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# Trade Liberalization in Arab Maghreb Union Countries <sup>i</sup>

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## Abstract

This paper explores the impact of trade liberalisation on the economies of the Arab Maghreb Union (AMU). We investigate the time period from 1995 to 2009 in terms of export growth, import growth, the balance of trade, and the balance of payments. Our empirical evidence shows that trade liberalisation did not enhance export growth in AMU countries during the given period. In contrast, it had a significant positive impact on import growth. Moreover, trade liberalisation worsened the balance of trade and the balance of payments. Governance indicators turn out to be important covariates in order to achieve the intended effects of trade liberalization.

**JEL Classification:** F13, F14, F15, H11.

**Keywords:** Trade Policy-International Trade Organizations; Empirical Studies of Trade; Economic Integration; Structure, Scope, and Performance of Government.

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# 1 Introduction

Our study is motivated by the fact that some developing countries adopted trade liberalisation as a way to promote economic growth. Yet, they did not achieve the expected level of economic growth. Furthermore, in some cases, trade liberalisation was considered to be a growth constraint. Calls for trade liberalisation have increased during the last three decades, especially from developed countries and international organizations, such as the World Trade Organization (WTO), which coordinates trade regulations between nations. These calls have promised developing countries that adopting free trade policies will lead to faster economic growth as well as increased welfare through specializing in the production of goods and services for which they have a comparative advantage. Indeed, not all countries that adopted trade policies have been successful. Mexico is one example where trade liberalisation failed to fulfil its promises. As of 1985, Mexico had eliminated all trade barriers, joined the General Agreement on Tariff and Trade (GATT), and signed several free trade agreements. Despite all of these efforts, Mexico did not achieve the anticipated gains from free trade policies. Although Mexico achieved high rates of export growth, imports ultimately grew more than exports did. While real wages remained at a relatively low level, unemployment increased, and overall economic growth was negligible.

Trade liberalisation is supposed to increase the growth of both exports and imports. However, the commonly used measure of in-and outflows, the balance of trade and the balance of payments are ambiguous, as they differ across countries. This is mainly because these measures are dependent on the impact of liberalisation on export and import growth as well as the effect of trade liberalisation on the prices of traded goods. Trade liberalisation may increase export growth and achieve a surplus in the balance of trade and balance of payments. However, it could also increase import growth more than export growth, causing deficits in the trade balance and balance of payments. In theory, it is well known that the effect of liberalisation on the balance of trade and the balance of payments is ambiguous. Some authors, such as Maneschi and Irwin (2003), found that free trade policy is not enough to promote growth in developing countries. Rather, such growth needs support from governments, including a suitable business environment in which to achieve the promises of trade liberalisation. This is especially true in developing countries, as most of them suffer from excessive regulation, corruption, civil conflict, poor infrastructures, and other institutional failings that prevent local firms from taking advantage of world markets. Additionally, countries that rely mainly on natural resources, such as oil, might have troubles growing their economies if they

neglect other productive economic sectors and become less competitive on international markets (Murshed, 2010). Poor economic institutions, corruption, lack of economic diversification, and human resources problems are the main features of these economies (Acemoglu and Robinson, 2005).

This paper is motivated by the observation that developing countries that have adopted trade liberalisation may not achieve a sufficient level of economic growth, and, in fact, trade liberalisation may be a major obstacle to economic growth. It focusses on the Arab Maghreb Union (AMU), which is a union of the following five North African countries: Libya, Tunisia, Algeria, Morocco, and Mauritania. Maghreb is the Arabic term for the western region of the Arab world. The AMU aims to represent the region's economic interests, promote economic and cultural cooperation, and cultivate mutual commercial exchanges in order to foster economic and political integration and the creation of a North African Common Market. AMU countries attempt to reform their economies by liberalising trade in order to promote growth and increase welfare. Some of them gained membership in the WTO in 1995, including Morocco, Tunisia, and Mauritania; Libya and Algeria are planning to join. The main objectives of the AMU treaty are to strengthen all ties among member states in order to ensure regional stability and enhance policy coordination, as well as to gradually introduce free circulation of goods, services, and factors of production among them. The treaty highlights the broad economic strategy to be followed—namely, the development of agriculture, industry, commerce, food security, and the setting up of joint projects and general economic cooperation programs.

Our findings show that trade liberalisation did not enhance export growth in AMU countries between 1995 and 2009, although it had a significant impact on import growth during the same period. As a result, this unequal impact led to a major deficit in the balance of trade, as free trade policy worsened the balance of trade. It appears that the elimination of export barriers did not enhance export growth in AMU countries, as anticipated. Also, AMU countries seem to suffer from a lack of best practice governance which has strong economic implications, as well.

## 2 Previous related literature

Trade liberalisation is expected to positively influence economic growth by capturing the static and dynamic gains from trade. Static gains are the economic benefits from trade, including the efficiency gains from exploiting comparative advantage, the reduced costs from economies of scale, reduction in distortion from imperfect competition, and

increased product variety. Dynamic gains, on the other hand, are the benefits from trade that accumulate over time, for example, increasing investment rates, technology transfer, indirect effects from foreign direct investment, and improvements in macroeconomic policies. While the traditional justifications for free trade rely on models stressing the importance of comparative advantages of a country, the newer literature puts more emphasis on the impact of international trade and trade liberalisation on countries that adopt such policies as well as the role of diversified economies in achieving economic growth.

