

**THE ARAB SPRING: THE ECONOMIC CONDITIONS THAT BRED A
POLITICAL UPRISING**

An Undergraduate Research Scholars Thesis

by

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Submitted to Honors and Undergraduate Research
Texas A&M University
in partial fulfillment of the requirements for the designation as an

UNDERGRADUATE RESEARCH SCHOLAR

Approved by
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May 2015

Major: International Studies
Economics

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ABSTRACT

The Arab Spring: The Economic Conditions that Bred a Political Uprising. (May 2015)

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The Arab Spring has been misidentified as purely a struggle for democracy and political freedoms; however, economic factors might carry more weight in a country's population deciding to rise up against its government. In identifying the causes of the political and social turmoil in these countries affected by the Arab Spring in the Middle East and North Africa, it is imperative to understand the real underlying issues in order to solve these problems in the long term. By analyzing the economics of the Arab Spring, it becomes clear that certain economic indicators do play a decisive role in shaping the potential for a country's populace to revolt. Economic factors point toward why some countries have experienced uprisings during the Arab Spring and why others have not, when their political and social structures imply that they should. The three components of the Theory of Economic Happiness- unemployment rate, gross national income per capita, and inflation rate - are all contributors to a nation's level of economic contentment. When controlled for political corruption, university education, prevalence of a private sector, and varying levels of democracy, regression analysis shows that the effects of these elements of economic unhappiness along with corruption within Middle East and North Africa countries are the most significant factors in increasing the propensity to experience uprisings within their borders.

DEDICATION

For my parents, who have always supported and believed in me

For Gale and Cynthia Goodwin, who taught me that education is wonderful

ACKNOWLEDGEMENTS

I would like to thank my Undergraduate Research Scholar advisor, Dr. Ralph Schoolcraft, for all of his help, guidance and patience.

SECTION I

INTRODUCTION

The Arab Spring began sweeping across the Middle East and North Africa (MENA) in late December 2010 as a push for democracy, human rights and economic advancement. Many suggestions exist as to how this movement originated. The subjects of contention have tended to be listed rather indifferently, as if they were all of a piece. However, it is essential to distinguish what *really* drove discontent to finally manifest itself. *Yes*, the populations in question wanted greater respect for human rights. But was that desire enough to push them to revolt? *Yes*, there was a sense, particularly among younger generations, that nothing would change without the introduction of democracy. But were they really willing to *die* for that? Or was the decisive issue the complete dead-end in economic prospects that drove them to rage and action? The majority of the prevailing theories in the media and academia are those pertaining to instability, corruption and lack of democracy. While these are all contributing factors and have played a substantial role in initiating the Arab Spring, the economic aspect tends to be overlooked.

Socio-economic issues facing the Middle East and North Africa

The Middle East and North Africa is a region of extremes. The minority oil-rich and wealthy countries of the Gulf region stand in stark contrast to the resource- deprived majority. Leading up to early 2011, the disparities and the poor economic conditions across MENA played a substantial role in prompting the Arab people to take to the streets. The motivation was unhappiness with their economic conditions and lack of opportunity. Even the beginning act of the Arab Spring was based on socio-economic factors. A young vegetable seller, Muhammad

Bouazizi, in the remote village of Sidi Bouzid, Tunisia, set fire to himself in despair over his inability to progress toward achieving his goal of owning a truck due to unfavorable economic conditions. His actions, based on economic unhappiness, ignited the spread of the Arab Spring across the Middle East and North Africa (Garner 2013).

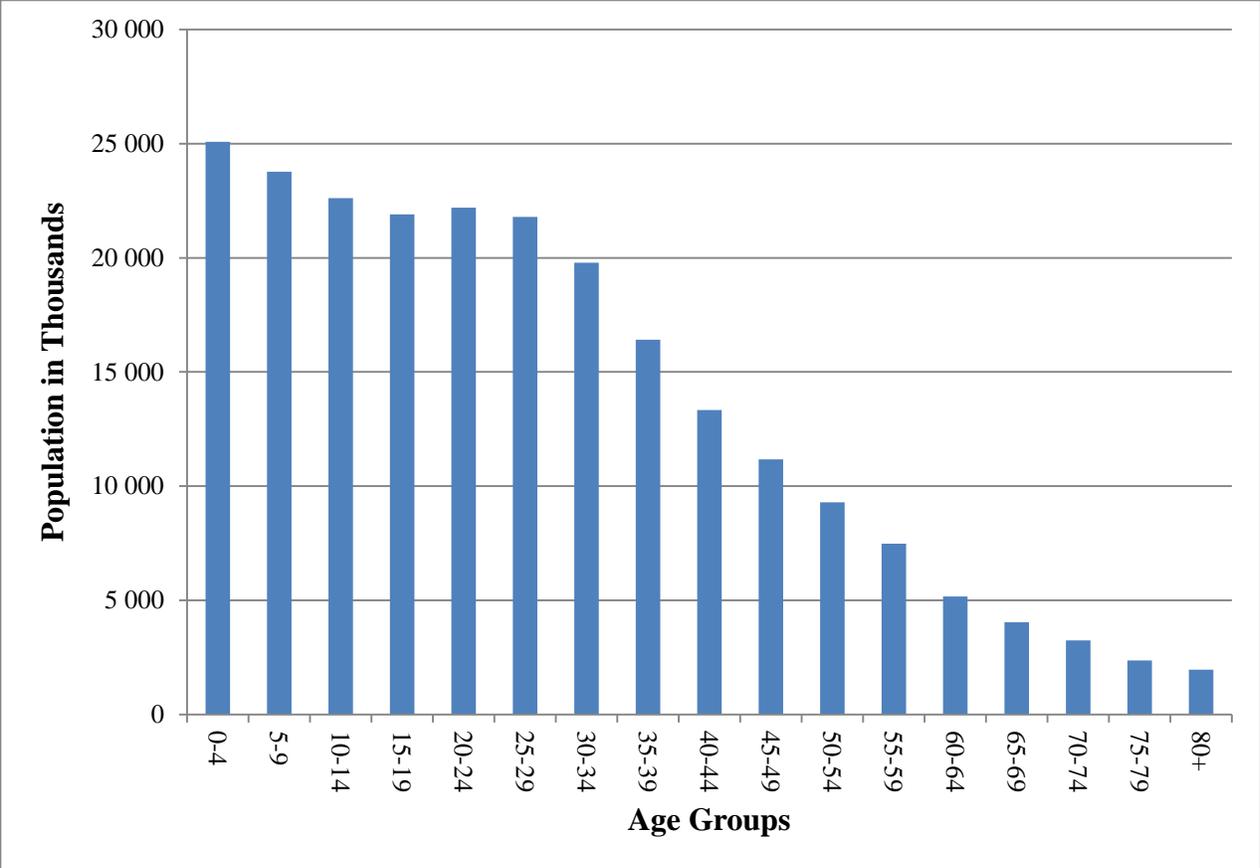


Figure 1: Middle East and North Africa Total Population by Age Group.¹

The fact that Muhammad Bouazizi was a young man of just 26 is a central component of the Arab Spring. A population bulge of the age groups currently enrolled and recently graduated

¹ The data included in Figure 1 is from the *World Population Prospects: The 2012 Revision* published by the United Nations, Department of Economic and Social Affairs. Countries included in the Middle East and North Africa region, which documents laborers from Western Asia includes Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Palestine, Syria, Turkey, United Arab Emirates and Yemen.

from institutes of higher education is a serious issue plaguing many MENA countries. As shown above in Figure 1, a substantial proportion of the region's population falls within the ages of 0 to 29. This youth bulge in comparison to the older generations is contributing to the region's high unemployment rate. Between 34 and 42 percent of Arab countries' populations consists of young adults beginning to enter the labor force. But these countries already have a substantial unemployment rate (as discussed below), thus contributing to dismal job prospects. Additionally, a greater proportion of young women are now entering the labor market, causing these numbers to increase (Assad and Roudi-Fahmi 2007). When looking at the demographic makeup of those participating in Arab Spring protests, it comes as no surprise that it is mainly those in the youth bulge age group that took to the streets.

