LUND UNIVERSITY

School of Economics and Management

AMU and the cushion effect

A study on PTAs' effectiveness during political unrest

Authors: Ridell, Gustav & Tyrling, Viktor

Supervisor: Gullstrand, Joakim

Seminar date: January 11th 2018

Abstract

This paper focuses on the relationship between PTAs and political uncertainty. Further, it analyses if the AMU has managed to create a dampening effect and thereby maintain the intratrade flows during the Arab Spring. This can be interpreted as the cushion effect. Previous literature has not addressed this unique approach. This could be due to the belief of AMU being an inefficient trade agreement or its rather few members gaining a small share of the world's attention. The data observed consisted of bilateral trade flows from 2005-2015. Our specification uses a dummy variable to capture the Arab Spring between 2011-2012. The political unrest was further investigated with the help of the gravity model by comparing two groups, a focus group (AMU) and a control group, including other MENA-countries. The paper concluded that although the AMU seemed to have its flaws, it still managed to partly create a cushion effect. According to our regressions, the large countries within the trade agreement increased their intra-trade during the uncertainty. The Arab Spring had a different effect on small member states, their intra-trade decreased during the same period. The paper managed to highlight the importance of well-functioning PTAs during times of uncertainty.

Keywords: Bilateral Trade, PTA, Arab Spring, AMU, Political Uncertainty

Abbreviations

AMU - Arab Maghreb Union

FTA - Free trade agreement

GATT - General Agreement on Tariffs and Trade

MENA - Middle East and North Africa

MFN - Most Favoured Nation

MTR - Multilateral Trade Resistances

NAFTA - North American Free Trade Agreement

PTA - Preferential trade agreement

UN - United Nations

WDI - World Development Indicators

WEF - World Economic Forum

WTO - World Trade Organization

Contents

1. Introduction

The essential focus of most economies is to achieve economic growth. To increase trade flows and thereby economic growth, economies enter different trade agreements. One way to facilitate trade and to reduce trade barriers is to enter a PTA. Countries engaging in PTAs strive for reduction of its trade costs, such as lowering internal tariffs or by creating common external tariffs (Baldwin and Wyplosz, p.120, 2015). PTAs' effectiveness partly conditions on the structures of the agreements. Jung (2017) argues that this is mainly dependent on the depth of the economic and political integration. However, a PTA functions as a discriminatory trade agreement and contradicts the MFN rule stated in article I of GATT, latest modified in 1994. Further, the WTO has formed an exception regarding PTAs and the MFN-principle, it can be found in article XXIV (WTOa, 2018). An acknowledged example of a PTA is NAFTA Conflicts and political unrest can counteract trade. They create uncertainty which is rarely beneficial. On the other hand, the objective of PTAs is to stabilize trade and remove trade costs. It is therefore highly important for PTAs to address the uncertainty-dilemma and function as a cushion effect.

An initiative of creating a PTA between the five Maghreb countries in northern Africa was introduced in 1988. The treaty addressed a will of increased regional integration and future economic development. Furthermore, the first meetings focused on the importance of removing the intra-trade barriers (UMA, 2018). In addition, the union wanted to impose common external tariffs against the rest of the world to function as a customs union. The union is today known as the Arab Maghreb Union (World Bank, p.5, 2010).

In 2011, a massive democratization movement arose in the MENA-region because of conflicts between the governance and the people. The events became famous worldwide and named the Arab Spring. The new political climate created instability in most countries and even evolved into civil wars in some cases. The events of the Arab Spring and its consequences will be further discussed in our text. All the AMU countries were exposed and affected by the unrest, but to different extents. The economic as well as the political impact from the events varied between the countries. This enables the possibility to analyse if the integration of the AMU has

cushioned the negative effect on trade caused by the political unrest. We will assess if the AMU has managed to do this by observing the Arab Spring and the AMU through a cushion effect.

The purpose of this essay is to examine if the AMU has had an impact on its members by reducing the trade costs connected to the political instability of the Arab Spring. Hence, AMU's possibility of causing a cushion effect for its members. The cushion effect will be assessed by using the gravity equation on the period 2005-2015.

First, we review the literature on the relationship between trade, PTAs and conflicts. Second, we present our approach and methodology, in which we conduct an empirical specification of the gravity model. Then the data is discussed, and the results are presented. Finally, we analyse our findings in a concluding remark, where potential future studies are mentioned.

2. Background information

2.1 The creation and structure of the AMU

The AMU functions as a PTA between five countries located in a northern part of Africa called the Maghreb-region. The five countries are Mauritania, Morocco, Algeria, Tunisia and Libya (World Bank, p.2, 2010).

The first meeting related to the PTA was held in Alger in 1988, where the five chiefs of states discussed a future cooperation. The PTA was officially founded in 1989 during a second meeting in the Moroccan city of Marrakech. A treaty was signed which aimed to improve and consolidate the countries' policies and strategies. The treaty included a vision of increasing regional integration and future economic development. Four summits were organized the coming years and the latest official summit was held in 1994 (UMA, 2018).

The meetings concluded five official objectives of the AMU:

- "Strengthen the ties of brotherhood which links the member states and their people to one another."
- "Achieving progress and prosperity of their societies and defending their rights."
- "Contributing to the preservation of peace based on justice and equity."
- "Pursuing a common policy in different domains."
- "Working gradually towards achieving free movement of persons and transfer of services, goods and capital among them." (UNECA, 2016)

The importance of establishing a FTA, by removing all intra-trade tariffs and other trade barriers, was also stated during the first meetings (UNECA, 2016). A FTA is a trade agreement that focuses on liberalizing the trade amongst its members, without changing the countries' external tariffs (Baldwin & Wyplosz, p.131, 2015).