Recent empirical studies have been quite critical about the effects of trade liberalisation. Santos-Paulino (2005) provided an important summary of the literature on trade liberalisation and its economic performance in developing countries. She discussed and analysed different theoretical and empirical approaches that have been developed since the 1970s, including studies that assess the impact of liberalisation on the balance of payments. The findings of the paper suggest that some studies have important implications regarding the balance of trade and the balance of payments. The author emphasises that excessive import growth on the one hand and modest export growth on the other, after applying trade liberalisation, may cause a deterioration and increases the deficit in the balance of trade and balance of payments. Furthermore, if imports grow earlier and faster than exports in the process of trade liberalisation, this could shed the light on the importance of following the proper sequence when applying trade liberalisation on export and import sectors in developing countries. The author suggest that more work is needed in assessing the impact of trade liberalisation. She claims that balance of payments crises in some developing countries have clearly shown how growth rates are constrained by the balance of payments position, as suggested by Khan and Zahler (1985). Finally, she recommends that if a developing country wants to benefit from trade liberalisation, it needs to provide the appropriate economic environment to support free trade policy. Empirical studies by Santos-Paulino and Thirlwall (2004), Santos-Paulino (2007), Pacheco-López and Thirlwall (2007) and others confirmed these findings. Cruz (2008) goes even further in the assessment of trade liberalisation: when trade liberalisation causes more harm than benefits to the economy, industrialization and development will slow down. The author suggests that gradual liberalisation and government intervention are important in order to avoid such slowdowns.

Governance and business environment are an important obstacle in the trade liberalisation debate. Pacheco-López (2005) argues that the potential gains from trade have often been diluted because trade policies have not addressed fundamental weaknesses in the industrial and financial sectors. Similar issues were pointed out by Maneschi and

Irwin (2003). The existence of corruption, civil conflict, excessive regulation, and other institutional failings could act as an obstacle and prevent economic growth, as these factors prevent local firms from taking advantage of world markets.

A further critical perspective on trade liberalisation comes from the resource curse literature. The resource curse hypothesis explains how it might be more appropriate to consider natural resources as an economic curse rather than an advantage. Auty and Warhurst (1993) described how rich countries that rely on natural resources, such as oil or mining, were unable to boost their economies and had lower economic growth rates compared to countries that were not abundant in natural resources. This is because when a country begins to focus on a single industry, such as oil, it often neglects other productive sectors in the economy. Mavrotas et al. (2011) and Murshed (2010) tried to determine the relationship between natural resource dependence and poor recent economic performance in fifty-six developing countries over the period 1970 to 2000. In point-sourced economies, which are countries rich in certain types of natural resources, such as oil and minerals, there are typically lower growth rates compared to more diversified economies; this may occur as a result of poor governance. Also, Acemoglu and Robinson (2005) argued that good economic institutions are very important for growth in the longer term.

The newer literature has a rather critical perspective on potential benefits arising from trade liberalisation. Overall, the effect of trade liberalisation on the balance of trade and the balance of payments depends on the relative impact of liberalisation on export and import growth and the prices of traded goods. Particularly for developing and resource rich countries, the transmission mechanism of liberalised trade is uncertain and full of impediments. An outstanding role in the functioning of this mechanism comes to the quality of the business environment and to governance.

### 3 Empirical strategy

Our analysis adopts the methodology used by Santos-Paulino and Thirlwall (2004), who examined the effect of trade liberalisation on export and import growth, the balance of trade, and the balance of payments for a sample of developing countries.

#### 3.1 Data

This study utilises a country-year panel for the time period 1995 to 2009. The panel consists of the five AMU countries Libya, Tunisia, Algeria, Morocco, and Mauritania.

They differ with regard to their application and implementation of free trade procedures. The data is compiled from a wide variety of sources, World Bank Development Indicators (WDI), the Government Finance Statistics Yearbook and data files of the International Monetary Fund, National Accounts data files of the OECD, as well as data from official bodies in AMU countries such as the Central Bank of Libya and the Central Bank of Mauritania. The World Bank Governance Indicator, called Kaufmann data throughout, serves as a source for governance variables. The unstable Arab Spring period is not included in this study.

The data has two major shortcomings. First, some of the data is not available for the full time window of interest. Second, there are a few outliers in the data which would seriously bias the estimates. We do not include these outliers in the estimations.

### 3.2 Empirical models and hypotheses

The models tested include four equations. Since trade liberalisation affects the main open economy aggregates, we estimate equations for export growth, import growth, the balance of trade, and the balance of payments. Models are estimated using the panel data estimates fixed effects and random effects methods. We specify these equations as follows.

The equation for export growth  $X$  is

$$\begin{aligned}
X_{it} = & \alpha_0 + \alpha_1 dx_{it} + \alpha_2 y_{it} + \alpha_3 w_t + \alpha_4 REER_{it} + \alpha_5 C_{it} + \alpha_6 TOT_{it} + \alpha_7 OP_{it} \\
& + \alpha_8 FDI_{it} + \alpha_9 gne_{it} + \alpha_{10} lib_{it} + \alpha_{11} X_{it-1} + \alpha_{12} lib \cdot REER_{it} + \alpha_{13} lib \cdot y_{it} \\
& + \alpha_{14} lib \cdot w_{it} + \alpha_{15} VA_{it} + \alpha_{16} PS_{it} + \alpha_{17} GE_{it} + \alpha_{18} RQ_{it} + \alpha_{19} RL_{it} + a_i + \varepsilon_{it}
\end{aligned} \tag{1}$$