Not only is the population of the region growing at a rate three times faster than the rest of the world, it is also becoming comparatively more educated than in past years. A greater percentage of the Arab population is earning college degrees (Malik and Awadallah 2013). A population with a significant portion having received a degree in higher education is more likely to express discontent when economic or political conditions weaken. The lack of strong labor market conditions in the Arab world has exaggerated this propensity for college graduates to demonstrate and rebel against their governments (Campante and x 2012). These two factors of greater education and the influx of youth entering the labor force combine to create unemployment and unrest due to failed aspirations among increasing numbers of educated youth.

In addition to these socio-economic factors, the lack of a developed and functioning private sector has contributed to the inept economies of the Middle East. What little private sector does

exist, or what *is* functioning within the private sector, remains in the hands of a very few and often does little to contribute to the national economy's overall strength (Malik and Awadallah 2013). One of the reasons Tunisia's Muhammad Bouazizi could not make a reasonable living for himself and his family was on account of the various governmental regulations and policies on his vegetable stand. Even after he had paid the fees for operating his stand with a license, the city police still confiscated his cart. Muhammad was thus unable to provide for his family of eight (Abouzeid 2011). Arab countries must create an economy that does not stifle entrepreneurial spirit. Not only is a private sector essential for a robust economy, it is also necessary for a democracy to thrive. If the Arab Spring is to be successful, countries must work to create an industrialized private sector in their economies. Only such a private sector can accumulate enough capital for political institutions to exist that in turn bring about democratic processes (Springborg 2011). Identifying the specific economic factors that are the roots of the Arab Spring is essential to understanding the people's unhappiness with their economic conditions (Goldman 2013).

The economic misery in Tunisia where the Arab Spring was initially sparked in late 2010 is not an isolated occurrence in MENA. In 2003 for instance, manufactured export goods for the entire region equaled less than that of the Philippines (Noland and Pack 2007). Thus, all of MENA's combined exports in the manufacturing sector were less than one small Southeast Asian country that is not even considered a part of the elite economic powerhouse of the Asian Tigers. The economies of these revolution-prone nations have been poorly managed and developed by pseudo-democracies and dictatorships for decades resulting in their inability to provide a functioning economy for the people. Even four years after the Arab Spring, MENA has a slightly

positive but yet still bleak economic future going into the year 2015. In its economic outlook report, the World Bank outlined the dreary prospects for the region and the likelihood of economic growth well below its potential. The Arab world is afflicted with high air pollution in urban areas, traffic congestion from poor infrastructure, high employment rates and potentially crippling water scarcity that is damaging agricultural yields (*MENA Economic Monitor* 2014). Yet, the region has great economic capability with a young educated population willing to work hard to utilize their potential and with vast resources spread across the different countries. MENA is a perfect example of squandered economic opportunity resulting in detrimental consequences for the region's people.

Out of the large range of issues facing the region as a whole, factors in each state's economy that promote economic happiness, or unhappiness, could have played a predominant role in selective Arab Spring development. These factors could have resulted in specific economy-related grievances. Within the Middle East and North Africa, I will examine countries where economic and political discontent produced revolution but also those where substantial discontent *failed* to result in popular uprisings. The three components of the theory of economic unhappiness - high unemployment, low gross national income (GNI) per capita and high inflation - are all contributors to a nation's level of economic content or discontent. A regression analysis controlled for political corruption, university education, prevalence of a private sector, and varying levels of democracy, shows which factors are most pertinent in understanding the discontent in these countries. Elements of economic unhappiness, mainly inflation, along with corruption within Middle East and North Africa countries are the most significant factors in increasing the propensity for countries to experience uprisings within their borders. When

applying the Theory of Economic Happiness with these other socio-factors, relative economic discontent explains why some countries have revolted in rage and why others have not, even though their political and social conditions would otherwise indicate that they are also ripe to experience Arab Spring revolt. In the next section of this analysis, three different country case studies will be explored. Then, the methods and data to be used will be reviewed. The final section presents the regression analysis results of the various socio-economic factors.

SECTION II

COUNTRY CASE STUDIES

While the region as a whole shares common demographic and economic issues, individual countries also have particular internal struggles that are often severe enough to drive their populations to the streets in protest. While these grievances are country specific, they still share the common thread of a poor economic climate. To determine whether or not economic factors are a substantial driving force behind the Arab Spring, I will first provide a narrative of the complaints aimed at several of the government regimes of the MENA countries highlighting those where economic factors appear to have been decisive.

Egypt: Youth bulge boiling over

The 18 days in Tahrir Square that brought the demise of Egypt's then President Hosni Mubarak have become known as the "January 25 Revolution." The protesters that spent 18 days in the center of Cairo demanding change were not a spontaneous uprising. In fact, a revolutionary movement in Egypt had been attempted long before the January 25 Revolution but had not gained widespread support. As early as March 2008, movements were already beginning within Egypt. The first of these calling itself the "April 6 Youth Movement" began by creating a Facebook page to support a textile workers' strike against high food prices and low pay for long hours of work. A protest was set to take place on April 6, 2008 from which the group derived its name ("c: April 6 Youth Movement" 2011). Thus, even three years prior to the revolution that brought sweeping change to Egypt, youth movements were already concentrating on socio-economic factors as the center of their protests.

Egypt's military plays a unique and central role in both the economy and public sector. This role impacts Egypt's transparency and democratic institutions. In contrast to traditional militaries, Egypt's owns thirty-five major companies and factories that manufacture non-military products, including everything from household appliances to cars and even bottled water (Gilpin, et al. 2011). The budgets of these companies are also not subject to governmental review even though they are derived from the military's annual budget allocation (Rutherford 2013). Further, military profits are exempt from taxation. In June 2014, the Egyptian Ministry of Defense won several contracts totaling \$1 billion to carry out infrastructure projects based on its supposed ability to efficiently carry out construction plans. The United Arab Emirates has also recently paired with the Egyptian military to build extensive housing projects around Cairo. It is estimated that the military controls 5 to 40 percent of all economic activities in Egypt (Morsy 2014). This calls into question the effectiveness of Egypt's self-described democratic institutions. The Egyptian government's decision to allow the military to play such a substantial role in the economy comes at the expense of crowding out private industry and Egyptian entrepreneurship. Potential entrepreneurs are unable to establish businesses and create competition to drive down prices. This creates an Egyptian economy that is heavily responsive to the actions of the military establishment instead of private enterprises.

Despite the military's hold on the economy, in the mid 2000s Egypt's economic outlook seemed promising even if it did not benefit the majority of Egyptian people. The economy was growing at around 6 to 7 percent annually, but this growth left many behind economically. Young Egyptians that lacked specialized skills or connections within government or corporations were

left out. Income began to stagnate especially for public employees and civil servants (Rutherford 2013). What little existed that was considered a quality standard of living soon dissipated. About 44 percent of the population was classified as impoverished in January 2011 at the beginning of Egypt's revolution (Beinin 2012). Of the roughly 79 million living in Egypt at the time, 34.931 million were living below the poverty line. This gave youth revolutionary movements a large segment of the population to sway toward their causes.

To make matters worse, Egypt is the most populated Arab country and one of the main contributors to the youth bulge in the region as shown above in Figure 1. In 2006, approximately 40 percent of Egyptians fell between the ages of 10 and 29. About 25.6 percent of Egypt's youth population that holds a degree in higher education was unemployed in 2009 (*Egypt Human Development Report 2010*). This is a significantly large number, and it is also important to note that this large unemployment rate in the period leading up to the revolution in Tahrir culminated in civil unrest among the youth population. The fact that so many with a college education could find employment was especially crucial to the beginnings of the Egyptian Arab Spring. A rapid increase in educated youth is influential in pushing a country into civil unrest (Goldstone 2001). Henrik Urdal (2006) points out in his studies on youth bulges that they create a socio-political environment that is conducive to a country being prone to political violence. Of particular importance is Urdal's finding that the economic situation is particularly important at the moment a youth bulge begins entering the labor force. All of the dismal socio-economic factors discussed above coupled with Egypt's youth bulge culminated in the overthrow of Mubarak's quasi-democratic 30 year rule and the Arab Spring in Egypt.