The trade within the region has been discouraged by internal conflicts. Several conflicts have hampered the cooperation. For instance, Algeria and Morocco are in a dispute over West-Sahara. Morocco has stated that any independence movement in the province is an attack on the sovereignty of Morocco. Algeria has traditionally encouraged and advocated on the creation

of an independent West-Saharan state. This, together with the closed border between the two countries, is not beneficial for the AMU (Fanuli, 2014). The lack of diversification in the export industries is another challenge that may countervail the intra-regional trade (World Bank, p.1, 2010).

A report from the World Bank argues that the Arab Maghreb Union is less efficient than what should be expected. The report includes criticism against the AMU and its integration. Mainly, because the AMU has lower intra-trade levels compared to other trading agreements. The intra-trade within the union represents less than two percent of the region's GDP and three percent of its trade. Most research points towards high trade barriers and poor intra-regional infrastructure as an explanation concerning the inefficiency (World Bank p.21, 2010).

The head of social engagement at WEF, Wadia Ait Hamza (2017), argues similarly that the lack of intra-regional infrastructure and significant trade barriers amongst the members are the main concerns within the PTA. Furthermore, he mentions that the region has an immense potential. However, the issues concerning the PTA need to be addressed. The lack of security cooperation is another problem affecting trade.

To summarize, the AMU has been criticized for failing to reach its stated objectives. An official aim, later stated by the PTA, was to create a North African custom union by 1995 and an economic common market by 2000. None of these two targets have been fulfilled yet (World Bank, p.6, 2010).

2.2 The origin and events of the Arab Spring

The tragedy involving the Tunisian fruit vendor Mohammed Bouazizi was the start of a political movement which resulted in the Arab Spring. In 2010, Mr. Bouazizi lit himself on fire at a public square in Tunisia. He was desperate and felt mistreated by the local authorities. His death became the catalyst of the coming political turbulence (Amnesty International, p.1, 2012). The people of the MENA-region were fed up with their corrupt leaders and demanded more freedom. A lot of criticism was directed towards the leaders who took control over the countries after World War II. Nationalist leaders claimed to represent the people, but there was a major dissatisfaction from the public towards their governance. The disbelief of the people finally

abrupted into several political demonstrations, revolutions and conflicts during 20112012 summarized as the Arab Spring (Zartman, pp.1-3, 2015).

An issue for the opposition during the Arab Spring was its lack of unity. It consisted of both youths demanding more democratic rights, different clans with various agendas and Islamic groups who longed for a state ruled by sharia laws. The divided movement created tension and conflicts. Some countries ended up in failed states, for example Libya and Syria. Others had their leaders overthrown due to demonstrations and new governments installed. This occurred both in Egypt and Tunisia (Zartman, pp.1-2, 2015). The Arab Spring did not have a vast effect on all countries. For instance, Morocco implemented some new democratic laws to please the growing opposition, but the change was not as comprehensive as in Egypt or Tunisia (Amnesty International, p.42, 2012).

2.3 The Arab Spring and the AMU

There has been a significant amount of political turbulence within the AMU countries. However, there are also arguments implying that the Arab Spring could lead to a beneficial debate about the future politics of the region. Whether the Maghreb countries will increase their intra-trade mainly hinge upon the political will of their governments (Pressenza, 2012). Further, Achy (2012) argues that the Arab Spring had the potential of working as a catalyst for increased operations within the AMU.

The increased focus on creating political stability, as an effect of the disturbances, has given the economic situation of the countries less attention. This has led to high rates of unemployment, lack of diversification and inadequate infrastructure. These factors are a threat to the trade of the region (Khan & Mezran, p.6, 2016).

3. Literature review

3.1 The increasing importance of PTAs

Numerous studies with varying focus have been completed on PTAs. Hoekman and Kostecki argued for PTA's increased role in the world economy, simultaneously as the WTO is becoming less influential. They described in their book how PTAs can be used as a tool to put pressure on the WTO, to show that the organization needs to become more efficient and reliable. The authors also stated that PTAs offer deeper market integration as they include sectors that are not a part of the WTO. An additional subject that is discussed is the cost of being outside of a PTA. The more countries that enter PTAs, the higher is the cost of not being included (Hoekman & Kostecki, p.479-480, 2013).

Furthermore, Saucier and Rana (2017) stated that PTAs receive larger influence over trade. They discuss their research by examining how an increased number of PTAs affect the structures of the trade agreements.

The increased importance of PTAs can be proved by viewing data from the WTO. 124 regional PTAs were established between 1948-1994. Additional 300 active agreements have been notified at the WTO after its creation in 1995. There are also several hundred inactive PTAs (WTOb, 2018).

3.2 PTAs and their influence on trade volume

In an article, Foster (2012) debated PTAs and their effects on imports. His paper managed to find a correlation between the formations of new PTAs and an increased amount of imports between the members. Foster (2012) completed his research by assessing import's relation to GDP, distance, population size and other variables with help of the gravity model. The model is frequently used when examining trade flows. He added several dummy variables in his regressions, including variables such as: common language, common borders and cooperation between the importer and the exporter through a PTA. In addition, the author used a variety of country and country-pair fixed effects to specify the regression and to handle the endogeneity of the panel data. His findings are in line with previous research completed.