Correspondingly, the equation for import growth  $M$  follows the specification

$$\begin{aligned}
M_{it} = & \beta_0 + \beta_1 dm_{it} + \beta_2 y_{it} + \beta_3 w_t + \beta_4 REER_{it} + \beta_5 C_{it} + \beta_6 TOT_{it} + \beta_7 OP_{it} + \beta_8 FRC_{it} \\
& + \beta_9 FDI_{it} + \beta_{10} gne_{it} + \beta_{11} lib_{it} + \beta_{12} M_{it-1} + \beta_{13} lib \cdot REER_{it} + \beta_{14} lib \cdot y_{it} \\
& + \beta_{15} lib \cdot w_{it} + \beta_{16} VA_{it} + \beta_{17} PS_{it} + \beta_{18} GE_{it} + \beta_{19} RQ_{it} + \beta_{20} RL_{it} + a_i + \varepsilon_{it}
\end{aligned} \tag{2}$$

The balance of trade to national income ratio,  $BOT/GDP$ , is estimated as

$$\begin{aligned}
BOT_{it}/GDP_{it} &= \gamma_0 + \gamma_1 BOT_{it-1} + \gamma_2 y_{it} + \gamma_3 w_t + \gamma_4 REER_{it} + \gamma_5 dx_{it} + \gamma_6 dm_{it} \\
&+ \gamma_7 TOT_{it} + \gamma_8 OP_{it} \gamma_9 FDI_{it} + \gamma_{10} FRC_{it} + \gamma_{11} gne_{it} + \gamma_{12} lib_{it} \\
&+ \gamma_{13} VA_{it} + \gamma_{14} PS_{it} + \gamma_{15} GE_{it} + \gamma_{16} RQ_{it} + \gamma_{17} RL_{it} + a_i + \varepsilon_{it}
\end{aligned} \tag{3}$$

Finally, the balance of payments to national income ratio  $BOP/GDP$  equation is

$$\begin{aligned}
BOT_{it}/GDP_{it} &= \delta_0 + \delta_1 BOP_{it-1} + \delta_2 y_{it} + \delta_3 w_t + \delta_4 REER_{it} + \delta_5 dx_{it} + \delta_6 dm_{it} \\
&+ \delta_7 TOT_{it} + \delta_8 OP_{it} \delta_9 FDI_{it} + \delta_{10} FRC_{it} + \delta_{11} gne_{it} + \delta_{12} lib_{it} \\
&+ \delta_{13} VA_{it} + \delta_{14} PS_{it} + \delta_{15} GE_{it} + \delta_{16} RQ_{it} + \delta_{17} RL_{it} + a_i + \varepsilon_{it}
\end{aligned} \tag{4}$$

These models deploy two approaches to capture trade liberalisation. The first is a duty rate measure for exports and imports, where the rate of export duty  $dx$  is measured as the ratio of export duty revenue to the value of exports; the rate of import duty  $dm$  is measured as revenue from import duties as a percentage of import value. The second measure takes the form of the dummy variable  $lib$  applied to the years in which trade liberalisation is considered to have taken place in a permanent way. This dummy variable  $lib$  is used as both a shift dummy and a slope dummy variable, and interacts with the price and income variables to capture the effect of trade liberalisation on income and price elasticities. Additional controls include the world income growth rate  $w$ , the rate of change of relative prices  $REER$ , and domestic  $GDP$  growth rate  $y$ . Musinguzi and Obwona (2000) and Parimal et al. (2006) found a statistically significant relationship between terms of trade  $TOT$  and export growth. Therefore, we include this control variable in all models.

In order to estimate the responsiveness of import growth to trade liberalisation, we use the import equation (2), following Santos-Paulino and Thirlwall (2004), and augmented by the additional variable of foreign currency reserves  $FCR$ , because this may be used to finance the imports. For the balance of trade and the balance of payments models, represented by equations (3) and (4), respectively, we deploy all of the variables in the export and import rate equations. In order to control for inflation, monetary values are transformed into 2000 US dollars. Dollar figures are converted from local



currencies using the average official exchange rate of the year 2000.

Furthermore, we use the augmented export growth rate equation (1) adopting Santos-Paulino and Thirlwall (2004), but add additional determinants of export growth. According to the Santos-Paulino and Thirlwall (2004) model, there are two main determinants that have a direct effect on the balance of trade: domestic income  $GDP$  and relative price changes  $REER$ . They suggest that changes in the price of exports and imports will automatically affect the monetary value of trade flows independently of liberalisation. Therefore, in order to control for these changes, they added a terms of trade variable  $TOT$  to separate the nominal and real volume effects of price changes on trade flows. In addition to the two measures of trade liberalisation (i.e., the duty rate and the dummy variable of trade liberalisation), we also add determinants from export and import equations. To account for differences in the size of countries, the trade balance is divided by  $GDP$ .

The balance of payments  $BOP$  shows all of the monetary transactions between a country and the rest of the world. Theoretically, the  $BOP$  should equal zero because it uses the double entry system; in other words, surplus (credits) and deficits (debits) should balance. The current account shows the net amount that a country is earning, if it is in surplus, or spending, if it is in deficit. Therefore, we use the current account in order to estimate the impact of trade liberalisation on the  $BOP$ , employing the same variables that we use to estimate the impact of trade liberalisation on the balance of trade.