Libya: Oil rich failure

Just weeks after Egypt's revolution, Libyans began protesting against flamboyant and eccentric Muammar Gaddafi's four decade long rule on February 15, 2011. The situation in Libya has especially been on the minds of many Americans since the 2012 attacks in Benghazi at the U.S. Temporary Mission Facility killing U.S. Ambassador Christopher Stevens and three other Americans. This episode reminds us that Libya's Arab Spring diverged from Egypt's comparatively peaceful battle against Mubarak and deteriorated into a civil war affecting people other than Libyans. Libya and its splintered population took a turn toward bloody conflict pitting those loyal to Gaddafi against those fighting for his overthrow. The "Day of Rage" two days after the start of protests marked the point at which Libya began crumbling into civil war.

However, Libyans did not simply follow the examples of their fellow Arab countries. They also had specific motives for rising up against their government. Even though Libya is the most oil rich country in Africa, Gaddafi's government poorly managed the revenue gained from oil sales and economic development of the country. Libya's economy was feebly handled under the 40-year rule of Gaddafi. In his now infamous *Green Book* in which Gaddafi addressed three main issues he saw in Libya and his plan to fix them, the third point concerns the economy. In his manifesto, Gaddafi introduced a custom version of socialism as his solution to his perception of economic injustice. Income was to be communal or shared throughout society. He saw the wage system as a pseudo system of labor enslavement. Additionally, ownership of private property was restricted. Libyans were not allowed to own private land nor more than one home. Thus, the government confiscated second or vacation houses and any other additional property. While imposing these economic policies on Libyans, Gaddafi's family was exempt from complying

with his vision of utopia for Libya. Gaddafi's children and relatives owned numerous homes and private property while having a lavish lifestyle (Dalbon and Lobban 2014).

Libya's economy now suffers from several inefficiencies as a result of Gaddafi's *Green Book* policies. An inflated public sector, lack of entrepreneurial leadership, weak education and healthcare systems, and deficient infrastructure investment all plague Libya's economy and the people (Vandewalle 2012). Through these policies, he created an artificial scarcity of basic consumer goods and medical care (Anderson 2011). Gaddafi's policies of no private ownership led to virtually the entirety of Libya's labor force being employed in the public sector.

Nationalized companies employ more than 80 percent of Libyans while only 4 percent work in the private sector. High oil revenues have created exaggerated income expectations for recent university graduates and others seeking employment. These high pay demands and a lack of economic diversification, excess labor cannot be employed by the public sector. The unemployment rate in Libya hovered around 20 percent in 2010 and 2011 leading up to the Arab Spring. Those are the official rates, but the actual figure is most likely closer to 30 percent (Mottaghi 2014). In its January 2014 *MENA Quarterly Economic Brief*, the World Bank states youth employment poses the biggest concern for Libya. The report estimates that youth unemployment is approximately 50 percent even though the majority has earned university degrees.

With access to modern social media technologies, Libyans saw their bordering North African countries rebelling, starting with Tunisia and then moving to Egypt. With these examples, Libyans rose up against more than forty years of repression under Gaddafi's warped vision of a

utopia and flawed economic policies. With \$46 billion worth of oil exports annually and a population of only 6 million people, Libya exports more oil per capita than fellow regional petroleum powerhouse Saudi Arabia (“Libya and Muammar Qaddafi” 2009). If Libya has such vast oil resources and revenue, how can the people still find reason to rebel? Libya’s Arab Spring is a perfect example of how an oil rich country can still leave its population economically unhappy if the oil revenue is not managed properly or if the government does not create a thriving economic climate for industry. Gaddafi’s government and economic policy mixed with political corruption and decadence provided the motive for the Arab Spring in Libya while the actions of Tunisia’s Muhammad Bouazizi gave them the push.

Jordan: The eye of the storm

Jordan stands in contrast to Egypt and Libya. Despite protests and public unrest within the Hashemite Kingdom, King Abdullah has managed to keep his country intact and his place in power. Jordan has been the calm eye of the storm while being surrounded by increasingly volatile neighboring countries. By many accounts, Jordan should not be as unwavering as it appears to be. Many issues that plague this small country have been slowly boiling up to the surface. These include a poor economic outlook, lack of democratic institutions, and street protests that have been organized by various rebellious factions. Protests in Jordan commenced in November 2010, a few weeks prior to the Tunisian Jasmine Revolution starting in late December 2010. These riots in Jordan were mainly in reaction to pro-government candidates again winning a sweeping victory in the parliamentary elections (“Jordan Profile” 2014).

While these first protests in Jordan mainly involved outrage over a lack of democratic processes, they evolved as their central theme shifted to the bleak economic prospects in Jordan. According to a 2010 survey conducted by the United Nations Development Program, the official unemployment rate appears promising in comparison to the rest of the Arab world at 12.9 percent in 2009. However like Egypt and Libya, youth unemployment between the ages of 15 to 24 stands at 27 percent. Many of those who have completed a college degree are still unable to find jobs in their areas of study (Abuqudairi Sept. 2014). Making this number even more disappointing, the 27 percent youth unemployment grew from 12.1 percent within the last twenty years. Jordan's youth comprise 30 percent of the population (Constant and Kraetsch 2010). While this is a large number, it is not as significant as Egypt's on account of Jordan's total population being a little over 7 million while Egypt's is over 10 times as great. Unrest from the lack of job prospects is not confined to Jordan's largest city and capital, Amman. Protests have popped up across the desert kingdom, especially in southern Jordan.

In addition to the bleak unemployment numbers, Jordan is relatively poor in natural resources compared to its oil-rich Gulf neighbors. This adds to the country's depressing economic climate. Jordan must import 97% of its oil and gas (Al-Khalidi 2014). The only major commodities that Jordan can mine or grow within its border are potash and olives ("Jordan"). Even water is a major issue with the Jordan River drying up and being diverted for agriculture and drinking water, which in turn is causing the Dead Sea to shrink. King Abdullah, like his fathers before him, reigns over a kingdom of sand and rock.

Not only are individual Jordanians hurt by dreadful economic conditions; the government also has economic issues. At the end of 2013, Jordan's debt reached \$27 billion or roughly 80% of the entire country's GNI ("Jordan's Public Debt Balloons" 2014). The recent instability in Iraq caused by the rise of the Islamic State is another cause for worry among Jordanian officials. The primary concern is that the conflict could in the future spill over into their border, but the detrimental affects on the economy have already been felt. Exports to Iraq have all but stopped. Iraq has been one of Jordan's main importers buying 20 percent of Jordan's exports. In 2013, this equaled \$1.25 billion in exports to Iraq (Abuqudairi Aug. 2014). Jordan cannot afford to lose such a valuable trading partner with its ballooning debt and faltering economy.

For Jordanians, King Abdullah in November of 2012 eliminated fuel subsidies to try and alleviate some of the nation's debt. This decision was made in order for Jordan to secure a \$2.0 billion loan from the International Monetary Fund. Jordan could only receive the loan if it tightened its budget and started selling fuel at cost. The objective for the loan was to correct Jordan's balance of payments issue ("Jordan Gets \$2.0 Billion IMF Loan" 2012). While it has helped mend Jordan's fiscal imbalances, it has not helped everyday Jordanians who have to pay the higher price at the pump. In 2008, it was estimated that 25% of Jordanians are considered to be living below the poverty line ("Thinking Differently About the Poor" 2012). The increased fuel prices are not helping the economic situation for the already impoverished and could tip others below the poverty line as well.

Despite this, King Abdullah has made preemptive responses to unrest. As an example, he liberalized the judiciary giving his people an important improvement in their perception of the

government. The Judiciary Independence Law of 2013 was passed in Jordan to transfer the authority of judicial appointment from the Cabinet to the Higher Judicial Council (Neimat 2013). While this does not seem like a drastic change, it is a step toward greater transparency in the Jordanian government. In comparison to his Arab neighbors, King Abdullah has relatively lessened corruption to abate civil unrest.

