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ARAB PASSENGER AIRLINES FRAMEWORK AND PERFORMANCE: EGYPT, JORDAN, MOROCCO AND UAE

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This policy brief is the result of an ambitious research to study the impacts of the Arab airline industry framework on its performance and to investigate the effect of possible further liberalization on the number of passengers and welfare. It examines the historical framework for airline traffic and how it has evolved dramatically over the past three decades, from a duopoly in 1978 to the current, extremely competitive, market. It finds that one with one exception, Arab airlines tend to be underperformers. It concludes that the results should encourage the concerned governments to further push the liberalization of airline passengers markets.

Background

The historical framework for airline traffic has evolved dramatically over the past three decades. Before 1978 it had been a duopoly by route. However, following this date it became increasingly competitive. One of the first reactions came from some airline

companies themselves, through setting up inter-airline alliances. Following the intense debate inside policy-making circles (mainly in the U.S.) about the impact of alliances on competition, welfare and performance, the U.S. initiated Open Skies Agreements (OSAs), bilateral or multilateral, in 1979. OSAs allow American air carriers and the foreign signatory to make decisions on routes, capacity, and pricing and fully liberalize conditions for charters and other aviation activities including unrestricted code-sharing rights.

Different strategies have been adopted around the world. The USA is pursuing, through various bilateral and multilateral agreements, a strategy of liberalization (as near as possible) of the air markets. The European Union (EU) is following a regional strategy by implementing open skies among its members. The countries of the Association of South-East Asian Nations (ASEAN) have also agreed and are firmly proceeding with the formation of open skies within the region. As for Arab countries, some have entered the arena as members of alliances, others are involved in bilateral OSAs and the rest have chosen to sit it out.

A rich literature has investigated the impact of such evolutions on airline performance. It shows that the issue is a major concern because the airline framework

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can have important effects on fares, profits, consumer welfare and labor and non-labor mobility. While the impacts on fares, profits, consumer welfare are also important for the Arab region, the issue of mobility is crucial.

Surprisingly, studies on the impacts of Arab strategies (or lack thereof) in an evolving airline industry framework on the Arab world are nonexistent. In this context, it is not possible to assess whether the strategies the countries are pursuing are adequate or adaptable. In other words should they pursue multilateral, bilateral or regional agreements?

Accordingly, the Economic Research Forum (ERF) launched an ambitious research to study the impacts of the Arab airline industry framework on its performance and to investigate the effect of possible further liberalization on the number of passengers and welfare. This policy perspective summarizes the main findings of this research.

The Situation in Arab Countries

The performance of the Arab passengers' airlines industry has important implications for labor and non-labor mobility in the region. Labor mobility is a notable component of intra-Arab integration as well as of Arab integration with the rest of the world. Through migration, labor mobility has historically played an important role in absorbing a part of Arab labor forces. For instance, around 10 percent of Egypt's and 15 percent of Yemen's labor force are employed in other Arab countries not to mention a number of Arab workers settled in non-Arab coun-

tries. Around 75% of Maghreb emigration is oriented toward Europe. Non-labor mobility, in particular tourism, contributes significantly to the economy in many Arab countries. International tourism receipts as a percentage of GDP represented around 4% in Arab countries over the 2000s against less than 2% throughout the rest of the world. According to World Tourism Organization estimates, tourism to the region will grow at an average rate of 5 per cent per year through 2020.

Following the dramatic changes in the airline passenger industry over the past three decades, different strategies have been adopted around the world: mainly multilateral in USA and mainly regional in the European Union (EU) and in the Association of South-East Asian Nations (ASEAN). There hasn't been a clear strategy in the Arab world. Some countries have joined alliances, others are involved in bilateral OSAs and the rest have chosen to do neither. While the Arab Civil Aviation Council (ACAC) and Arab Air Carriers Organization (AACO) have agreed that bilateral OSAs should be started among Arab countries, this idea fizzled out and some countries went on to unilaterally conclude OSAs with non-Arab partners.