For the outcomes of the regressions, we expect the coefficient signs central to this study to be correctly estimated if the following applies. Domestic income  $GDP$  is considered to have a positive impact on export growth in developing countries, as for instance found by Ng'eno (1990) and Kumar (1998). Gross national expenditure  $gne$  may stimulate and increase production. Foreign direct investment  $FDI$  is likely to have a positive effect on the export sector performance by transferring technology and, subsequently supporting the development of industries (Fugazza, 2004). Corruption  $C$  may act as a trade restriction and has a negative impact on export growth (Kaufmann et al., 2007). Also, the variables  $VA$ ,  $PS$ ,  $GE$ ,  $RQ$ , and  $RL$  are included, where the degree of best practice governance is likely to have a context-dependent impact on economic outcomes. Oil prices  $OP$ , according to some studies, have a significant negative relationship with the balance of trade. In addition, this variable can play a critical role in small open economies in terms of economic growth (Abeyasinghe, 2001).

### 3.3 Summary statistics

Table 1 in the appendix contains descriptions and summary statistics of the variables used in the regressions. We use three groups of explanatory variables, measures of trade liberalisation, macro controls and governance dimensions. The means of the duty rates for exports and imports have an important differential; a considerable higher import duty rate shows the protectionist character of the duty structure across AMU countries. With respect to macro controls, it is worth pointing out the mean rate of GDP growth of 3.902 percent in this group of countries. The governance variables have a common pattern, since all of them are to the left of the median of the world-ranking. Hence, the performance of governance in AMU countries is on average relatively weak, but not weakest on a world wide scale. The worst rankings in these countries substantiate in terms of voice and accountability *VA*, regulatory quality *RQ*, and rule of law *RL*. Finally, the AMU as a whole seems to be a difficult field for effective economic policies.

## 4 Results

### 4.1 Main findings

The results are reported in Tables 2 to 5 in the appendix. Overall, the estimates show that trade liberalisation impacted on import growth, but not on export growth. This together resulted in deficits on both, the balance of trade and the balance of payments. In terms of export growth, predictors include domestic income growth, world income growth, the rate of change of relative prices, and in particular the price of crude oil. Political stability and absence of violence/terrorism also play an important role in the determination of export growth. Considering import growth, free trade policies did impact, but also governance variables like voice and accountability and government effectiveness. Based on the estimates, the main issue that caused deficits in the balance of trade and balance of payments is the failure of free trade policy to enhance export growth, while it increased import growth dramatically. Furthermore, governance is a key issue in making the open economy aggregates work in favour of growth.

The specifications of models seem to have a strong explanatory power on the dependent variables. Goodness of fit is reported with  $R^2$  values ranging from 9 to 93 percent. Generally, values are much higher for the random effects models compared to the fixed effects models. The following discussion outlines the empirical findings for these aggregates in detail.

## 4.2 Results for export growth

Results are presented in Table 2. Coefficient estimates with statistical significance suggest that trade liberalisation had no impact on the export growth rates  $X$  of AMU countries. The main determinants of  $X$  are as follows: the domestic income growth rate  $y$ , the rate of change of the relative prices  $REER$ , and oil prices  $OP$ . The Kaufmann augmented panel in addition reveals political stability and absence of violence/terrorism variable  $PS$  as statistically significant.

The domestic income growth rate  $y$  had a significant and positive impact on  $X$ , as a 1 percentage point increase in  $y$  could increase export growth by up to 3.4 percentage points, so an expansion in production leads to an increase in exports (Kumar, 1998). In contrast, the  $REER$  has a significantly negative but small impact on export growth; a 1 percentage point drop in  $REER$  increases  $X$  by up to 0.32 percentage points. Furthermore, a 1 percentage point increase in  $OP$  increases  $X$  by 0.015 to 0.36 percentage points.

Overall, we interpret these findings in the following way. First, a poor business environment may slow down export growth and act as an obstacle, especially in developing countries because they suffer from excessive regulations on labour and capital movements as well as government intervention. A second reason for these results may be explained by the resource curse hypothesis. Countries that rely on natural resources, such as oil or mining, are unable to boost their economies because they suffer from poor governance. This yields a strong focus on a single sector, such as oil, while neglecting other productive sectors. In these types of economies, issues such as lack of economic diversification, human resources problems, and corruption occur frequently. These countries face negative growth rates after commodity prices fall, which is associated with a permanent loss of competitiveness (Murshed, 2010). Furthermore, poor economic institutions may have a negative impact on export growth over the longer term due to the degree of democracy and quality of governance in those countries (Acemoglu et al., 2005).

## 4.3 Results for import growth

With regard to the baseline and slope dummy specification (Table3), the results clearly show that trade liberalisation has a significant positive impact on import growth for AMU countries. According to the empirical results, the main determinants of import growth rate  $M$  in AMU countries are as follows:  $lib$  and  $y$ . It seemed to be easier for the importers of AMU countries to accelerate import growth once import restrictions were removed. Trade liberalisation increased the import growth between 12.024 and 46.73

percentage points. An explanation for this points at the appreciation of the currency in oil-exporting countries due to foreign capital accumulation causing imports to be cheaper and thus increasing in quantity. Domestic income growth has a positive impact on import growth, as a 1 percentage point increase lifts import growth by up to 2.14 percentage points.