Jordan has many issues it must address such as a bleak economic future and a plethora of pseudo democratic institutions. When Jordan is compared to Libya and Egypt, it should have likewise fallen victim to Arab Spring unrest on account of the desolate economic factors that all three have in common. Yet, King Abdullah and Jordanians have managed to mask the negatives and taken advantage of the positives in order to maintain an imperfect but stable country. Jordan is an eye of calm amongst the storm that is raging around it. Why is this? Since all three countries, Egypt, Libya and Jordan, do have common economic characteristics, why is it that Jordan with King Abdullah at the helm has maintained status quo and for the most part averted the Arab Spring? Is it that he is a better leader than Mubarak or Gaddafi? Does Jordan have less corruption and greater democracy relative to these other two Arab countries? Or is Jordan's economic climate not as marginally detrimental to society in comparison to Egypt and Libya?

SECTION III

METHODS

In January of 2011, economic and regional unhappiness reached a tipping point causing the Arab people to revolt against their governments and demand higher standards of living. The people's discontent with their economic conditions is demonstrated by the changes they have demanded in the streets. Among other demands, Jordanian protestors called for greater employment opportunities while Egyptians insisted on decreased food prices. Both of these demands share the same common theme of requiring further action from the regional governments to create a more favorable economic climate. In this analysis, the variables that comprise the Theory of Economic Happiness are applied to MENA in order to determine the degree of influence such factors have had on the Arab Spring and rate of protests across the region. Economic happiness theory, its intuition and the variables that comprise it, as outlined below, will be assessed for its ability to explain and even predict Arab Spring, using statistical data collected from various MENA countries, including those that have revolted and those that have not.

Theory of Economic Happiness intuition

The Theory of Economic Happiness is based upon three main conditions within a country: income, inflation and unemployment. First, to increase economic happiness, income must rise. If income rises, or gross national income per capita as used in this study, people are better able to provide the necessities for themselves and their families. A greater quality of life and social advancement follows increases of income. Higher income also correlates to higher self worth and greater ability to purchase goods for personal happiness, compared to only buying necessary

goods to survive such as food and housing. Thus overall, there is a positive correlation between income per capita and economic happiness and should decrease the civil unrest and protests (Clark, et al. 2008).

Secondly, inflation and economic happiness have a negative relationship. Higher inflation equates to a decrease in economic happiness. However, it is mainly *unexpected* inflation that has an effect on individuals. It lowers the standards of living and international status, causes income distribution disparities and decreases the purchasing power of a currency. Especially with many of the wages and salaries in the MENA remaining stagnant, increased inflation reduces the numbers of goods and services individuals can purchase for daily needs or for pleasure. All of these thus lower economic happiness for a country or region (Frey and Stutzer 2002). If the inflation is expected, then people can plan accordingly by adjusting spending habits. However if it is sudden and unexpected, sharp spikes in inflation do not give enough time to prepare for the effects that will accompany the increase in prices. Since inflation and economic happiness are negatively correlated, an unexpected increase in inflation should increase protests.

Lastly, similarly to inflation, when unemployment rates are high, economic happiness decreases (Tella, et al. 2003). In several ways, unemployment decreases a persons overall satisfaction with life. An individual sustains both social and psychological damage. By being unemployed, a person feels like he or she does not possess adequate abilities or skills to succeed. Also, it causes financial stress on a person or family. By not having an income, the unemployed are unable to provide for their families, to advance in social standing or to buy the commodities he or she

needs or wants. Overall, unemployment marks a huge decline in happiness personally and economically (Frey and Stutzer 2002).

While these may be the three main variables that are credited as determining a person or country's relative economic happiness, other factors must be controlled for and taken into consideration. For example, as the percentage of the population that has completed a university education within a country increases so could increase the tendency for protests dependent on other factors. If high rates of education are coupled with high unemployment rates then it could also increase the frequency of uprising. A highly educated population expects to be rewarded for their years of work earning a degree, and if there are no jobs in their home economy to be had, it could cause civil unrest.

Additionally three other variables are incorporated to control for the socio-political environment.

These include:

1. Governmental corruption,
2. Classification of the government as a democracy or as an autocracy, and
3. The percentage of a county's economy attributed to the private sector

With Tunisia's Muhammad Bouazizi as an example, government corruption can result in the inability of everyday people to make a better life for their family. Red tape regulations, economic corruption and nepotism hinder such life advancements. As another example from Tunisia, the family of former President Ben Ali's wife is particularly well connected in the Tunisian economy. Known as "The Family," the Trabelsi's are estimated to have controlled over a third of the Tunisian economy totally \$44 billion according to Transparency International due to Ben

Ali’s abuse of power while in office (Gauthier-Villars 2011). Examples such as these in the Arab world are not only political corruption with the head of the government but also economic corruption. These three variables not only have important economic implications, but they are also included in this study to take into consideration the political aspects of the Arab Spring to better assess the most influential causes of protests across the region, whether they are economic, political or both in nature. The theory of this analysis and its variables can be summarized in Figure 2.

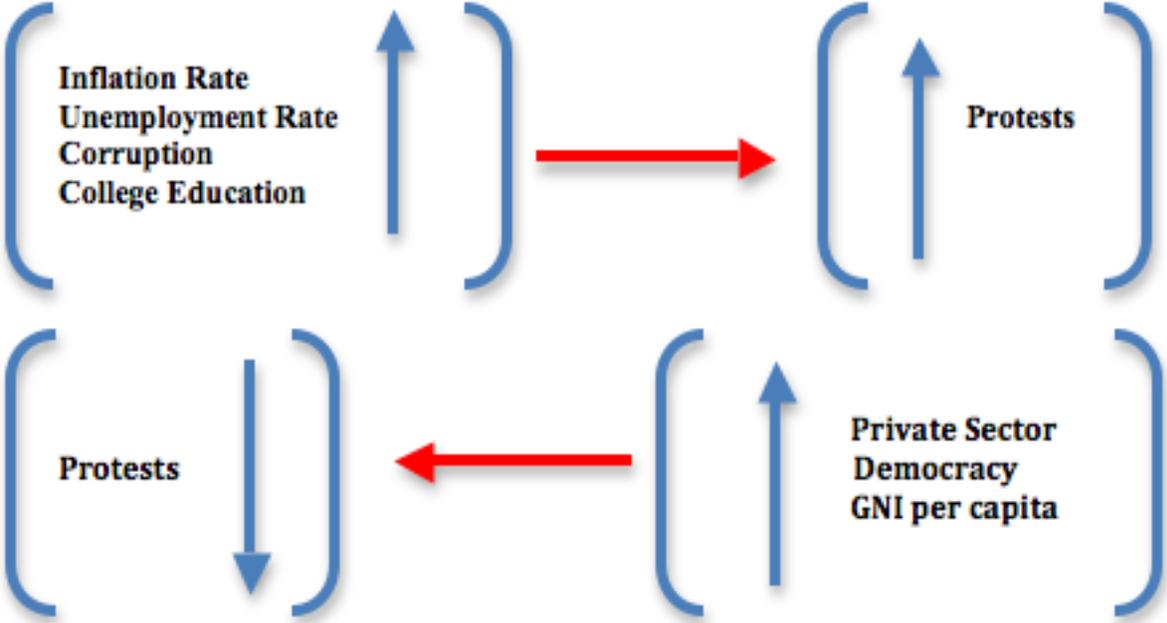


Figure 2: Summary of Theoretical Relationship Between Variables and Number of Protests

Data statistics and measurements

By analyzing the relationship between these three factors, the Arab Spring as a case study can be examined using the Theory of Economic Happiness in order to deduce its effects on the outcome of regional protests. To test the economic intuition of income, inflation and unemployment rate and their effects on revolts in the MENA region, data collected and measured by the World Bank

will be used. Gross national income per capita (GNIPc) is measured as the sum of the value added by all producers plus any product taxes not included in the valuation of the output plus net primary income from abroad based on purchasing power parity (PPP). Inflation is calculated by the consumer price index and reflects the annual percentage change in the cost of a set basket of consumer goods and services. The unemployment rate refers to the share of a country's labor force that is without work but seeking employment. For the data on protest frequency, the Global Database of Events, Language, and Tone (GDELT) tracks reports from every incident of political protest or violence from across the globe to be compiled into their comprehensive databases spanning over 30 years. The data compiled by GDELT for the MENA region will be used to measure protest frequency leading up to the Arab Spring and immediately after its beginning.