A survey performed by the WTO strengthens the connection between PTAs and increased trade. The survey highlights the efficiency of PTAs when it comes to reducing trade costs, thereby increasing trade volume. It states that a country engaged in trade with another country, outside of a PTA, has twice as high trade costs compared to two countries engaged in the same PTA (WTO, pp.75-76, 2015). The survey consists of trade data from UNESCAP World Bank database and covers 167 developed and developing countries from 1995 to 2012 (WTO, p.67, 2015).

Abdullah et al. (2015) argued similarly to Foster (2012). However, the focus of Abdullah et al. (2015) lies on the AMU and not PTAs in general. The paper concluded that the intra-trade within the AMU did not reach its expected level, even though AMU has increased the member states' intra-trade. They stated that the AMU countries' trade relations differed, some cooperation worked better than others. This strengthens the previous sections of this paper, which highlighted the possible inefficiency of the AMU. Furthermore, Abdullah et al (2015) used the gravity model, in which they included GDP, distance, population and other measurements in their regressions. A dummy variable for common language were also used. The authors introduced the random effects model in their model, which is similarly to Foster's (2012) fixed effects model. It recognizes heterogeneity in the cross-section. However, Abdullah et al (2012) generated the effects by using a specific distribution. The model does not measure each effect individually, which can be a problem with the fixed effects model.

Both Foster (2012) and Abdullah et al (2015) used panel data from various time frames. Foster retrieved his trade data from a research completed by the National Bureau of Economic Research while Abdullah et al (2015) used sources such as the World Bank and WDI.

3.3 Optimal structures of PTAs

As mentioned in section 3.1, Saucier and Rana (2017) focused on varying structures of PTAs. This includes several types of deals that should be incorporated in trade agreements, and how the members' domestic conditions affect PTAs. The authors' approach was based on the belief that PTAs are structured in heterogeneous ways. In other words, the arrangements differ. Their research indicated that PTAs facilitating labour mobility and environmental provisions in an

efficient way unambiguously increase trade flows. Factor such as capital mobility and competition policy, that also can be included in PTAs, showed no significant effect.

Abdullah et al (2015) examined the effect of including foreign currency reserves and real exchange rate in the negotiations of PTAs. They found evidence of significant relationships between trade, foreign currency reserves and real exchange rate. The real exchange rate needs to be held at a competitive level according to the authors. Both foreign currency reserves and real exchange rate was included as variables in their gravity model.

Both Saucier and Rana (2017) and Abdullah et al (2015) managed to find determinants that are important to assess when forming PTAs. Another article written by Limão and Maggi (2013) highlighted the importance of the economies being open and specialized to favour the structures of PTAs.

In addition, Saucier and Rana (2017) included variables concerning previous colonialism in their gravity model, unlike the other articles. The variables assessed if the exporter or the importer had been colonized by each other, or if they had been colonized by the same third country. They found evidence of that colonial history, between an importer and exporter, increases trade. However, trade between two countries with a common former colonizer does not seem to increase the bilateral trade flows.

3.4 Political unrest and its effect on trade

Numerous studies have been written on political unrest and its effect on trade. Blomberg and Hess (2004) concluded that political instability and violence is a larger threat to trade than traditional tariffs. Terrorism, revolutions, external wars and intra-state conflicts was examined. They all had a negative impact on trade flows. Cuervo-Cazurra et al (2013) argued that intrastate conflicts have larger negative effects on trade compared to inter-state conflicts. This, since the domestic conflicts are not protected by international laws and governance in the same way. The authors concluded that intra-state conflicts decrease GDP. A decrease in GDP weakens the country's economic capacity and thus also trade.

Cuervo-Cazurra et al. (2013) broadened their research by discussing a conflict's impact on a specific region's trade environment, not political disturbances' effect on trade in general.

A conflict, in a neighbouring country, decreases the willingness of investors to operate in an area. Hence, hampers the regional trade. Bayer and Rupert (2004) conceived a comparable conclusion, regarding internal conflicts and its effect on a region, when they examined bilateral trade in a previous article.

Cuervo-Cazurra et al. (2013) highlighted threats to regional trade that may increase during a conflict. This included outflow of capital, movement of people and increased corruption. Further, Bayer and Rupert (2004) discussed additional threats which may evolve during political unrest. They mentioned increased military expenditures and other security related costs which have a negative effect on the export sector. In addition, all the articles included the gravity model in their research.

3.5 The cushion effect

Limão and Maggi (2013) discussed ways for PTAs to handle political unrest. They examined several trade agreements and their ability to maintain regional trade during times of uncertainty. In other words, they examined the capability of PTAs to function as a cushion effect. The authors did this by running regressions where data concerning political unrest and trade patterns was used.

Limão and Maggi (2013) wrote a highly topical article, since it combines the study of PTAs with political unrest. The study was exemplified by viewing data from trade relations between Cuba and USA from 1903-1934 using the Montevideo-Oxford Latin American Economic History Database. The authors stressed that a fundamental part of trade agreements should be to increase the predictability of trade flows. They highlighted that governments need to be able to rely on PTAs during times of uncertainty. In addition, Limão and Maggi (2013) stated that uncertainty is likely to have a major impact on trade flows within a region if the trade agreements fail to address shocks and disturbances.