Turning to the Kaufmann augmented specification, significant impact on  $M$  comes from Voice and accountability  $VA$ , Government effectiveness  $GE$ , the import duty rate  $dm$  and the terms of trade  $TOT$ . A 1 percentage point reduction in  $dm$  increases  $M$  by 1.5 percentage points. An increase in  $TOT$  decreases  $M$ . Furthermore, an increase in  $VA$  and  $GE$  increases  $M$  considerably. These results reiterate the importance of governance.

#### 4.4 Results for the balance of trade

The empirical results for the balance of trade equation are reported in Table 4. Estimates suggest that trade liberalisation had a significant negative impact on the balance of trade  $BOT$ . Given that the previous results regarding the export and import growth rates showed a significant impact on import growth and almost no impact on export growth, it could be said that trade liberalisation caused a deficit in the  $BOT$  of between 7.7 to 10.7 percentage points across different estimators.

In contrast, the result from both data sets indicate that the export duty rate  $dx$  and the domestic income growth rate  $y$  are statistically significant. An increase in  $dx$  has a significant negative impact on the balance of trade; the impact comes with a strong magnitude. A 1 percentage point increase in  $dx$  may cause a deficit in the  $BOT$  of between 7.6 and 12.1 percentage points, whereas domestic income growth  $y$  has a significant positive impact on the  $BOT$ , as a 1 percentage point increase in  $y$  improves the balance by up to 0.92 percentage points.

Results from the governance predictors using the Kaufmann data set suggest that political stability and absence of violence/terrorism  $PS$  along with government effectiveness  $GE$  have a statistically significant and positive impact of strong magnitudes on the  $BOT$ . A 1 percentage point increase in  $PS$  or  $GE$  increases  $BOT$  by 8.4 and 9.9 percentage points, respectively.

#### 4.5 Results for the balance of payments

In this part of the analysis, the results (Table 5) from both model specifications (the baseline and the Kaufmann augmented) show that trade liberalisation caused a deficit to the balance of payments (BOP) in both measures  $lib$  and  $dx$ . Ceteris paribus, the

main predictors of the balance of trade are:  $lib$ ,  $dx$ ,  $y$  and  $TOT$ .

Coefficient estimates show that  $lib$  has worsened the balance of payments by between 10.8 and 26.8 percentage points. This deficit in the balance of trade is likely to be caused by the interplay of increases in the import growth rate compared to smaller increases of the export growth rate. International money transfers caused by foreign direct investment in oil-producing countries are recorded in the factor income portion of the current account translating into a trigger of deficit. The export duty rate  $dx$  has a significant and negative impact on  $BOP$ . A 1 percentage point increase in  $dx$  caused the deficit to increase between 5.2 and 6.7 percentage points. Terms of trade  $TOT$  had a significant and positive impact on  $BOP$ . When  $TOT$  increases, the value of exports goes up compared to that of imports, and subsequently a country heads towards a surplus of  $BOP$ . A 1 percentage point increase in  $TOT$  would therefore improve  $BOP$  by 0.27 percentage points. The coefficient on  $REER$  was only significant in the results of the Kaufmann specification, showing a negative impact of low magnitude. A 1 percent increase in  $REER$  improves  $BOP$  by 0.14 percentage points.

With regard to the governance variables, all of them showed to be statistical significance; in particular  $PS$ ,  $RQ$ , and  $RL$  had a strong and positive impact on  $BOP$ . A percentage point increase improves  $BOP$  by 6.8, 6.2, and 10.11 percentage points, respectively. Meanwhile,  $GE$  had a significant negative impact on  $BOP$ , of 11 to 20.9 percentage points across specifications. These predictors again reflect the role of governance and the political system in their influence of economic outcomes.

## 4.6 Discussion

We now turn to the interpretation and discussion of our results. The findings indicate that the policies of trade liberalisation had the following important outcomes for Arab Maghreb Union countries: a deterioration in the balance of trade and higher deficits in the balance of payments. It appears that the elimination of export barriers did not enhance export growth in AMU countries, as anticipated. Specialising in production requires relocation of the resources, which in turn requires time and preparation. It has been difficult for the producers of these countries to relocate their resources in favour of goods and services for which they have a comparative production advantage.

The majority of the workforce is still in the agriculture and service sectors. The exported goods are mainly hydrocarbons (74 percent of AMU exports), manufactures (12 percent), and raw materials. The percentage of hydrocarbons in terms of total exports justifies the significance of GDP growth  $y$  and oil prices  $OP$  in the empirical

results as the main determinants of export growth, especially in oil-producing countries. The other exports reflect the significance of world income growth  $w$  and the rate of change in the relative prices  $REER$ , especially in less protected countries. These results clearly show that industrialisation has not been achieved. In the meantime, it was much easier for importers, once importing trade barriers were removed, to find the right suppliers in order to import goods and services that AMU countries need. In addition, the appreciation of the currency due to foreign capital accumulation in oil-producing countries tends to increase imports and make them cheaper. This might be an explanation for the significant positive impact of trade liberalisation on the import growth. As a consequence of this excessive import growth, trade liberalisation has yielded real deficits to the balance of trade.

Moreover, trade liberalisation made AMU countries more dependent on the industrial countries, as they account for about 80 percent of AMU exports and 60 percent of the imports. This makes AMU economies more vulnerable to economic changes in industrial countries. It is especially true in less protected countries, where exports rely mainly on agriculture goods, some manufactured goods, livestock, and raw materials.