For the control factors not conventionally included in economic happiness theory, university education, private sector production, corruption and level of democratic institutions data are also included. Also from the World Bank, university education is measured by the gross percentage of tertiary school enrollment at all age levels. Private sector data is the credit for annual gross domestic product as calculated by the financial resources provided to the private sector by financial corporations. Additionally, corruption data is gathered by utilizing the studies done in the Corruption Perceptions Index calculated by Transparency International. These figures are computed using data from thirteen different reputable institutions. All data points collected for this index measure the extent of corruption in the public and political sectors for a certain country as perceived by the country's population. Each country receives of score between 100 and 0, 100 being the least corrupt and 0 being the most. Lastly, the Center for Systemic Peace's

Polity IV Project will be used to categorize the level of democracy within each MENA country. Using a six-component measure of executive power key qualities, power restrictions and political competition, the Polity IV Project assigns each country a numerical value between -10 and 10 with 6 to 10 being classified as democracies, -5 to 5 anocracies and -10 to -6 autocracies.

Table 1: Summary of Data Statistics from 2002 to 2013

<i>Variable</i>	<i>Observations</i>	<i>Average</i>	<i>Standard Deviation</i>	<i>Minimum</i>	<i>Maximum</i>
<i>Number of Protests</i>	150	92,874.61	16,4407.5	356	1,245,787
<i>GNI per capita</i>	144	\$32,087.15	\$32,783.21	\$3,160	\$125,710
<i>Inflation Rate</i>	137	5.82%	7.37%	-10.07%	53.23%
<i>Unemployment Rate</i>	150	10.05%	5.845847%	.3%	29.9%
<i>University Education</i>	108	27.17%	12.25%	9.20%	60.88%
<i>Private Sector</i>	149	43.43%	25.85%	1.28%	91.77%
<i>Democracy²</i>	137	-4.75	4.23	-10	6
<i>Corruption</i>	150	40.16	14.58	13	77

In the panel data, the time frame covers the ten years, ranging from 2003 to 2012 leading up to the Arab Spring. It includes 150 possible observations from 15 different countries and territories as shown in the Table 1 data statistics. However, this data set is unbalance panel data on account of international data not being reported consistently every year for every variable. The volatile nature of the MENA region also hinders data collection and well as causing potential inaccuracy.

² For Democracy, the values for countries experiencing government interruption, interregnum and transition (values -66, -77 and -88 respectively) have been excluded from the data set.



Figure 3: Middle East and North Africa³

What comprises the MENA region can shift from one study to another depending upon which definition of the geographic region is being used. As seen in Figure 3, the following will be designated as the MENA region for this paper: Morocco, Algeria, Tunisia, Libya, Egypt, Jordan, Lebanon, Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman and Yemen. Unfortunately, Syria and the Palestinian territories had to be omitted from this study on account of the lack of available data. This lack is due to past and current conflicts unfolding within each area.

From Table 1 above, there are extreme disparities between countries in the region in terms of the percentage of the population enrolled in secondary education or, in another example, the extent to which the private sector is allowed to be an important and effective part of the economy. The country with the highest GNIpc, Qatar, (about \$125,710 per person in the year 2012) compared

³ U.S. Energy Information Administration (Oct. 2008)

to the least (a dismal \$3,160 per person in Yemen) showing the income disparity in the region. Additionally, unemployment within some countries is very high, with an extreme of 29.9% of the population out of work in Jordan. This is in stark contrast to the low extreme of 0.3% unemployment in some countries, measured by these standards. In terms of a functioning private sector, many countries such as Lebanon with 97% of the economy privatized have created an environment for entrepreneurship to thrive allowing the country's population to own their own businesses uncontrolled by the government. On the other hand Egypt, Libya and Yemen have less than 10% of their economies attributed to private businesses with the rest controlled by the government and the public sector. The other variables collected also offer a wide range of countries with differing characteristics and extremes to draw from in our analysis.

Equation 1 is the theoretical time fixed effect regression for the number of protests in terms of the multiple variables selected for potential significant impact on the number of protests.

Equation 1: Fixed Effect Panel Data Regression

$$y_{it} = X_{it}\beta + \alpha_i + u_{it} \text{ for } t=1, \dots, T \text{ and } i=1, \dots, N$$

In the equation, N is the number of observations for T time periods. Additionally, y_{it} is the dependent variable, log number of protests, observed for country i at time t . X_{it} is the time-variant regressor matrix, α_i is the time-invariant individual effect that is unobservable and u_{it} is the regression error term.

In the following regressions, we control for many factors that affect an Arab country's propensity to revolt to give the best possible explanation of our data findings. However, we

cannot control for every possible variable that could affect tendencies for civil unrest, as data for international statistics are not readily accessible nor calculated annually. The missing data points for the unbalanced panel data could cause potential bias in the regression analysis. Furthermore, one omitted variable we encountered was the level of urbanization. Urbanization is correlated with the included regressor GNIpc and it is a determinant of the frequency of protests. The omitted variable urbanization has a positive correlation with GNIpc since as a country develops its industrial sector the population's income increases. Additionally, urbanization's increase in job availability decreases a population's desire to partake in protests since it is more cost effective to earn an income working in jobs that are readily available than to take to the streets. As a result, urbanization has a negative correlation with protest frequency. Thus, overall urbanization has an omitted negative bias.

However, by using time fixed effect panel data regressions in this study, potential bias is reduced when it stems from omitted or unobservable variables that vary in a given year but are constant across country. For instance, global economic conditions fluctuate. An example of this in the years being analyzed is the 2008 financial crisis, from which many economies are still recovering. Also, the amount of foreign aid or foreign direct investment available globally can vary from year to year. This aid and investment is used to fund development programs that impact economic conditions such as improvements in institutions and companies for education, healthcare, employment or income. Factors such as these affect all countries to the same degree but can fluctuate in certain time periods.

SECTION IV

RESULTS

To test the significance and theoretical relationship that the economic happiness variables of income, unemployment and inflation have with the measures of increasing protests leading to the Arab Spring, three different grouped regression results are presented in Tables 2, 3 and 4. First, to give a visual relationship between each economic happiness variable and the number of protests, the scatter plots for each are below. Figure 4 shows an exceptionally weak relationship, with a correlation of only .057, between the percentage change in GNIpc and the percentage change in protests.