The Studies

This policy perspective summarizes the main findings of four country studies (Jordan, Egypt, Morocco and United Arab Emirates; UAE) which investigated the relationship between the current passengers' airlines framework and the performance of the sector in the country. Their analyses also aimed at investigating the impact of further liberalization on passengers and on welfare. To address these questions, the four studies adopted the same analytical framework; an extended version of the well-known Structure-Conduct-Performance (SCP) framework, widely used and debated in the industrial organization literature. It states that the structure of an industry determines firm conduct which, in turn, determines performance. However, the literature suggests that the direction of causality might run in other directions. Hence, the extended version of the framework allows causality go either directions.

The structure of an industry is reflected in the number and importance of players; producers and consumers, and on the institutional context. Firm conduct

concerns pricing, collusion, foreclosure etc. Depending on the purpose of the study, performance is measured through profitability or welfare. Here, the two main variables of interest are the number of passengers and welfare. Assuming constant costs, the latter depends on the number of passengers and fares. Accordingly, the studies investigated the determinants of both. More precisely, they:

- Computed an indicator of openness; noted OI
- Estimated the model (derived from the same analytical framework) incorporating the OI and other determinants to see its contribution
- Used the estimation results to simulate the impact of further liberalization on passengers and on welfare

To travel from point A to point B, the passenger can either choose a direct itinerary or an indirect itinerary through a point C which may affect the carriers involved in his/her trip. Moreover, the demand for air travel depends upon fares but also on frequencies and other service attributes such as the level and quality of air and airports services delivered. Hence, even with the same fares, the consumer may prefer different itinerary and different carriers. This has two implications for the choice of the framework to be used for the analysis. First, the analysis should be conducted at the route level and second the analysis should allow for diversity in consumers' choice.

Main Findings

Overall, Arab countries perform less than the rest of the world and are losing ground in terms of passengers carried. The four countries under consideration show a highly contrasted picture. Egypt exhibits a low and slightly increasing share in terms of passengers carried, comparable number of domestic carriers and lower number of airports. Its major carrier, EgyptAir, is mainly oriented toward the MENA destinations, has a lower load factor and a low profit rate. Jordan exhibits a high and increasing share in terms of passengers carried, comparable number of domestic and foreign carriers and high number of airports. Its major carrier, Royal Jordanian, is mainly oriented toward the MENA destinations, has a reasonable load factor and a low profit rate. Morocco exhibits a high and increasing share in terms of pas-

sengers carried, comparable number of domestic and foreign carriers and lower number of airports. Its major carrier, Royal Air Maroc, is mainly oriented toward European destinations, has a lower load factor and a very low profit rate. The United Arab Emirates exhibits a very high and rapidly increasing share in terms of passengers carried, comparable number of domestic carriers, much higher number of foreign carriers and much higher number of airports. Its major carrier, Emirates, is mainly oriented toward Asia & Oceania (including Australia), has the highest load factor and the highest profit rate. Table 1 summarizes the comparison between the four countries.

The Openness Indicator (OI), which is derived using Multiple Correspondence Analysis (MCA), shows that the least open routes concern the major airport in each country. However, the main airport is sometimes linked to open routes. Finally, routes linked to airports other than the main one are, in general, the most open.

The results of the simulation analysis are summarized in Table 2. They show that increased competition decreased fares in the four countries while the number of passengers decrease in Jordan and Egypt and increase in Morocco and the UAE. It must be

Table 1: Comparative Summary

	Country			
	Share of passengers	Domestic carriers	Foreign carriers	Airports per Km ²
Egypt	Low =	Comparable	Comparable	Lowest
Jordan	High +	Comparable	Comparable	Second
Morocco	High +	Comparable	Comparable	Third
The UAE	Very high +	Comparable	Very high	Highest
	Major carrier			
	Main destinations	Load factor	Profit rate	
Egyptair	MENA	Third/ Fourth	Second	
Royal Jordanian	MENA	Second	Third	
Royal Air Maroc	Europe	Third/ Fourth	Lowest	
Emirates	Asia & Oceania (including Australia)	Highest	Highest	

noted that the impact on the number of passengers must be qualified because, due to data limitation, the calculation concerns the present major carriers in each country (i.e. excluding small and low cost companies) and not all passengers to and from a given country. Hence, an increase in competition might decrease the number of, let's say, EgyptAir passengers and not the number of passengers to and from Egypt. The "lost" EgyptAir passengers are not "lost" Egypt passengers. Even with a constant income, the number of passengers to and from Egypt might increase if competition results in lower fares. Some of the existing passengers just switch from EgyptAir to another carrier.