In addition to the deficits in the balance of trade, the balance of payments suffered more deterioration as a result of trade liberalisation due to the increase in foreign direct investment  $FDI$ . Our results show that  $FDI$  had a significant positive impact on export growth, with low magnitude. However, the growth of  $FDI$  increased the outflow of the money transferred abroad from AMU countries, especially in oil-producing countries.

When a country relies on natural resources, such as oil or mining, it might not be able to boost its economies if it neglects other productive economic sectors. The economy will become overly dependent on the price of this sector's commodities. Wages will be higher than average in this sector, which will shift skilled labour from other productive sectors to this sector. As a result, the tradable sectors will be less competitive on international markets. Poor economic institutions, corruption, lack of economic diversification, and human resources problems are the main features of these economies (Acemoglu et al., 2005). Furthermore, economies that rely mainly on natural resource products do badly in terms of economic performance. In addition, due to a boom–bust cycle, these economies might be devoid of their resource rents and they will be kept away from industrialisation (Murshed, 2010).

Also, the instability of government policies could have a negative impact on export growth and the balance of payments. Economic instability creates uncertainty and loss of confidence, which discourages and delays local and foreign investors from setting up their business. It can create an insecure environment for the production factors, preventing

them from achieving their goals and increasing productivity. The potential gains from trade may have been diluted due to the weaknesses in government institutions.

There are also some macroeconomic constraints for developing countries, such as price levels, income distribution, subsidies, and currency devaluation, which may negate the effects of trade liberalisation and have a negative impact on the economies of developing countries in the short run, regardless of whether these countries rely on the agriculture sector or mineral sector for their exports.

## 5 Conclusions

The major motivation behind adopting trade liberalisation in developing countries is to promote economic growth and increase welfare. The elimination of trade barriers such as tariffs and non-tariff-barriers, government intervention, and ease of trade regulations have increased import growth significantly in AMU countries. At the same time, this policy agenda has not enhanced export growth. As a result, trade liberalisation has contributed to deficits in the balance of trade and the balance of payments. The empirical results indicate that a stand-alone implementation of trade liberalisation is insufficient. Most of the AMU countries suffer from unstable government policies, inefficient financial systems, poor infrastructure and business environments. These seem to weaken the export sector, adding extra costs to the exported products and making competition with industrial countries difficult. As a result of both, domestic consumers may favour foreign high-quality goods over domestic goods, which could result in an increase in import growth, adding an extra burden to both, the balance of trade and balance of payments.

Trade liberalisation does have the potential to benefit the economies of developing countries. However, when the interplay of the major channels of open economies is congested, trade liberalisation may result in adverse results and even harm these economies. In order to achieve the desired effects, countries require a suitable domestic business environment, best practise governance, supportive government policies, and diversified production.

”The authors certify that they have the right to deposit this paper on MPRA.”

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## Appendix

**Table 1:** Descriptive statistics

Variable	Description	Mean	SD
Dependent			
$X$	Export growth rate of country	5.026	13.205
$M$	Import growth rate of country	6.468	14.238
$BOT/GDP$	Balance of trade to GDP ratio	-0.229	20.530
$BOP/GDP$	Balance of payments to GDP ratio	3.028	13.091
Liberalisation measures			
$dx$	Export duty rate	0.356	0.467
$dm$	Import duty rate	10.539	6.151
$lib$	Liberalisation dummy, 1 if regulations on trade were changed, 0 otherwise	0.6	0.493
$lib \cdot REER$	Interaction term	58.79	48.72
$lib \cdot w$	Interaction term	1.65	1.80
$lib \cdot y$	Interaction term	2.54	3.92
Macro controls			
$REER$	Real effective exchange rate	95.692	26.251
$w$	World GDP growth rate	2.760	1.535
$y$	GDP growth rate, country	3.902	3.913
$TOT$	Terms of trade, relative prices of exports and imports	107.494	34.176
$OP$	Annual average crude oil price	37.38	23.57
$FCR$	Foreign currency deposits and bonds held by central banks and monetary authorities	18995.59	32068.43
$FDI$	Foreign direct investment	8.09	1.05
$gne$	Gross national expenditure	3.72	2.94
Governance			
$C$	Degree of corruption, world percentile rank	41.946	17.233
$VA$	Voice and accountability, rank in units of N(0,1)	-1.019	0.44
$PS$	Political stability and absence of violence/terrorism, rank in units of N(0,1)	-0.345	0.718
$GE$	Government effectiveness, rank in units of N(0,1)	-0.330	0.552
$RQ$	Regulatory quality, rank in units of N(0,1)	-0.553	0.589
$RL$	Rule of law, rank in units of N(0,1)	-0.466	0.443

Note:  $N=75$ .