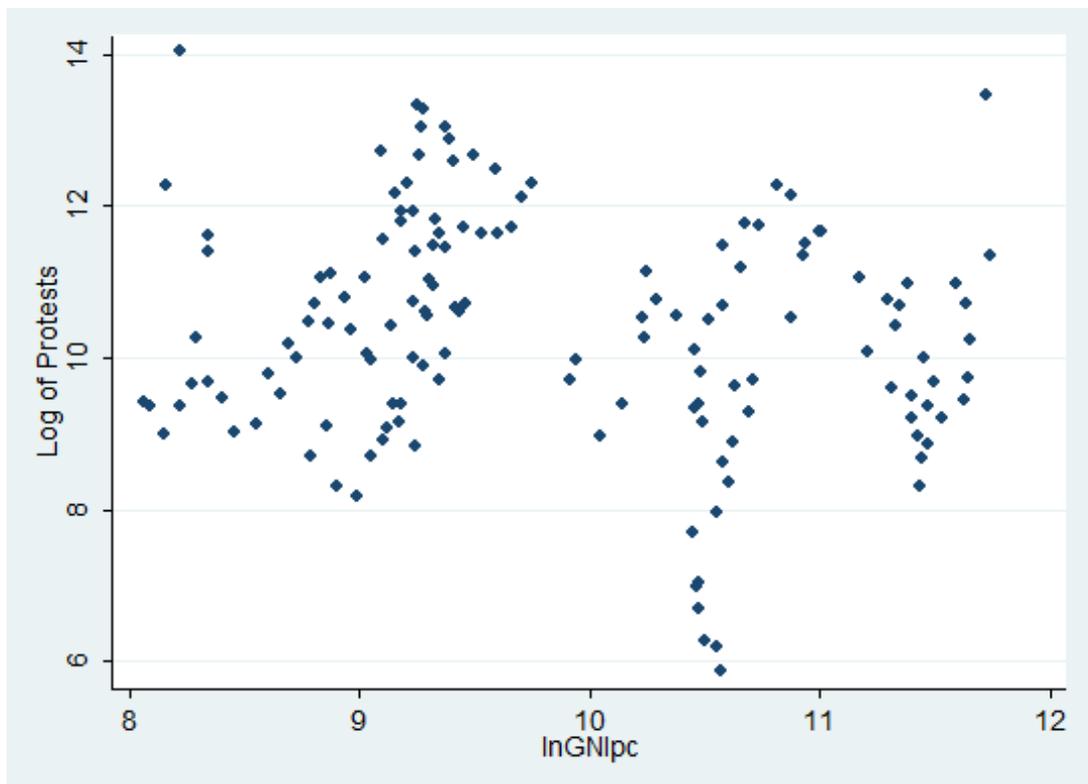


Figure 4: Gross National Income Per Capita and Number of Protests

Figure 5 graphs the change in unemployment rate and change in number of protests. The result mirrors that of GNIpc above. With a correlation of 0, unemployment has an even weaker relationship with protests. As will be shown, the regression results below echo the scatter plot that unemployment is the least significant out of the three economic happiness theory variables.

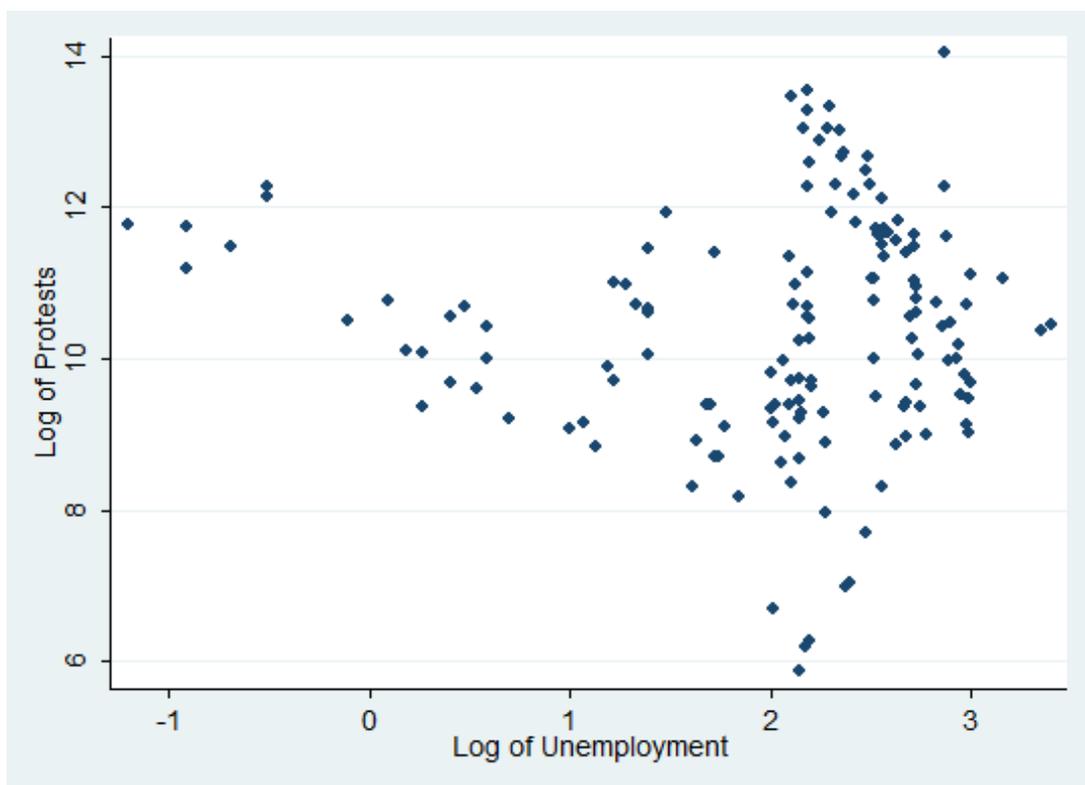


Figure 5: Unemployment and Number of Protests⁴

Lastly, the relationship of percentage change in protests and inflation is shown in Figure 6. Of the three variables, inflation has the strongest positive linear relationship. As inflation increases, the number of protests also increases following the hypothesized relationship in Figure 2.

⁴ Since unemployment data has a spray pattern distribution, I performed a Breusch-Pagan / Cook-Weisberg test for heteroskedasticity in STATA. The results showed that the data set does not have heteroskedastic errors. However, robust standard errors were still used during the regression analysis.

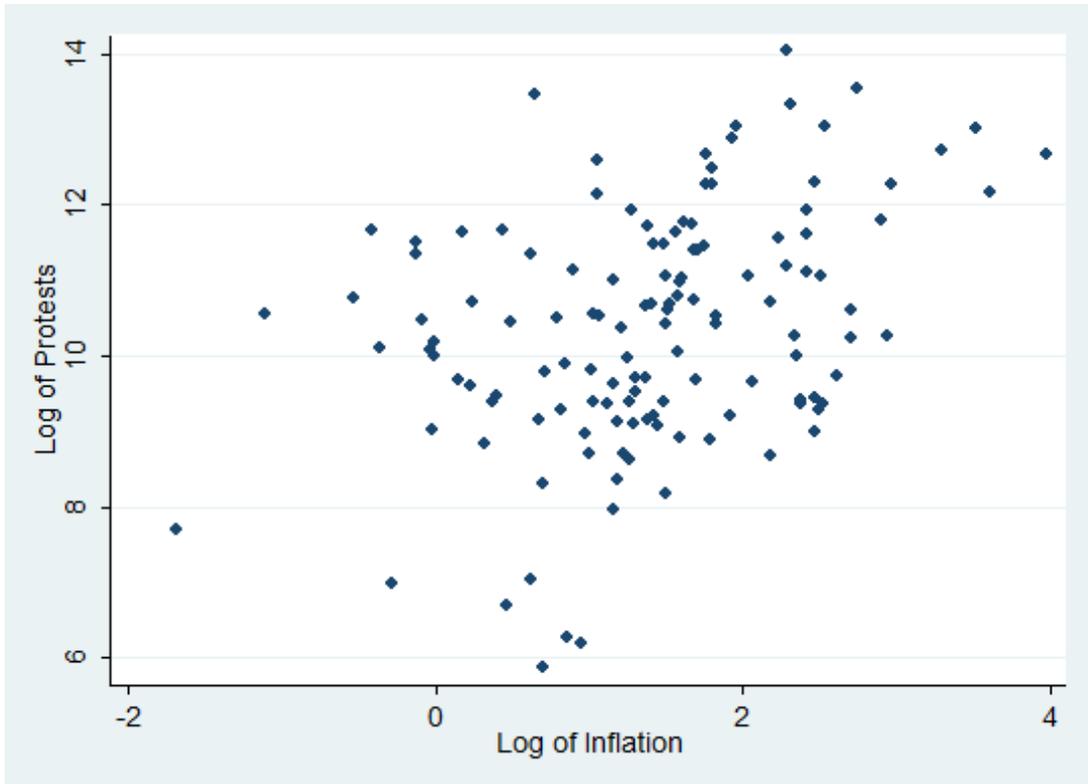


Figure 6: Inflation and Number of Protests

The scatter plots provide a visual for the data being presented but they can only present a small portion of the Arab Spring. Next, the statistical results of the regression outputs are examined to include the additional control variables in an attempt to analyze the entire MENA region socio-political economic climate.