4. Methodology

4.1 Our approach

4.1.1 AMU and the cushion effect

Our aim is to assess if the AMU managed to create a cushion effect during the Arab Spring. After intensifying our research on the PTA, we believe that the AMU seems to be quite inefficient. Thus, we are not sure in finding obvious evidence for a strong cushion effect connected to the AMU. The last official meetings were held in 1994 and the PTA has failed to fully implement its stated trade policy. One of AMU's objectives was to improve the political relations in the region, which the PTA is struggling with due to political tension between members.

However, we believe in the possibility of finding a palpable variation in trade amongst the member states due to the varied sizes of their economies. It is possible that the results will indicate a less negative effect of the Arab Spring on larger AMU countries, maybe a slightly more visible cushion effect. Our thesis is built on the fact that larger countries may have the capacity to absorb trade from smaller countries due to their economies of scale.

We believe that there may be a difference in trade flows between oil exporting countries and other member states. The argumentation is based on the belief that oil is a merchandise which is demanded continuously, even during political disturbances. On the contrary, countries highly dependent on oil may suffer during political unrest due to price fluctuations (Rosenberg, 2016).

4.1.2 Contribution to the research of PTAs and political unrest

Previous literature states that PTAs are becoming increasingly important when facilitating trade flows. We will develop the thesis by using AMU as an example. Research concerning PTAs has stated that the structures of the agreements matters. Our paper will assess if the AMU is organized efficiently enough by looking at trade flows during the Arab Spring. The gravity model is frequently used when examining how PTAs affect trade. We will continue with this by adapting the model to our specific example and thereby creating a new angle of incidence.

Our paper will retrieve trade data from Comtrade when assessing trade flows. Previous literature, in section 3, has used other sources of information when looking at trade numbers. We will only assess import flows while some research has assessed both import and export. This will be done due to the simplicity of analysing the data.

Most of the articles mentioned in this sector focused on political unrest in general, and not particularly on the Arab Spring. Consequently, no previous literature has combined the cushion effect on general trade during the Arab Spring. This paper will also add an interesting perspective by investigating if the size of the members' GDP and the amount of oil they export affect the cushion effect.

The research will be conducted by viewing the member states' intra-union trade from 2005-2015. Our results will then be compared with other trade flows in the MENA-region during the same period to examine if the AMU has managed to dampen the effects of political and economic uncertainty caused by the Arab Spring.

4.2 Theoretical background

Jan Tinbergen was an important Dutch economist. His originate work was essential in how to examine bilateral trade flows. It can be approximated by the gravity equation. The model, much like Newton's law of gravity, illustrate three main factors relevant to determine the size of bilateral trade flows. The three factors consist of the mass: the relationship between the sizes of the trading countries' economies, distances and the amount traded (WTO p.103, 2012).

The model includes a range of factors affecting bilateral trade flows such as relatively short distances and similar sizes of the economies. Hence, the size of economies is an important variable when examining a broader trade data. However, there are more factors that should be highlighted, such as language and cultural similarities (Krugman et al, pp. 11-13, 2012).

The intuition of gravity model is that the size of the economies is a key factor to determine bilateral trade flows. Larger economies tend to import more from each other due to their larger demand for merchandise. Hence, the importers need suppliers that can satisfy the demand. Furthermore, large economies usually carry out a larger share of the market and therefore influence prices. The size of the economies is measured in nominal GDP, the value of all products and services produced in one country for one year.

Another essential component in the model is transport costs (Krugman et al. p.13, 2012). It consists of costs that increase when a good or service are required to be transported. The costs depend on distance, tolls, roads, ports, airports etc. A stronger infrastructure often leads to lower transport costs and therefore more trade. These costs can also be illustrated as "iceberg" costs (WTO p.104, 2012). The interpretation of "iceberg" costs can be described as: when trade costs occur, some of the value disappears or melts. This in turn, creates incentives not to trade and may result in lower trade flows.

The gravity model approximates trade by using language and cultural similarities as variables. An example of this is that Ireland trades a considerable amount with the US, which is a contradiction against the gravity model. Krugman et al. argue that this is because they both have a common language (Krugman et al. p.13, 2012). The general gravity equation can be denoted as (see WTO p.104, 2012):

$$X_{ij} = GS_i M_j \Phi_{ij} \tag{1.1}$$

In our model, X_{ij} represents the value of imports, G is a variable that does not depend on either i or j. S_i stands for exporter-specific factors and M_j for importer-specific factors. S_i and Mj represent the total exporter supply and total importer demand, respectively. The last variable, Φ, represents exporter i's access to market j. (WTO, p.104, 2012)

Further, research has acknowledged the importance of specifying the gravity model, to make it more accurate. Taking relative trade costs into consideration, enables the model to be more specified. When bilateral trade occurs, both countries are usually seeking other trading partners, where the costs are lower. Hence, if the relative trade costs are higher within the intra-trade, they will most likely change trading partner. Countries with lower trade costs are usually larger economies. The countries would prefer trading with larger economies of scale, rather than their neighbour to avoid higher trade costs. This is rather contradictory to the gravity model, which could diminish the model. On the contrary, the model becomes more specific if it enables the inclusion of an additional variable. The additional variable would consist of the

resistance on importing and exporting goods and services due to relative trade costs, known as MTRs (WTO, p.105, 2012).