**Table 2:** Estimations for export growth

Variable	Random effects			Fixed effects		
	Baseline	With slope	Kaufmann	Baseline	With slope	Kaufmann
<i>dx</i>	-5.754 (1.76)	-5.833 (1.77)	-7.02 (1.81)	-3.185 (0.71)	-2.933 (0.63)	-2.180 (0.49)
<i>y</i>	-0.095 (0.27)	0.201 (0.25)	-0.056 (0.16)	-0.243 (0.73)	-0.700 (0.86)	-0.133 (0.41)
<i>w</i>	2.017 (2.50)*	1.520 (1.07)	1.558 (1.92)	1.184 (1.49)	0.579 (0.41)	0.810 (0.94)
<i>REER</i>	-0.170 (2.78)**	-0.144 (2.16)*	-0.410 (4.30)**	-0.213 (2.71)**	-0.210 (2.36)*	-0.326 (3.20)**
<i>C</i>	-0.136 (0.83)	-0.104 (0.62)	-0.048 (0.21)	-0.084 (0.47)	-0.065 (0.35)	0.113 (0.50)
<i>TOT</i>	-0.049 (0.85)	-0.021 (0.34)	-0.106 (1.39)	-0.015 (0.24)	0.001 (0.02)	-0.062 (0.78)
<i>OP</i>	0.152 (1.36)	0.152 (1.30)	0.290 (2.16)*	0.340 (2.89)**	0.359 (2.77)**	0.432 (2.81)**
<i>FDI</i>	-0.029 (1.54)	-0.039 (1.88)	-0.031 (1.69)	-0.042 (2.31)*	-0.046 (2.30)*	0.033 (1.74)
<i>gne</i>	0.000 (0.02)	-0.000 (0.28)	-0.001 (0.37)	-0.003 (2.54)*	-0.003 (2.53)*	0.004 (2.47)*
<i>lib</i>	5.026 (0.75)	37.113 (1.59)	-1.30 (0.13)			
<i>lib·REER</i>		-0.352 (1.49)			-0.060 (0.25)	
<i>lib·y</i>		-0.359 (0.41)			0.581 (0.65)	
<i>lib·w</i>		0.690 (0.40)			1.002 (0.60)	
<i>VA</i>			11.931 (1.47)			5.77 (0.71)
<i>PS</i>			-8.740 (2.12)*			0.656 (0.11)
<i>GE</i>			3.474 (0.48)			5.70 (0.43)
<i>RQ</i>			-1.70 (0.36)			-14.130 (1.86)
<i>RL</i>			-4.640 (0.62)			-12.863 (1.47)
<i>X<sub>t-1</sub></i>	-0.321 (3.06)**	-0.312 (2.89)**	-0.380 (3.78)**	-0.41 (4.08)**	-0.405 (3.88)**	-0.450 (4.42)**
<i>const</i>	22.957 (2.37)*	19.089 (1.88)	56.670 (2.47)*	33.197 (2.61)*	34.993 (1.97)	34.601 (1.66)
$\sigma_u$	0	0	0	10.311	11.064	16.531
$\sigma_e$	8.857	9.003	8.602	8.857	9.003	8.602
$\rho$	0	0	0	0.575	0.602	0.787
Overall R <sup>2</sup>	0.35	0.37	0.47	0.16	0.15	0.09

Notes: Estimates for equation (1); abs. val. of  $z$ ,  $t$  statistics in parentheses.  
Significance levels: \* indicates that a coefficient is significant at the 5 percent level,  
\*\* at the 1 percent level.

**Table 3:** Estimations for import growth

Variable	Random effects			Fixed effects		
	Baseline	With slope	Kaufmann	Baseline	With slope	Kaufmann
<i>dm</i>	0.006 (0.02)	-0.428 (1.13)	-1.150 (2.51)*	-0.291 (0.68)	-0.649 (1.43)	-0.929 (1.90)
<i>y</i>	-0.094 (0.34)	2.146 (3.31)**	-0.045 (0.18)	-0.102 (0.35)	1.897 (2.67)*	-0.026 (0.10)
<i>w</i>	1.067 (1.72)	-0.527 (0.37)	0.391 (0.65)	0.996 (1.52)	-0.556 (0.38)	0.179 (0.26)
<i>REER</i>	-0.023 (0.43)	0.095 (1.47)	-0.067 (1.02)	-0.027 (0.38)	0.0949 (1.15)	-0.041 (0.53)
<i>C</i>	-0.063 (0.55)	-0.006 (0.05)	-0.255 (1.81)	-0.057 (0.45)	-0.053 (0.41)	-0.350 (2.27)*
<i>TOT</i>	-0.094 (1.75)	-0.079 (1.15)	-0.176 (3.13)**	-0.102 (1.82)	-0.056 (0.78)	-0.170 (2.96)**
<i>OP</i>	-0.078 (0.79)	-0.058 (0.60)	0.129 (1.23)	-0.033 (0.28)	-0.063 (0.56)	0.193 (1.39)
<i>FRC</i>	0.000 (1.23)	0.000 (1.26)	0.000 (2.43)*	0.000 (1.50)	0.000 (1.23)	0.000 (2.04)*
<i>FDI</i>	0.025 (1.59)	0.004 (0.24)	-0.009 (0.56)	0.0138 (0.77)	-0.009 (0.47)	0.017 (1.06)
<i>gne</i>	0.002 (2.33)*	0.001 (1.81)	-0.000 (0.32)	0.000 (0.54)	0.001 (0.73)	-0.001 (0.62)
<i>lib</i>	12.024 (2.18)*	46.732 (2.32)*	-18.52 (1.95)			
<i>lib-REER</i>		-0.394 (2.04)*			-0.495 (2.37)*	
<i>lib-y</i>		-2.583 (3.94)**			-2.416 (3.36)**	
<i>lib-w</i>		2.426 (1.43)			2.653 (1.50)	
<i>VA</i>			22.742 (3.38)**			21.860 (3.20)**
<i>PS</i>			-3.490 (1.08)			-3.774 (0.83)
<i>GE</i>			9.832 (2.25)**			23.148 (2.31)*
<i>RQ</i>			0.995 (0.30)			0.848 (0.14)
<i>RL</i>			3.655 (0.68)			0.49 (0.07)
$M_{t-1}$	-0.124 (1.31)	-0.002 (0.03)	-0.153 (1.72)	-0.133 (1.34)	0.020 (0.26)	-0.167 (1.86)
<i>const</i>	0.117 (0.01)	-9.217 (1.08)	80.042 (3.78)**	13.856 (1.31)	29.364 (1.88)	68.890 (3.74)**
$\sigma_u$	0	0	0	5.791	30.292	13.832
$\sigma_e$	6.551	6.211	5.774	6.551	6.211	5.774
$\rho$	0	0	0	0.439	0.960	0.852
Overall R <sup>2</sup>	0.44	0.55	0.609	0.13	0.001	0.234

Notes: Estimates for equation (2). See notes to Table 2.

