annual reports for 2012 and anecdotal evidence from press whenever needed. Data for Egypt corresponds to FY2012.
Note: It is worth clarifying that Jordan implementation results should be treated with caution since their annual reports do not cover all their activities. They selectively cover some of their activities. Hence, our assessment is mainly based on the available information.

Table 7: Appointment and dismissal of the heads of Arab countries competition authorities

	Date of appointment	End of term	Dismissal procedures (or other relevant info)
Egypt	10th May 2018	to date	
	4th May 2012	23rd November 2017	Head mentioned in a newspaper interview that she decided to resign after finishing her four years term. She clarified that what was claimed that she was dismissed by the Government is not true and that the head of the Authority is protected by the law and cannot be removed from office except by legal procedure.
	January 2011	January 2012	Head mentioned in a newspaper interview that he resigned for personal reasons
	2005	2010	Head's end of mandate
Morocco	since 2008 to date	to date	Head's appointment was renewed with the new law of 2014
Tunisia	30th March 2017	to date	
	26th May 2014		not available
	21st April 2011		Head moved to another public function (president of administrative court)
	26th March 2007	February 11	Anecdotal evidence that the head was dismissed after employees protests and the Council remained around two months without a head.
	2nd October 2001	2006	Head moved to another public function
	1991	1995	Head's end of mandate

Source: Compiled by the authors from competition authorities' websites and annual reports in addition to several newspapers' articles.

Table 8: Competition authorities' budgets, budgeted figures (in local currencies)

Year	Egypt (in million EGP)	Morocco (in million Dirhams)	Tunisia (in thousand Dinars)
2001			80
2002			82
2003			77
2004			96
2005			140
2006			140
2007	16.2		675
2008	34.7		755
2009	17.7	15.0	818
2010	14.0	15.0	936
2011	16.1	19.3	1050
2012	13.8	14.3	1072
2013	na	14.3	1080
2014	16.3		1170
2015	13.1		1210
2016	13.2		

Source: Competition authorities annual reports
Note: data for Egypt is on fiscal year basis

Table 9: Correlations of competition indices and competition outcomes on the firms' level

	Share	Share	Face Comp.	Face Comp.
Overall de jure	-0.0632***		0.237***	
Enfo. de jure	-0.0103		0.0778***	
Adv. de jure	-0.0989***		0.212***	
Inst. de jure	-0.0359**		0.246***	
Overall de facto		-0.0903***		0.192***
Enfo. de facto		0.0259		0.0684***
Adv. de facto		-0.146***		0.213***
Inst. de facto		-0.0227		0.127***
Observations	6083	5978	6083	6083

Note: * p<0.05, ** p<0.01, *** p<0.001

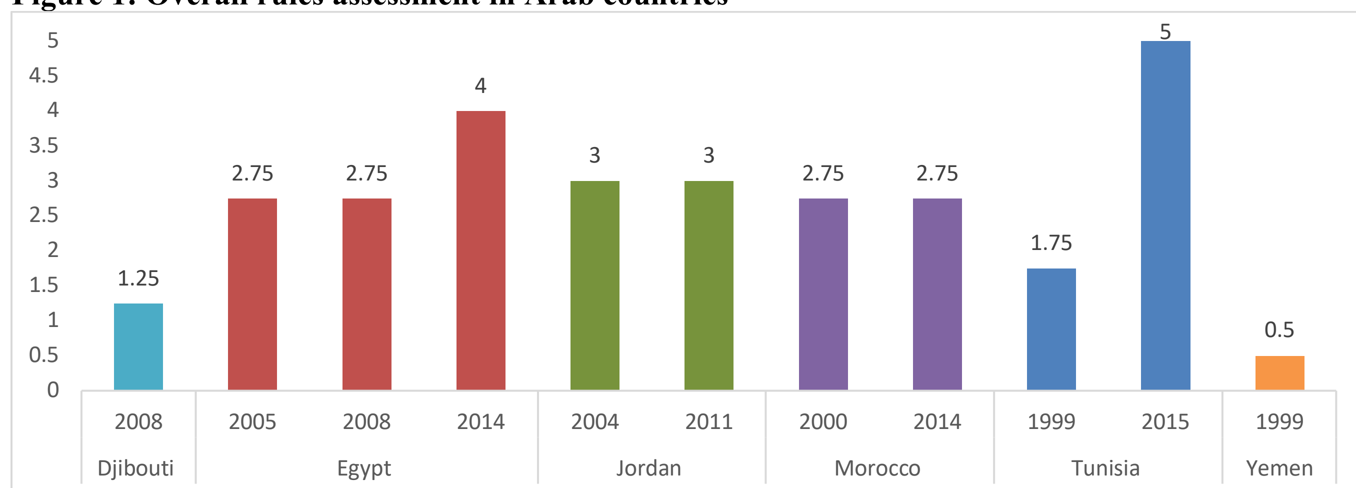
Source: Constructed by the authors using WBES dataset.