4.3 Trade costs and uncertainty

As mentioned in section 4.1, an important variable to consider when analysing bilateral trade flows are trade costs, which affects both trade volume and patterns. The concept of trade costs is rather wide (WTO, p.60, 2015). Factors included could for example be infrastructure and logistics. Another aspect is the local environment, including both the political and economic situation, which can differ due to several reasons (WTO, pp.75-76, 2015).
Adequate strategies on how to reduce trade costs vary from nation to nation. It depends on the country-specific situation, such as different degrees of uncertainty (WTO, p.73, 2015).

In addition, trade costs should also be prioritized due to the distortion it creates within a country. These costs cause a disturbance, which complicates the decision of which industry the country will specialize in. Hence, the country may lose some of its initial comparative advantage (WTO, p.63, 2015). This statement is also strengthened by an empirical survey from the WTO. The survey examines the impacts of lower trade costs for importers and exporters. Its results indicate that lower trade costs may support economic development. The impacts were beneficial both for importers and exporters, higher revenues in their respective markets (WTO, p.65, 2015).

To reduce trade barriers or trade costs a nation can enter a PTA. The deeper the integration is, the more trade barriers as well as trade costs will decrease. A PTA can also lead to the creation of similar policies, such as currency areas. These could in turn stabilize the uncertainty that comes from political and economic fluctuations. Examples of these fluctuations are exchange rates and foreign direct investments. This was examined empirically with help of a trade agreement between South Africa and Mozambique. The agreement has led to lower trade barriers, mainly tariffs, but also to lower trade policy uncertainty (Sequeira, p.3030, 2016).

4.4 Empirical specification

We are applying the cushion effect on the AMU and the Arab Spring, a further specification of the gravity model is therefore needed. As a benchmark we will use a rather specific gravity model, taking MTR's into consideration. By deriving the previous equation (1.1), we can specify the gravity equation further, including MTR in the new equation. The value of imports in our model is expressed in the following way (see WTO p. 105, 2012):

$$x_{ij} = \frac{y_i y_j}{y^w}\left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma} \tag{1.2}$$

The equation above is including variables such as size of economies, trade costs and market access. In our case when determining the variations over time for the Arab Spring, we use the fixed effects model to secure other crucial factors that might affect the total imports, Xij, for country i and j. The fixed effects model removes the constant variables, which does not vary significantly over time. This would include effects such as distance, language, cultural differences etc. Equation (1.2) is used to define the trade cost, t_{ij}. Defining it further gives us:

$$t_{ij} = e^{AS}\, x\, dis^{\delta}\, x \ldots \tag{1.3}$$

In this case, only the variable Arab Spring is focused, the rest of the following variables are irrelevant, due to our application of the fixed effects model.

To examine the time variation, the fixed effects model is applied. We use one primary group and compare them with a control group. What these two groups have in common is that all members from both groups were affected by the Arab Spring. However, the primary group consists of members of the AMU, and the control group is formed by other MENA countries that are not members of the AMU.

To analyse the data, Stata v.13 was used. We created one dummy variable to compare the two groups. However, this variable consisted of an interaction with two other dummy

variables. One which took the value 1 if the country were affected by Arab Spring, which were denoted for all countries during 2011-2012, otherwise it took the value 0. Thereafter, we created a dummy which took the value 1, if the reporter and exporter both were members of the AMU, otherwise 0. Using these dummies enabled us to observe if the AMU members were cushioned during the Arab Spring.

Furthermore, to examine if the membership in AMU had any cushion effect during the Arab Spring, the fixed effects model was applied. The model includes all variables that are constant, such as distance, language, cultural differences etc. This is included into the same variable in the model. This enables us to observe the specific variation of the Arab Spring.

Deriving equation (1.2) lead us to our specific model:

$$ln(M_{ij}) = \alpha_{ij} + AMUASP_{ijt} + ln(mass_{ijt}) + \lambda_t \quad (1.4)$$

Some estimation issues may occur if the zero trade flows are not dropped. On the contrary, there might be information that are hidden in the zero trade flows that are dropped. However, to reduce these risks, one can also use the Poisson regression model. Natural logarithms will therefore be used as a specification of our regression model. A requirement when using this alternative model is to use a robust testing (WTO p.113, 2012).

First, M_{ij} is presenting the total imports, the trade flows. α_{ij} can be interpreted as the variables that are constant over time, or in this case does not vary significantly over time. This is including some trade costs, such as transportation costs, cultural or language differences etc. AMUASP is our intra-regional variable; it is a dummy variable for the Arab Spring, as well as members of the AMU. If the dummy takes that value 1, it implies that the trading partners are both affected by the Arab Spring in 2011-2012 and members of the AMU. In addition, using $mass_{ijt}$ we can incorporate the size of the economies as a variable, which is significant to the model. The variable consists of a multiplication of the GDP_i and GDP_j, which is the size of the trading economies. The last variable, λ, is used to capture all the variables' time effects. An example of this could be a change in Europe's import-demand, from the MENA-region, caused by a new economic situation.

5. Data

The main data source in this paper originates from the UN Comtrade database. The first information taken was total imports for all trading countries, using one as reporter (importer) and partner (exporter). Furthermore, GDP from both countries were multiplied to receive the mass of the economies. The GDP data originate from the WTO database.

The test consists of two groups; one is the focus group which includes all members of the AMU. The second group is a control group, which consists of other countries in the MENA region who are not part of the AMU. This approach is used to examine any differences between the two groups. This can be interpreted in table (1).