**Table 4:** Estimations for balance of trade

Variable	Random effects		Fixed effects	
	Baseline	Kaufmann	Baseline	Kaufmann
$BOT_{t-1}$	0.793 (9.42)**	0.709 (7.49)**	0.784 (7.96)**	0.657 (6.45)**
$y$	0.928 (3.79)**	0.904 (3.80)**	0.959 (3.71)**	0.813 (3.42)**
$w$	-0.042 (0.07)	-0.323 (0.55)	-0.166 (0.27)	-0.440 (0.71)
$REER$	-0.028 (0.48)	0.0911 (1.45)	0.019 (0.27)	0.094 (1.33)
$dx$	-7.697 (3.16)**	-9.645 (3.81)**	-6.930 (2.10)*	-8.061 (2.57)*
$dm$	-0.251 (0.74)	-0.189 (0.42)	-0.184 (0.43)	-0.4.3 (0.88)
$TOT$	0.056 (1.02)	-0.041 (0.69)	0.059 (1.04)	0.034 (0.58)
$OP$	-0.090 (1.07)	-0.089 (0.93)	-0.057 (0.59)	-0.067 (0.59)
$FDI$	-0.007 (0.50)	-0.004 (0.32)	0.004 (0.31)	0.010 (0.69)
$FCR$	-0.000 (0.44)	-0.000 (0.97)	3.54 (0.03)	-0.000 (0.85)
$gne$	0.000 (0.40)	-0.000 (0.96)	-0.0006 (0.41)	0.004 (0.31)
$lib$	-7.778 (2.10)*	-17.859 (1.75)		
$VA$		0.968 (0.15)		-1.636 (0.25)
$PS$		8.441 (2.61)**		14.684 (3.08)**
$GE$		-9.970 (2.38)*		-13.365 (1.51)
$RQ$		4.557 (1.28)		-3.338 (0.60)
$RL$		7.379 (1.38)		8.953 (1.39)
$const$	6.286 (0.78)	8.641 (0.46)	-2.767 (0.30)	-3.330 (0.23)
$\sigma_u$	0	0	5.158	12.696
$\sigma_e$	6.924	6.241	6.924	6.241
$\rho$	0	0	0.357	0.805
Overall $R^2$	0.91	0.93	0.89	0.64

Notes: Estimates for equation (3).  
See notes to Table 2.

**Table 5:** Estimations for balance of payments

Variable	Random effects		Fixed effects	
	Baseline	Kaufmann	Baseline	Kaufmann
$BOP_{t-1}$	0.676 (5.38)**	0.515 (4.14)**	0.619 (4.78)**	0.513 (3.98)**
$Y$	0.871 (3.54)**	0.741 (3.23)**	0.852 (3.43)**	0.727 (3.17)**
$w$	0.784 (1.47)	0.644 (1.25)	0.622 (1.15)	0.334 (0.60)
$REER$	0.024 (0.47)	0.147 (2.67)**	0.089 (1.42)	0.182 (2.87)**
$dx$	-5.240 (2.47)**	-6.794 (3.09)**	-3.621 (1.23)	-5.705 (2.01)*
$dm$	-0.292 (0.94)	-0.310 (0.77)	-0.360 (0.96)	-0.331 (0.81)
$TOT$	0.208 (4.26)**	0.217 (4.16)**	0.211 (4.22)**	0.216 (4.11)**
$OP$	-0.070 (0.91)	-0.091 (1.07)	-0.008 (0.09)	-0.014 (0.14)
$FDI$	-0.009 (0.68)	-0.010 (0.80)	0.009 (0.67)	-0.010 (0.77)
$FCR$	-0.000 (2.15)*	-0.000 (1.91)	0.000 (0.66)	-0.000 (1.54)
$gne$	0.000 (0.62)	-0.000 (0.83)	-0.001 (1.03)	0.000 (0.45)
$lib$	-10.839 (3.40)**	-19.840 (2.31)*		
$VA$		-2.543 (0.45)		-5.251 (0.90)
$PS$		6.819 (2.43)*		11.530 (2.84)**
$GE$		-11.068 (2.97)**		-7.017 (0.89)
$RQ$		6.298 (2.09)*		-0.214 (0.04)
$RL$		10.114 (2.08)*		7.229 (1.24)
$const$	-12.938 (1.87)	-13.997 (0.83)	-22.775 (2.86)**	-31.495 (2.36)*
$\sigma_u$	0	0	8.605	13.249
$\sigma_e$	6.181	5.594	6.181	5.594
$\rho$	0	0	0.600	0.849
Overall $R^2$	0.82	0.89	0.51	0.21

Notes: Estimates for equation (4).  
See notes to Table 2.