Table 2 also shows that while the total revenue of producers decreases, the consumer surplus increases. However, the decline in producers' total revenue doesn't correspond to the decrease in their surplus (profits). One should assume an accompanying decrease in expenses. To get an idea of the decrease in producers' surplus, which is the relevant variable for computing welfare, we draw on companies report. They suggest that on average the producers' surplus is around 2.5% of total revenue. Therefore, we apply this percentage to arrive at an estimate of the decrease in producer' surplus. Adding this decrease to the increase in consumer's surplus gives an estimate of the impact on welfare. The net effect of producer

and consumer surplus changes on society welfare is positive; the consumer surplus increase outweighs the producers' surplus decrease. Note that even doubling the percentage of the surplus (i.e. to 5%) does not change the conclusion.

Policy Implications

The above results should encourage the concerned governments to further push the liberalization of airline passengers markets. It may, however, appear unpleasant to producers (major national carriers) and could disincentive them to support more liberalized measures even if the economy as a whole is likely to benefit from such measures. However, it's worth mentioning that firstly, this result doesn't take into account that major national carriers under competition pressure might improve their services and reduces their costs and, consequently, end up gaining, instead of losing, market share. Therefore, producers' revenue might become positive in the long run, eventually benefiting social welfare. Second, in such circumstances, the aviation authority should intervene and adopt the liberalization measures so as not to waste social welfare benefits. This might consist of twin strategies: encouraging effective entry of domestic carriers and fostering competition among them.

Table 2: Simulation Results of the Impact of One Standard Deviation Improvement in the OI all Routes

	Jordan	Egypt	Morocco	UAE
a. Actual number of passengers in 000	204.17	2324.89	9768.37	119.19
b. Simulated number of passengers in 000	180.39	2054.13	10742.82	228.25
c. Difference: (b - a) in 000	-23.78	-270.76	974.46	109.06
d. Actual average fare US\$	264	280	175.00	555
e. Simulated average fare US\$	260	276	154.00	255
f. Difference: (e - d) US\$	-4	-3	-20	-300
g. Difference in total revenue: (b - a) * d + (b * f) in 000 US\$	-6957.49	-82742.54	-55069.13	-7932.64
h. Change in consumer surplus: (- f * a) in 000 US\$	770.00	7986.35	195367.30	35743.65
i. Change in carriers surplus: g * 2.5% in 000 US\$	-173.94	-2068.56	-1376.73	-198.32
j. Net impact: (h - i) in 000 US\$	596.06	5917.79	193990.57	35545.33

ERF at a Glance

Our Mission

The Economic Research Forum (ERF) is a regional network dedicated to promoting high quality economic research to contribute to sustainable development in the Arab countries, Iran and Turkey.

Our Objectives

Established in 1993, ERF's core objectives are to build strong regional research capacity; to encourage the production of independent, high quality economic research; and to disseminate research output to a wide and diverse audience.

Our Activities

ERF has a portfolio of activities to achieve these objectives. These activities include mobilizing funds for well conceived proposals; managing carefully selected regional research initiatives; providing training and mentoring programs to junior researchers; organizing seminars and conferences based on research outcomes and publishing research output through various of publications, including working papers, books, policy briefs and a newsletter – Forum. All the publications may be downloaded at our website www.erf.org.eg

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The ERF network comprises a distinguished Board of Trustees (BOT), accomplished researchers from the region and highly dedicated staff. Located in Cairo, Egypt, ERF is supported by multiple donors, both from within the region and abroad.

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