Table (1)

Arab Spring	**Pre**	**Post**
AMU	**0**	**1**
Control group	**0**	**0**

Table (1) is an illustration, simplifying the understanding of our identification strategy in this paper. The value 1 represents a difference after the Arab Spring, for AMU members. The difference is analysed to examine if a cushion effect for the AMU members exist, or if the effects of the union are insignificant. The members included in the focus group are Mauritania, Morocco, Algeria, Tunisia, and Libya. In this case Mauritania has been admitted although it is not an official part of the Arab Spring. However, this is due to the county's involvement in the AMU and the political instability closely connected to the Arab Spring (Dörrie, 2012).

The control group consists of other countries that also were affected by the Arab Spring, but who are not members of the AMU. These countries are Egypt, Lebanon, Syria, Jordan, Iraq, Saudi Arabia, Oman, Yemen, Bahrain and Kuwait. However, Iraq and Syria were dropped from

the research due to plenty missing values caused by severe civil wars etc. To capture various effects of the model, dummy variables were conducted. AMUASP is a dummy variable used to capture the intra-trade amongst AMU members during the Arab Spring. In addition, to estimate if the cushion effect differed between small and large trading economies, another dummy was created. To be able to distinguish the two dummies, the size of the countries' economies was divided above and below the mean of the. Hence, the variable Large_AMUASP were conducted. This is illustrated in Table (2).

Table (2) Mean of the variable "mass".

Variable	Mean	Standard error	95% confidence interval
mass	**8.07412**	**0.0417419**	**7 992246 - 8.155994**

A country depending on oil exports could hypothetically be affected by the cushion effect in a unique way. Hence, an oil variable was conducted. Using the AMUASP as conducted in section 4.3 and adding an oil variable lead to the dummy AMUASPoil. This dummy took the value 1 if both countries were members of the AMU, oil dependent and affected by the Arab Spring during 2011-2012. The countries included in the oil dummy were decided according to WEF categorization: Kuwait, Libya, Saudi Arabia, Iraq, Oman, Bahrain and Algeria (Hutt, 2016).

Furthermore, the data required specifications to examine the cushion effects within the AMU. The first regression we used was a linear regression model with the condition of the fixed effects model. Along with the condition the data was robustly specified, which reduces any measurement errors due to heteroscedasticity. The second regression used a Poisson distribution. The specification is a log-linear regression model. It enhances the specification due to inclusion of information from the zero trade flows. In most of the regressions, the

Poisson regression model was significant when the OLS model with fixed effects was not. In addition, the significant null hypothesis concludes that at least one of the variables should have an impact in the model.

To increase the accuracy, we determined to drop the countries with many missing values. When testing the data, it became biased due to many missing values, which took the value zero. These were mainly Syria and Iraq, which had plenty of missing values due to wars.

6. Results

6.1 Initial regressions

The two initial regressions used in the results were one OLS regression and one Poisson regression. How the regressions differ and reasons for choosing them have been explained in section 5 of this paper.

Our results from the regressions focused on two variables, the variable measuring the logarithm of the economic mass and the variable determining the cushion effect of the AMU. The results are illustrated in table (3).

Table (3) Regressions estimating the cushion effect

Variables	(1) OLS regression	(2) Poisson regression
ln(mass)	0.43 (0.153)	0.67*** (-4.211e+10)
The cushion effect (AMUASP)	-0.99 (0.784)	-0.12 (0.394)

P-value in the parentheses. Yearly and bilateral fixed effects are used, and the standard errors are robust. p*<0.01, p**<0.05, p*<0.1**

The most interesting variable of the result is the cushion effect. The variable was insignificant in both regressions. No interpretation or conclusion regarding our question of issue could therefore be made from table (3).

Our second variable in table (3) was the logarithm of the economic mass. The (ln) mass variable was insignificant in regression (1). It was however significant in regression (2). The variable in regression (2) was highly significant (***) and had a coefficient value of 0.67. The

coefficient can be interpreted as a one percent increase in mass will increase the trade with 0.67 percent. The value of a ln(mass) coefficient should be close to 1.0 in a well specified regression. Regressions including bilateral trade might have a slightly lower figure, similarly to the coefficient in regression (2). This indicates that regression (2) is rather well specified.

6.2 Large versus small countries

The specifications were rearranged since the cushion effect was insignificant in both regressions. A new indirect variable of the cushion effect was added to the two initial regressions, creating regression (3) and (4). The new indirect variable was called Large_AMUASP. It measures how large AMU countries have been affected by the cushion effect. The results from the new regressions are illustrated in table (4).

Table (4) Regressions estimating the cushion effect for large countries

Variables	**(3) OLS regression including Large_AMUASP**	**(4) Poisson regression including Large_AMUASP**
Mass (ln(mass))	**0.43 (0.146)**	**0.67*** (-4.186e+10)**
The cushion effect (AMUASP)	**-0.62 (0.232)**	**-1.37* (0.089)**

The interaction between large countries and the cushion effect (Large_AMUASP)	**1.21* (0.057)**	**1.41* (0.08)**

P-value in the parentheses. Yearly and bilateral fixed effects are used, and the standard errors are robust. p*<0.01, p**<0.05, p*<0.1**

Our primary cushion effect variable was not significant in regression (3). It was however significant (*) in regression (4), and its coefficient obtained a value of -1.37. -1.37 corresponds to a decrease of -75 percent[1]. It can be interpreted as the decrease of imports between small AMU countries during the Arab Spring. The interpretation only holds for small countries since the indirect variable representing large countries has been added.