Table 10: Correlations of competition indices and competition outcomes on the average sector level by country

	Share	Share	Face Comp.	Face Comp.
Overall de jure	-0.0439		0.108**	
Enfo. de jure	-0.00267		0.0129	
Adv. de jure	-0.123***		0.127***	
Inst. de jure	-0.00376		0.131***	
Overall de facto		-0.0531		0.0821*
Enfo. de facto		0.0496		0.0108
Adv. de facto		-0.198***		0.0964*
Inst. de facto		0.0973*		0.0512
Observations	756	747	756	756

Note: * p<0.05, ** p<0.01, *** p<0.001
Source: Constructed by the authors using WBES dataset.

Figure 1: Overall rules assessment in Arab countries

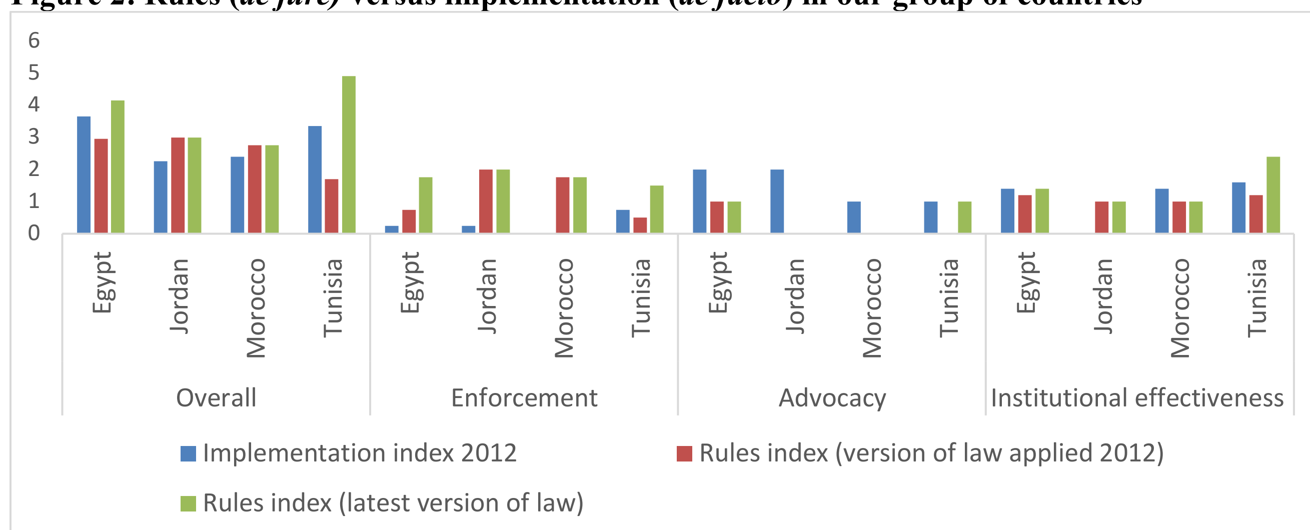


Source: Calculated by the authors based on the countries following competition legislations:

- 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.
- Jordan: Law No. 33 of the year 2004; amendment 2011: The Law Amending Competition Law No. 18 of the year 2011.
- Morocco: Law No. 6-99 of the year 2000; Law no. 104-12 of the year 2014.
- Tunisia: Law No. 64 of the year 1991; Law no. 36 of the year 2015.
- Yemen: Law No. 19 of the year 1999.