Regression results

GNIpc and number of protests

The following tables are the time fixed effect panel data regression estimates for the number of protests across the Middle East and North Africa from 2003 to 2012 using STATA software.

From the data above, I derived variables to account for their differing effects on the number of

protests. Since economic happiness theory includes inflation, income and unemployment, the three different tables use one of these variables as the independent regressor and the others are included as controls. However, regression (8) for each table utilizes the interactive variable of inflation, unemployment and GNIpc as the independent regressor to test the significance of how each variable depends on and fluctuates with the other. The variable for the number of protests is transformed into a logarithmic function to reflect a percentage change. Similarly, unemployment, inflation and GNIpc are also generated as a logarithm variable so that a percentage increase in these three variables results in percentage increase in the number of protests. Lastly, the interactive variables of unemployment on college education and corruption on private sector are included. This allows for the effects on protests to change in relation to the dependency of unemployment with education and corruption with private sector.

Table 2 begins with GNIpc as the independent regressor. In regression (1), the negative relationship between GNIpc and protests is established as predicted. GNIpc is statistically significant at the 5% to 1% level in regressions (1) to (6). Interestingly, after including all other economic happiness variables and controls, GNIpc becomes insignificant. Thus, omitted variable bias could be present in the regressions prior to (7). Adding additional variables are necessary to account for all the different factors that have caused the Arab Spring to erupt in the region.

Regression (4) is designed to test the unemployment rate and the percentage of the population that has earned a college degree. GNIpc and unemployment are both statistically significant, but interestingly neither university education nor the interactive variable of unemployment and education are significant. Adding to this, regression (5) includes the private sector, to account for

private entrepreneurship and job creation outside of the government, and inflation to take into consideration rising prices. Still, all three controls are insignificant except for GNIpc and unemployment. The insignificance of these variables runs counter to the demographic make up of protesters in the Arab Spring. Many of those protesting have been highly educated youth that have been unsuccessful in finding employment.

In regression (6), factors involving corruption and the private sector are the control variables. Corruption and private sector are influenced by the government. If the government increases the public sector then it will crowd out the private industry. The increased government factories, in the case of countries like Tunisia or Egypt, can be given to the well-connected families or the military, increasing corruption. Thus, both the private sector and corruption could be interrelated – decreased private sectors are often linked to increased corruption. GNIpc and unemployment both remain significant, but the private sector and corruption are now significant as well. The inclusion of corruption has increased the impact the private sector has on the protests.

Lastly, regression (7) includes all factors and (8) uses the interactive economic variable as the independent regressor. Based on the regression results, inflation and corruption are the most significant in determining protests during the Arab Spring. (Even though the private sector is significant in this regression, it has already been shown to be the result of corruption.) Normally, increased GNIpc has decreased protests considerably. Now, it can no longer reduce protests as the other variables have overtaken any significance GNIpc had in the previous regressions. The control variables are more influential on protests than GNIpc for regression (7) when including all factors.

Table 2: Regression Analysis of GNI Per Capita Number of Protests

<i>Dependent Variable: Log Number of Protests</i>								
<i>Regressor</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Log GNIpc</i>	-.29*** (.06)	-.14** (.06)	-.24** (.09)	-.35*** (.11)	-.30** (0.12)	0.40** (.10)	.71 (.42)	
<i>Log Inflation</i>		.57*** (0.09)	.56*** (0.10)		.58*** (.12)		.53*** (.14)	
<i>Log Unemployment</i>			-0.21* (.10)	-.50** (.18)	-.53** (.22)	.34*** (.08)	.13 (.47)	
<i>GNIpc, Inflation & Unemployment</i>								.03*** (.01)
<i>University Education</i>				-.001 (.01)	-.001 (.02)		-.01 (.02)	.04** (0.02)
<i>Unemployment & Education</i>				.01* (.005)	.01 (.01)		.01 (.01)	-.01 (.01)
<i>Private Sector</i>					.001 (.01)	.04*** (.01)	.054*** (.01)	.03*** (.01)
<i>Corruption dummy</i>						4.30*** (.83)	5.16*** (1.49)	3.10*** (.95)
<i>Corruption & Private Sector</i>						-.51*** (.01)	-.06*** (.02)	-.04*** (0.01)
<i>Democracy dummy</i>							.02 (.55)	.05 (.34)
<i>Intercept</i>	13.21*** (0.55)	10.90*** (0.56)	12.29*** (1.05)	14.13*** (1.22)	12.80*** (1.37)	2.50 (1.96)	-2.18 (5.53)	6.04*** (1.16)
<i>Adjusted R²</i>	0.057	0.188	0.208	0.111	0.242	0.277	0.438	0.401
<p>The data above has an unbalance panel data sample size of $n = 150$ for each regression ranging from 2003 to 2012. For the dummy variable Corruption, it takes on the value of 1 for relatively more corrupt countries and 0 for relatively less corruption countries. Standard errors for each coefficient are given in the parentheses. Coefficients are statistically significant at the ***1%, **5%, or *10% significance level.</p>								

Regression (8) has very similar results except now university education is significant for the first time. The interaction of all three economic variables has created an environment for which education becomes critical. Even though inflation is the most significant of the three, perhaps increasing protests and the Arab Spring is more reliant on all three variables being present and dependent on each other. One other noteworthy aspect of these two regressions is that democracy

is insignificant supporting the hypothesis that the Arab Spring is more about economic issues than a push for more democratic institutions.

Unemployment and number of protests

Now using unemployment as the independent variable in Table 3, it is shown to be the most insignificant of all three economic variables. Unemployment only becomes significant when adding control variables for some regressions. In regression (3), unemployment appears (oddly) to only be *negatively* significant when all three economic unhappiness variables are added to the regression. The negative relationship of unemployment and protests is counter to their theorized relationship. Depending on interpretation, regressions (4) and (5) are also unexpected. High unemployment combined with a highly educated population actually decreases the number of protests in this regression counter to intuitive thinking. College education and private sector still remain insignificant.

However, regression (6) follows in accordance with the expected behavior of unemployment. Just as the addition of corruption has an impact on the private sector, the inclusion of corruption has increased the significance of unemployment. Corruption appears to an important variable when unemployment is the independent regressor. Additionally, even with unemployment as the independent variable, regression (7) with all factors yields the same results: inflation and corruption are the most statistically significant. This mirrors the results for GNIpc in Table 2.

Table 3: Regression Analysis of Unemployment and Number of Protests

<i>Dependent Variable: Log Number of Protests</i>								
<i>Regressor</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Log Unemployment</i>	.03 (.02)	-.09 (.07)	-.21* (.10)	-0.50** (.18)	-.53*** (.24)	.34*** (.08)	.13 (.47)	
<i>Log Inflation</i>		.69*** (0.096)	.56*** (0.10)		.58*** (.12)		.53*** (.14)	
<i>Log GNIpc</i>			-0.24** (.09)	-.35*** (.11)	-.29* (.13)	-.39*** (.11)	.71 (.42)	
<i>GNIpc, Inflation & Unemployment</i>								.03*** (.01)
<i>University Education</i>				-.001 (.01)	-.001 (.02)		-.01 (.02)	.04** (.02)
<i>Unemployment & Education</i>				.01* (.01)	.01 (.005)		.01 (.01)	-.01 (.01)
<i>Private Sector</i>					.001 (.01)	.04*** (.01)	.05*** (.01)	.03*** (.01)
<i>Corruption dummy</i>						4.30*** (.83)	5.16*** (1.50)	3.10*** (.95)
<i>Corruption & Private Sector</i>						-.05*** (.01)	-.06*** (.02)	-.04** (0.01)
<i>Democracy dummy</i>							0.20 (.55)	.51 (0.34)
<i>Intercept</i>	10.34*** (0.05)	9.59*** (0.10)	12.29*** (1.05)	14.13*** (1.22)	12.80*** (1.37)	2.50 (1.96)	-2.18 (5.53)	6.04*** (1.16)
<i>Adjusted R²</i>	0.000	0.224	0.208	0.111	0.242	.0277	0.438	0.401

The data above has an unbalance panel data sample size of $n = 150$ for each regression ranging from 2003 to 2012. For the dummy variable Corruption, it takes on the value of 1 for relatively more corrupt countries and 0 for relatively less corruption countries. Standard errors for each coefficient are given in the parentheses. Coefficients are statistically significant at the ***1%, **5%, or *10% significance level.