The variable measuring the interaction between large countries and the cushion effect was significant (*) in both regression (3) and (4). The coefficient obtained a value of 1.41 in regression (4), which represents an increase of 310 percent. The figure must be combined with the percentage decrease of the normal cushion effect variable. This, since the variable measuring the cushion effect for large countries is an indirect variable of the normal cushion effect. Combining the values of the two variables resulted in an increase of 235 percent. The new percentage can be interpreted as the increase of imports between large AMU countries during the Arab Spring. No interpretation can be made from regression (3). This, since the normal cushion effect variable was insignificant.

The result from regression (4) implies a rather high cushion effect since it suggests that AMU members trade 235 percentages more compared to other countries in the region. However, would we like to underline some possible caveats when it comes to the results since there is a risk of a biased estimation if we fail to control for important variables. It could have occurred due to measurement errors in the x-variables. In addition, it might have been caused due to a misspecification of variables, which in turn could explain the trade increase more

[1] [1] The following equation is used to interpret the coefficient of the dummy variable: 100 x [exp(C)-1] = 100 x Growth.

accurately. The regressions might have compensated for missing variables by overestimating the cushion effect.

However, these large numbers do not only represent one factor that causes an increase in the intra-trade within the AMU during the Arab Spring. It involves aspects such as trade openness, integration, removal of barriers and political adjustments that are enforced due to the uncertainty. Thus, the large cushion effect can be explained by many included factors within the AMUASP variable. Hence, the percentages are not as unrealistic as it might seem at first sight. On the other hand, are the smaller countries represented by large deficits, which could be caused by the larger economies possibility to adapt. In addition, the intra-trade between the AMU countries only represents 3 percent of the total trade. Therefore, would a 235-percentage increase of the intra-trade between large countries not be impossible.

The result indicates that the AMU has made large member states more resilient in times of unrest, compared to other countries in the control group. Small countries within the AMU seem to be sensitive to political unrest and less protected. This indication is beneficial for our conclusion.

The mass variable was insignificant in regression (3). It was however highly significant (***) in regression (4). The coefficient obtained a value of 0.67 in regression (4), similarly as in sector 7.1.

Regression (4) had no R-squared value since it is not linear. Regression (3) had a R^2 value of 0.33 which signals that the regression is rather inaccurate.

6.3 Oil exporting countries

The research was extended by including the indirect variable AMUASPoil to our initial regressions from sector 7.1. The purpose of this was to investigate if oil exporting countries of the AMU had been affected by the cushion effect in any unique way compared to other countries. However, the cushion effect and the indirect variable were insignificant in the regressions. No conclusion from the regressions could therefore be made. (Ln)mass had the same coefficient values and significance levels as is in the previous regressions. The results are illustrated in table (5).

Table (5) Regressions estimating cushion effects for oil exporting countries

Variables	(5) OLS regression including AMUASPoil	(6) Poisson regression including AMUASPoil
ln(mass)	0.43 (0.142)	0.67*** (-4.202e+10)
The cushion effect (AMUASP)	-0.12 (0.689)	0.15 (0.155)
The interaction between oil exporting countries and the cushion effect (AMUASPoil)	0.07 (0.943)	-0.50 (0.124)

P-value in the parentheses. Yearly and bilateral fixed effects are used, and the standard errors are robust.
p*<0.01, p**<0.05, p*<0.1**

7. Concluding remarks

Trade and political unrest are two highly topical topics. This, due to the numerous conflicts constantly arising in the world and the increased numbers of new PTAs being notified at the WTO. The emerging conflicts and the following political unrest might however threaten trade. It is therefore crucial for PTAs to address the dilemma, and hopefully offer a more stable trade environment. The purpose of this essay was to examine the relationship between trade agreements and conflicts by investigating PTAs' effectiveness during times of political unrest, functioning as a cushion effect. The assessment was done with the example of the AMU and the political disturbances connected to the Arab Spring.

We compared bilateral trade from 13 countries during the period of 2005-2015 using one focus group and one control group. The focus group consisted of all AMU members: Morocco, Mauritania, Algeria, Tunisia and Libya. The countries included in the control group were Egypt, Jordan, Saudi Arabia, Yemen, Oman, Bahrain and Lebanon. A dummy variable for the period 2011-2012 was added for the AMU members to observe the cushion effect of the union during the Arab Spring. In addition, the gravity model was applied to enable an evaluation.

We were not certain if we would find a strong cushion effect connected to the AMU. The doubt occurred due to AMU's history and its varying efficiency. However, we mentioned that there might be a slight difference in trade between large and small members.

Our result settled that the AMU has functioned as a cushion effect for large member states during the Arab Spring. The percentages suggest that large AMU members' trade was more resilient in times of political unrest, compared to other countries in the region. This indicates the increased importance of PTAs and that there clearly is a cost of being excluded. The cushion effect did not work as a nursing effect on smaller AMU countries. This might partly be due to the structure of the AMU, but also because of larger countries probably having better prerequisites when it comes to trade. The results indicate varying cushion effects due to sizes of the economies. This stresses that PTAs need to be structured in a specific way to benefit as many members as possible. It is important to consider when forming new PTAs in the future.

To conclude, our research has contributed to the science of PTAs by finding additional evidence connected to political unrest and PTAs. A new field of research can be conducted by incorporating additional factors when examining AMU's cushion effect. For example, how investments in infrastructure affects the cushion effect, or if previous common colonizers have had an impact. Other interesting aspects to evaluate could be if the diversification within a country's exporting industry has had any influence on the cushion effect, or if the cushion effect differs due to the amount of political unrest.