Note: This overall rules' assessment index (*de jure index)* should take a value from 0 to 8, where 0 is the lowest value and 8 is the highest value.

Figure 2: Rules (*de jure)* versus implementation (*de facto*) in our group of countries



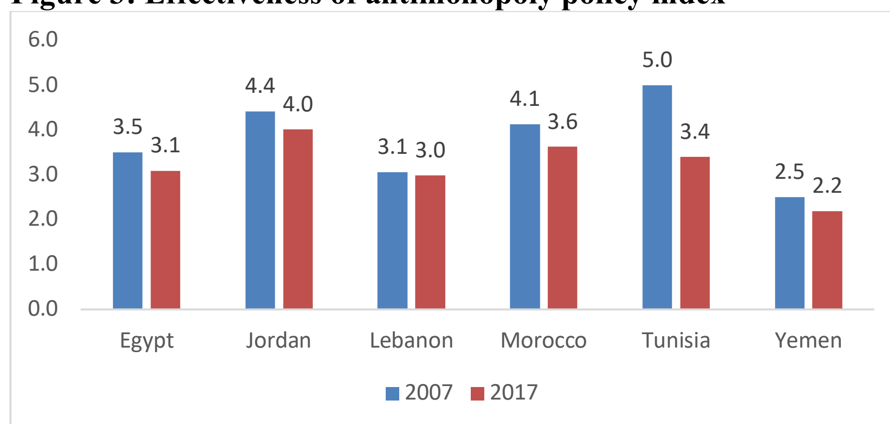
Source: Calculated by the authors based on: for implementation (*de facto*) competition authorities 2012 annual reports and anecdotal evidence whenever needed. For rules (*de jure),* the following competition legislations:

- 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.
- Jordan: Law No. 33 of the year 2004; amendment 2011: The Law Amending Competition Law No. 18 of the year 2011.
- Morocco: Law No. 6-99 of the year 2000; Law no. 104-12 of the year 2014.
- Tunisia: Law No. 64 of the year 1991; 2005 amendment and Law no. 36 of the year 2015.

Notes:

- Rules index version of the law applied in 2012 corresponds to 2008 for Egypt, 2011 for Jordan, 2000 for Morocco and 2005 for Tunisia *de jure* indices.
- Rules index latest version of the law corresponds to 2014 for Egypt, 2011 for Jordan, 2014 for Morocco and 2015 for Tunisia.

Figure 3: Effectiveness of antimonopoly policy index

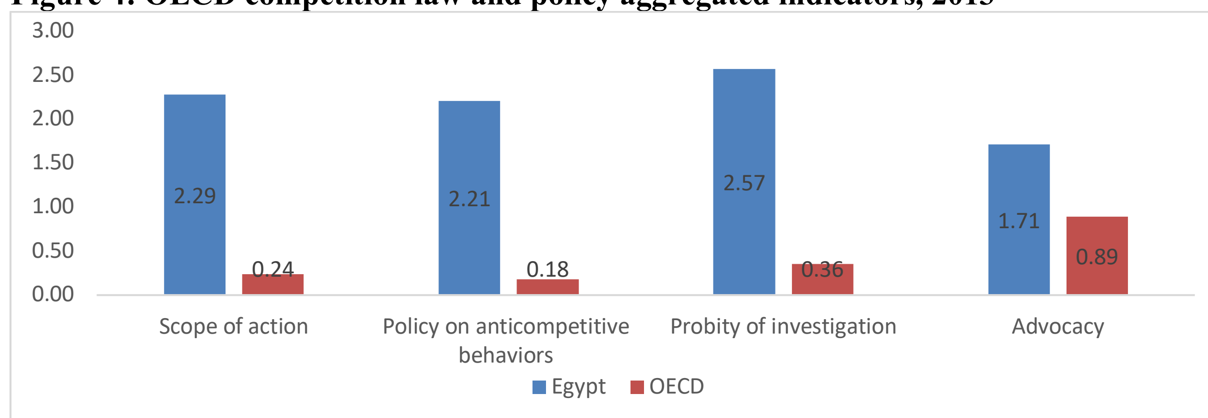


Source: Global Competitiveness Reports Database, World Economic Forum

Notes:

- The related question to this index in the executive opinion survey is the following: “In your country, to what extent does anti-monopoly policy promotes competition? [1 = does not promote competition; 7 = effectively promotes competition]”
- There was no available data for Lebanon and Yemen in 2007. Instead, we used data for Lebanon in 2010 and data for Yemen in 2011.

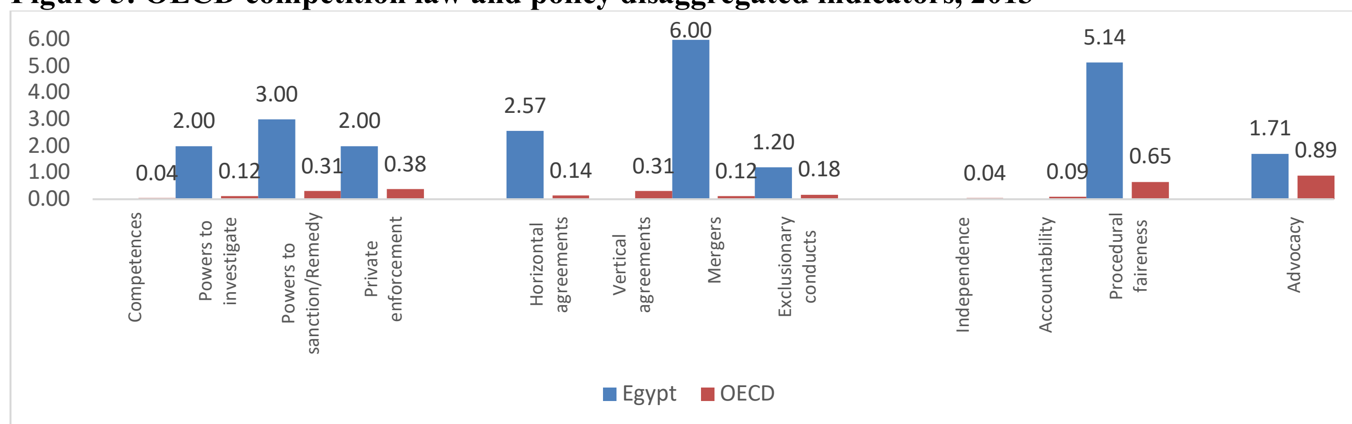
Figure 4: OECD competition law and policy aggregated indicators, 2013



Source: OECD Indicators of Product Market Regulation Database
Note: The scores vary on a 0-6 scale (from the most to the least effective competition regime).
The first set of indicators cover the following areas:

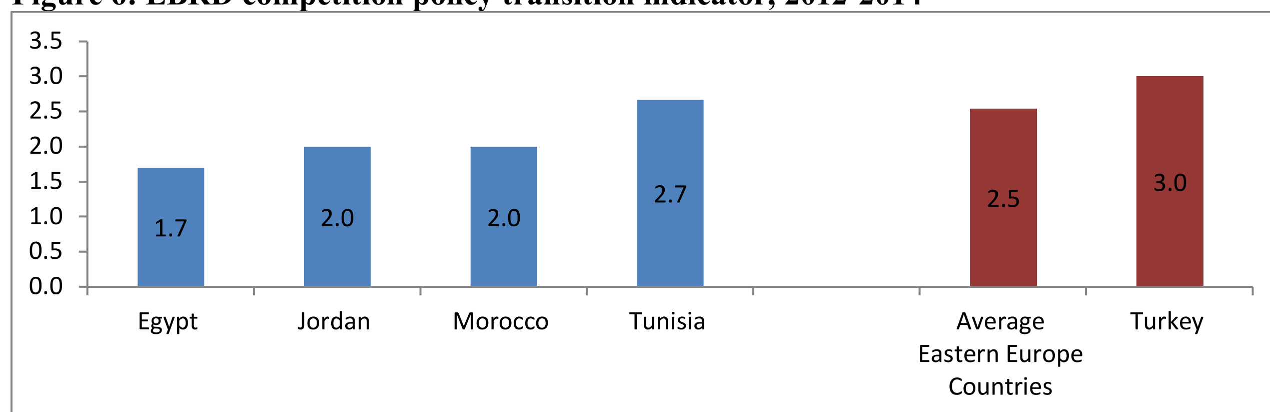
- Scope of action: the legal powers to investigate and impose sanctions on antitrust infringements and to investigate, remedy, or block mergers.
- Policy on anticompetitive behaviors: approaches toward the assessment of horizontal and vertical agreements, exclusionary conducts and mergers as well as effective action taken against anticompetitive behaviors
- Probity of investigation: independence and accountability of the institutions enforcing the competition law as well as their procedural fairness
- Advocacy: activities promoting competition by other means than standard enforcement of the competition law, such as the review of regulation that might have an impact on competition.

Figure 5: OECD competition law and policy disaggregated indicators, 2013



Source: OECD Indicators of Product Market Regulation Database
Note: The scores vary on a 0-6 scale (from the most to the least effective competition regime).
The disaggregated set of indicators covers the same above-mentioned topics as the aggregated set of indicators but breaks them down into more specific policy areas.

Figure 6: EBRD competition policy transition indicator, 2012-2014



Source: EBRD transition indicators database
Note: The EBRD competition policy index takes the following values:
1: No competition legislation and institutions.
2: Competition policy legislation and institutions set up; some reduction of entry restrictions or enforcement action on dominant firms.
3: Some enforcement actions to reduce abuse of market power and to promote a competitive environment, including break-ups of dominant conglomerates; substantial reduction of entry restrictions.
4: Significant enforcement actions to reduce abuse of market power and to promote a competitive environment.
4+: Standards and performance typical of advanced industrial economies: effective enforcement of competition policy; unrestricted entry to most markets.

Annex 1

Competition policy rules *(de jure)* and implementation *(de facto)* methodology[15]

- **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 rule (*de jure)* 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.

As for the implementation assessment (*de facto)* regarding enterprises, for the case of abuse of dominance, hard core cartels, and other agreements, 1 (the highest score) is given if violations constitute at least 10% of the decisions. Regarding concentrations, 1 is given if 10% of the decisions have been modified in a way.

For the **state executive bodies**, the legal criteria (*de jure)* 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. As for the related implementation criteria (*de facto)*, 1 is given if violations are at least 10% of decisions.

Regarding **fines**, the legal criteria (*de jure)* 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. As for the implementation (*de facto)*, 1 is given if one of the three largest fines in the year was imposed on a cartel case. 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

[15] The methodology is mainly based on Dutz and Vagliasindi (2002 and 2000) and some particular aspects from Voigt (2009).

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.

On the *de jure* front, 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 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.

As for the implementation side (*de facto)*, it is required that the authority had comments on infrastructure regulations or had approved comments on privatization operations. On the awareness activities, 1 is given in case at least one speech or seminar has been directed to consumers. Half the score is given if it has been directed to small businesses.

It is worth mentioning here that Dutz and Vagliasindi (2002 and 2000) included in their advocacy assessment a dimension on privatization. On the *de jure* front, this 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 dominance. As for the *de facto* front, it is required that the authority had approved comments on privatization. We 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, 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 (*de jure*) require that the head is neither appointed nor answerable to the government nor to a particular Minister. On the *de facto front,* 0.2 is given if the head of the competition authority is not politically connected to the government/ruling party/ruling

family. Second, regarding the dismissal procedures of the head, the legal criteria (*de jure)* assume that the authority would be more independent if its head cannot be removed from office except by legal procedure. From a *de facto* perspective, if the actual term length and the one to be expected based on the law deviate, the authority is assumed to be less independent. Also, removing the head of the authority before the end of his/her term is a serious breach of independence. 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 (*de jure)* 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. On the *de facto* side, 0.2 is given if the government does not effectively give instructions to the competition authority. 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 *de facto* front, budget should have remained at least constant. Voigt (2009) argued that this budget aspect has an impact on the efficacy of the authority.