Inflation and number of protests

Lastly in Table 4, inflation as the economic independent regressor has the most significant positive relationship with the number of protests. The scatter plot in Figure 6 above echoes this conclusion as well as Tables 2 and 3. Inflation is statistically significant at the 1% and 5% level in every regression -as inflation increases, protests increase. In regression (8), the significance of the interaction between the economic happiness variables can perhaps be mostly attributed to the

impact that inflation has on the number of protests. Corruption also exhibits the same significance level and relationship as previously outlined.

Table 4: Regression Analysis of Inflation and Number of Protests

<i>Dependent Variable: Log Number of Protests</i>								
<i>Regressor</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Log Inflation</i>	.67*** (.05)	.57*** (.09)	.56** (.10)	.62*** (.09)	.58*** (.12)	.48*** (.11)	.53*** (.14)	
<i>Log GNIpc</i>		-.14*** (0.06)	-.24*** (0.09)		-.29* (.13)		.71 (.42)	
<i>Log Unemployment</i>			-0.21* (.10)	-.12 (.15)	-.53* (.24)	-.04 (.05)	.13 (.47)	
<i>GNIpc, Inflation & Unemployment</i>								.03*** (.01)
<i>University Education</i>				.02 (.02)	-.001 (.03)		-.01 (.02)	.04** (.02)
<i>Unemployment & Education</i>				.001 (.001)	.01 (.01)		.01 (.01)	-.01 (.01)
<i>Private Sector</i>					.001 (.01)	.03*** (.01)	.05*** (.01)	.03*** (.01)
<i>Corruption dummy</i>						2.99*** (.53)	5.16*** (1.47)	3.10*** (.95)
<i>Corruption & Private Sector</i>						-.04*** (.01)	-.06*** (0.2)	-.038** (0.01)
<i>Democracy dummy</i>							.20 (.55)	.51 (0.34)
<i>Intercept</i>	9.43*** (.08)	10.90*** (.56)	12.29*** (1.05)	9.17*** (.53)	12.80** (1.40)	7.34*** (.52)	-2.18 (5.53)	6.04*** (1.60)
<i>Adjusted R²</i>	0.220	0.188	0.208	0.206	0.242	0.360	0.438	0.401

The data above has an unbalance panel data sample size of $n = 150$ for each regression ranging from 2003 to 2012. For the dummy variable Corruption, it takes on the value of 1 for relatively more corrupt countries and 0 for relatively less corruption countries. Standard errors for each coefficient are given in the parentheses. Coefficients are statistically significant at the ***1%, **5%, or *10% significance level.

All three of the regression tables and scatter plots show that inflation and corruption are the most important factors in creating an environment from which the Arab Spring arose. Many scholars and media outlets focus on the political and democratic aspects of the Arab Spring. However,

this study shows that while political corruption and authoritarian governments are a driving force behind the Arab Spring, they are not the only contributing factors. Economic factors such as inflation must be addressed as well in order to find an appropriate solution to rising civil unrest in the region. Foreign and domestic policy makers must then construct policies taking into consideration both political and economic conditions.

Counterarguments

Three counter arguments are possible for this analysis and are addressed in this section:

1. Problems with the source data
2. Alternative theory – Easterlin Paradox
3. Alternative theory – Other Contributors to Economic Happiness

Source Data Problems

Some of the conclusions drawn from the regression analysis could be flawed if the data is erroneous. As a result of the political instability from the Arab Spring, there has been either no data collection or unreliable data collection in some of the countries being analyzed. Data was missing for some years leading up to the Arab Spring, and after 2011, reporting of data almost stopped entirely. The missing data could create a bias in some of the data analysis or skew the results. Standards of reporting and gathering the data could also vary from country to country or from year to year. This is especially true of such measures as unemployment, where even in the U.S. there is considerable controversy over unemployment statistics due to the difficulty of quantifying how many people are “actively seeking employment”.

However, any quantitative analysis of socio-political and broad economic factors in underdeveloped countries will have incomplete or potentially inaccurate data. Despite this, the basic conclusions of the regression analysis are borne out by evidence; for instance, the Tunisian Jasmine Revolution was started by Muhammad Bouazizi's death, which was clearly largely driven by corruption in the local government. Jordan's avoidance of revolution, on the other hand, was at least partially due to the liberalization of the judiciary, which is a significant anti-corruption policy change.

Alternative Theory – Easterlin Paradox

Economic happiness as measured by income, inflation and unemployment, is not the only theory that could be examined to explain Arab Spring countries. The Easterlin Paradox states that higher income countries are not necessarily happier than lower income nations. This runs counter to the first element of economic happiness theory. According to the Easterlin Paradox theory, there is no clear relationship between economic happiness and average income, but instead happiness is a result of cultural characteristics (Graham 2009). Since money has a diminishing marginal return, more income does not necessarily equate to greater economic happiness according to the paradox.

While the Easterlin Paradox could counter the idea that increased income means increased economic happiness, it is more applicable for countries that are relatively more developed than those in MENA. Higher income *does* result in increased happiness when the income is *required* for basic human needs such as food, shelter, and children's health. It is only after basic needs are met and families are safely above the poverty level that increased income may become less

closely tied to happiness. Thus, higher income having an effect on happiness is mostly true for underdeveloped countries such as those in the Middle East (Aneilski 2007). Since many countries in MENA are classified as developing nations, the Easterlin Paradox would not hold true.

Alternative Theory – Other Contributors to Economic Happiness

The low levels of economic happiness can also be due to the lack of revenue in a country from resources such as oil, a lack of infrastructure to promote higher economic growth, an absence of a skilled labor force or the people of a nation realizing their own economic disparity when they judge themselves against a more prosperous country. With the rise of social media, people across the globe can now connect with others more readily and witness the discrepancy in living conditions. By comparing the inequality in the economic conditions between nations within the Middle East, the people in the poorer countries have recognized their lesser relative standards of living (Frey and Stutzer 2002). The revelation of their subpar lifestyles could cause the people to revolt against the nation or system that got them to that point. Thus, this could also be a cause of the Arab Spring.

While all of these factors are potential contributors to various forms of discontent within a populace, they are extremely difficult to quantify. The purpose of this thesis is to not only identify significant contributors to Arab Spring unrest, but also to identify these factors as ones that leaders and policy makers can target for improvement to address issues. Corruption and inflation are measurable and can be addressed by a variety of means. However, factors such as “social media awareness of other countries” are not issues that should be addressed and reduced

by policy makers – they are realities of modern life that leaders and policymakers must take into account as they plan courses of action for their countries.

CHAPTER V

CONCLUSION

Based on the data, the conclusion can be made that the Arab Spring's proliferation in a select few countries in the Middle East could be the result of economic happiness variables, and most significantly inflation and corruption. If leaders and policy makers want to resolve the core issues behind the Arab Spring, it would be advantageous for them to consider ways to moderate these economic woes and decrease corruption. Corruption and inflation must be lowered and income must rise. It is a balancing act for economic policy makers to find the optimized equilibrium between these factors.

However, by no means are these the only aspects of the economy or political structure that must be addressed. The Arab Spring is a multi-dimensional phenomenon. The long-term outcomes of the Arab Spring on the economies of the affected countries are yet to be seen, as the data is limited and these few countries are not representative of the entire Middle East region.

Nonetheless, these results do provide a framework to begin to understand the causes behind the conditions that led to by the Arab Spring. It is important to examine countries that experienced significant strife *without* tipping over into revolution or civil war; why did popular demands for change not succeed in these countries? Why did these countries not imitate the MENA regional models for Arab Spring? In order to find the correct steps forward, diplomacy and policies toward MENA must have these similarities and differences in mind.

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