8. References

Abdullah, Norehan - Abdullah, Hussin - Abuhriba, Hadi M. O. (2015): "The Determinants of Trade and Trade Direction of Arab Maghreb Union", *Journal of Economic Cooperation and Development*, vol.36 (3), pp.123-148.

Achy, Lahcen (2012): "The Arab Spring Revives Maghreb Integration", *Carnegie Middle East Center*, *http://carnegie-mec.org/publications/?lang=en&fa=47385*

Amnesty International (2012): "Years of Rebellion - The state of human rights in the Middle East and North Africa", Amnesty International Ltd: London

Arab Maghreb Union, UMA (2018): "History", http://www.maghrebarabe.org/en/uma.cfm

Baldwin, Richard & Wyplosz, Charles (2015): *The Economics of European Integration*, 5th Ed, MacGraw-Hill: Maidenhead.

Bayer, Resat & Rupert, C. Matthew (2004): "Effects of Civil Wars on International trade", *Journal of Peace Research*, vol.41 (6), pp.699-713

Blomberg, S. Brock & Hess, Gregory D. (2004): "How much does violence tax trade?", *Center of Economic Studies*, CESifo Working Paper No. 1222.

Cuervo-Carzzura, Alvaro - Kwok, C. Y. Chuck - Marano, Valentina (2013): "The Impact of Conflict Types and Location on Trade", *The International Trade Journal*, vol.27 (3), pp.197224.

Dörrie, Peter (2012): "The Arab Spring you haven't heard about - in Mauritania", *Waging Non Violence*, https://wagingnonviolence.org/feature/the-arab-spring-you-havent-heard-about-in-mauritania/

Fanuli, Frederica (2014): "The international effects of the Western Sahara conflict", *Mediterranean affairs*, http://mediterraneanaffairs.com/the-international-effects-of-the-western-sahara-conflict/

Foster, Neil (2011): "Preferential Trade Agreements and the Margins of Imports", *Open Economies Review*, vol.23 pp.869-889.

Hamza, Wadia Ait (2017): "Five ways to make Maghreb work", *World Economic Forum,* https://www.weforum.org/agenda/2017/06/five-ways-to-make-maghreb-work/

Hoekman, Bernard and Michel M. Kostecki (2009). "The Political Economy of the World Trading System - The WTO and Beyond", 3rd edition. Oxford University Press: Oxford

Hutt, Rosamond (2016): "Which economies are most reliant on oil?", *World Economic Forum,* https://www.weforum.org/agenda/2016/05/which-economies-are-most-reliant-on-oil/

Khan, Mohsin & Mezran, Karim (2016): "Aftermath of the Arab Spring in North Africa", *Atlantic Council,* *http://www.atlanticcouncil.org/images/publications/Aftermath_of_the_Arab_Spring_in_North_Africa_web_1031.pdf*

Krugman, R. Paul - Obstfeld, Maurice - Melitz, J. Marc (2012), *International Economics - Theory & Policy*, 9th ed. Pearson Education Limited: Boston.

Limão, Nuno & Maggi, Giovanni (2013): "Uncertainty and Trade Agreements", *National Bureau of Economic Research*, NBER Working Paper No. 18703.

Pressenza (2012): "Will the Arab Spring Make the Arab Maghreb Union Bloom?", https://www.pressenza.com/2012/01/will-the-arab-spring-make-the-arab-maghrebunionbloomx/

Rosenberg, Anna (2016): "Sub-Saharan Africa's Most and Least Resilient Economies", *Harvard Business Review,* https://hbr.org/2016/02/sub-saharan-africas-most-and-least-resilient-economies

Saucier, Philippe & Rana, Arslan T. (2017): "Do preferential trade agreements contribute to the development of trade? - Taking into account the institutional heterogeneity", *International Economics,* vol.149 pp.41-56.

Sequeira, Sandra (2016): "Corruption, Trade Costs, and Gains from Tariff Liberalization: Evidence from Southern Africa", *The American Economic Review,* vol.106 (10), pp.30293063

United Nations Economic Commission for Africa (2016): "AMU - Arab Maghreb Union", https://www.uneca.org/oria/pages/amu-arab-maghreb-union

Wook, Jung Jae (2017): "The Impact of Political Instability on Trade Agreements in Africa", *Kiep Opinions*, http://www.kiep.go.kr/eng/sub/view.do?bbsId=kiepOpi&nttId=192569

World Bank (2010): "Economic Integration in the Maghreb", http://siteresources.worldbank.org/INTMENA/Resources/Maghrebpub.pdf World Trade Organisation (2018a): "General Agreement on Tariffs and Trade 1994", https://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_01_e.htm

World Trade Organisation (2018b): "Facts and figures", https://www.wto.org/english/tratop_e/region_e/regfac_e.htm

World Trade Organisation (2015): "How are trade costs evolving and why?", *Aid for Trade at a Glance 2015*, https://www.wto.org/english/res_e/booksp_e/aid4trade15_chap2_e.pdf

World Trade Organisation (2012): "A Practical Guide to Trade Policy Analysis", https://www.wto.org/english/res_e/publications_e/wto_unctad12_e.pdf

Zartman, William (2015): *Arab Spring: Negotiating in the shadow of the intifadat.* University of Georgia Press: Athens.