As for **the appeals**, on the *de jure front* 1 is given if the law grants ultimate appeal to courts or specialized independent tribunals while on the *de facto* front*,* 1 is given if appeals are based on economic content and zero otherwise. And finally, for the **transparency,** the legal criteria *(de jure)* require publishing all decisions or at least to make them publicly available. From a *de facto* perspective, 1 is given if the authority's decisions have been effectively published.

Annex 2

Competition Legislations in Arab countries

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

Country	Competition Law	Amendments (if any)
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
Jordan	Law No. 33 of the year 2004	Amendment 2011: The Law Amending Competition Law No. 18 of the year 2011
Morocco	Law No. 6-99 of the year 2000	Amendment 2014: Law no. 104-12 of the year 2014
Tunisia	Law No. 64 of the year 1991	Law no. 36 of the year 2015
Yemen	Law No. 19 of the year 1999	

Source: Authors' compilation from competition authorities' websites

Notes:

- For the case of 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 the case of 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.

Competition Rules Assessment Results (*de jure indices)*

	Djibouti	Egypt			Jordan		Morocco		Tunisia		Yemen
Years and different versions of the competition law	2008	2005	2008	2014	2004	2011	2000	2014	1991	2015	1999
Overall rules assessment	1.25	2.95	2.95	4.15	3	3	2.75	2.75	1.7	4.9	0.5
1. Enforcement against anti-competitive acts	1.25	0.75	0.75	1.75	2	2	1.75	1.75	0.5	1.5	0.5
Enterprises	0.25	0.75	0.75	0.75	1	1	0.75	0.75	0.5	0.5	0.5
Abuse of dominance	0	0.25	0.25	0.25	0.25	0.25	0.25	0.25	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
Other agreements	0	0.25	0.25	0.25	0.25	0.25	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	1	0	0	0	0	0	0	0	0	0	0
Fines	0	0	0	1	1	1	1	1	0	1	0
2. Advocacy	0	1	1	1	0	0	0	0	0	1	0
Infrastructure	0	0	0	0	0	0	0	0	0	0	0
Education	0	1	1	1	0	0	0	0	0	1	0
3. Institutional effectiveness	0	1.2	1.2	1.4	1	1	1	1	1.2	2.4	0
Independence	0	0.2	0.2	0.4	0	0	0	0	0.2	0.4	0
Appointment of the head	na	0	0	0	0	0	0	0	0	0	0
Dismissal of the head	na	0	0	0.2	0	0	0	0	0	0	0
Reelection of the head	na	0	0	0	0	0	0	0	0	0.2	0
Government supervision	na	0	0	0	0	0	0	0	0.2	0.2	0
Budget	0	0.2	0.2	0.2	0	0	0	0	0	0	0
Appeal	0	0	0	0	1	1	1	1	1	1	0
Transparency	0	1	1	1	0	0	0	0	0	1	0

Source: Calculated by the authors based on the countries following competition legislations:

- Djibouti: Law No. 28 of the year 2008.
- Egypt: Competition 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.
- Jordan: Competition Law No. 33 of the year 2004; amendment 2011: The Law Amending Competition Law No. 18 of the year 2011.
- Morocco: Law No. 6-99 of the year 2000; Law no. 104-12 of the year 2014.
- Tunisia: Law No. 64 of the year 1991; Law no. 36 of the year 2015.
- Yemen: Law No. 19 of the year 1999.

Note: It is worth clarifying that in addition to the above mentioned two versions of the Tunisian Law, it has been amended several times along the way until reaching the 2015 version (check annex 2 for more details. We do not display the results of the *de jure* assessment for these amendments along the way, but we made sure they are accounted for in our correlation exercise so that the index for Tunisia accounted for in the latter corresponds to 2012.