A COMPARATIVE ANALYSIS ON REGULATORY INDEPENDENCE

by

ASLI UNAN

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APPROVED BY:

Doç Dr. Işık Özel
(Thesis Supervisor) ....

Yrd. Doç. Dr. Özge Kemahlıoğlu ....

Doç. Dr. Tolga Bölükbaşı ....

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ABSTRACT

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Thesis Advisor: Assoc. Prof. Işık Özel

Keywords: Regulatory independence, independent regulatory agencies, measurement

Although regulatory agencies have been established in many middle-income countries under the influence of similar external actors as well as the market pressures since the 1990s, the levels of regulatory independence of these agencies vary considerably across countries and across time within the same countries. This research explores the variation in the degree of independence of regulatory agencies across countries and time by measuring regulatory independence in telecommunication sector of 36 middle income countries. It looks into economic, political and market-based indicators as explanatory factors of the variation in the degree of independence. Cross-national results indicate that the freedom in political rights, democracy level and investment freedom have a positive impact on the agency independence whereas state ownership in the sector and presidential form of government correlates with independence negatively. Contrary to studies on advanced economies, it does not find any statistically significant impact of income level, rule of law and number of veto players on regulatory independence. Cross-temporal analysis, looking at four countries' formal independence mechanisms from 2006 to 2016, demonstrates that formal independence cannot be preserved as once and for all. Following political and economic uncertainties, governments who were willing to delegate authority to independent regulators may undermine not only de facto, but also formal independence of agencies over time through means of budget control, dispossession of competences and autonomy loss in decision making.

ÖZET

DÜZENLEYİCİ KURUM BAĞIMSIZLIĞI ÜZERİNE KARŞILAŞTIRMALI BİR ANALİZ

Aslı Unan
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Anahtar kelimeler: Düzenleyici kurum bağımsızlığı, bağımsızlık ölçümü, bağımsız düzenleyici ve denetleyici kurumlar

Düzenleyici kurumlar 1990'lardan beri pek çok orta gelirli ülkede benzer dış aktörlerin etkisi ve piyasa baskıları altında kurulmuş olmalarına rağmen, bu kurumların bağımsızlık düzeyleri ülkeler arası ve zaman içinde önemli ölçüde değişiklik göstermektedir. Bu tez, 36 orta gelirli ülkenin telekomünikasyon sektöründe düzenleyici kurum bağımsızlığını ölçerek ülkeler arası ve zaman içinde düzenleyici kurumların bağımsızlık derecesindeki farklılaşmanın nedenlerini araştırıyor. Bağımsızlık derecesindeki varyasyonun sebepleri olarak ekonomik, siyasi ve piyasa temelli göstergelere bakıyor. Ülkeler-arası yapılan analiz sonuçlarına göre, siyasal hak özgürlüğü, demokrasi düzeyi ve yatırım özgürlüğü kurum bağımsızlığı ile pozitif bir korelasyon gösterirken, sektördeki devlet mülkiyeti ve başkanlık sistemi bağımsızlığı olumsuz etkiliyor. Gelişmiş ekonomiler üzerine yapılan çalışmaların aksine, bu çalışma gelir düzeyinin düzenleyici bağımsızlık üzerinde bir etkisini bulmuyor. Zamansal analiz, 2006-2015 yılları arasında dört ülkenin (Fas, Mısır, Tunus, Ürdün) telekomünikasyon sektöründeki düzenleyici kurum bağımsızlığı mekanizmalarına bakarak, literatürdeki fonksiyonel yaklaşımın varsayımlarının aksine, biçimsel bağımsızlığın da yıllar içinde değişebildiğini gösteriyor. Kurumların biçimsel bağımsızlık derecesi, siyasi ve ekonomik belirsizlikleri takiben, bütçe kontrolü, fiilen zayıflatma veya karar verme yetkisini elinden alma gibi yöntemlerle azaltılabiliyor. Hükümetlerin AB düzenleyici çerçevesine bağlılığı düzenleyici bağımsızlığı korumada rol oynuyor.

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List of Abbreviations

ANRT- The National Agency for the Regulation of Telecommunications of Morocco

BEREC- Body of European Regulators for Electronic Communications

EC- European Commission

EMERG- The Euro-Mediterranean Regulators Group

ENP- European Neighborhood Policy

EU- European Union

ICT- Information and Communication Technology

INT- The National Instance of Telecommunication of Tunisia

IRA- Independent Regulatory Authority

ITU- International Telecommunications Union

NTRA- The National Agency for the Regulation of Telecommunications of Egypt

OECD- The Organization for Economic Cooperation and Development

TRC- The Telecommunications Regulatory Commission of Jordan

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Chapter 1.
Introduction

In the recent decades, a general trend towards expanding regulation as a tool of governance in the areas of social and economic policy has proceeded with the establishment of independent regulatory agencies (IRAs). Independent regulatory agencies have spread in many parts of the world and became central features of governance in many advanced and developing economies (Cook et al.2004; Jordana and Levi-Faur, 2005, 2011). With respect to rule of law, courts, markets and stock exchanges though, developing economies had relatively weaker institutional structures in their governance models. After the introduction of systematic sectoral privatization and liberalization initiatives, independent regulatory agencies were identified as prominent institutions of good governance for regulatory reforms and promoted by organizations such as World Bank, International Monetary Fund and the OECD for the developing economies. Governance through independent regulatory agencies became a central feature of regulatory reforms all around the world.

Although regulatory agencies have been established in many middle-income countries under the influence of similar external actors as well as the market pressures since the 1990s, the levels of regulatory independence of these agencies vary considerably across countries and across time within the same countries. This thesis particularly tackles this specific question: what explains variation regarding regulatory independence in the middle income countries? Employing a quantitative method on cross-national analysis, it suggests that middle income countries with greater levels of democracy, political rights and investment freedom and with lower levels of state ownership in the respective market delegate more authority to their regulatory agencies. Contrary to findings for advanced economies, it does not find a statistically significant impact of income level, rule of law and number of veto players on regulatory independence. Further, it demonstrates that countries with presidential regimes delegate less authority to IRAs in middle-income economies. Complementing the findings of the quantitative analysis with a cross-temporal qualitative analysis on four case studies, it also argues that regulatory independence cannot be preserved once and for all. Following political and economic uncertainties, governments who were willing to delegate authority to independent regulators may undermine not only de facto, but also formal independence of agencies over time through means of budget control, dispossession of competences and autonomy loss in decision making.

Previous studies display the persistence of significant variation in the institutional design of regulatory agencies in a comparative fashion, but they mostly focus on countries situated in the same region (see Jordana and Levi-Faur for Latin America, 2005; Gilardi, 2002 and Hanretty and Koop, 2013 for Europe). This thesis, instead, scrutinizes regulatory agencies from several developing economies in different regions to see how dissimilar economic, political and market environments shape the institutional design of regulatory agencies. In order to assess how IRAs have been studied for advanced economies and show how these studies can or cannot explain the pattern, trend and variation of agency independence in developing economies, it also reviews the related theoretical and empirical literature up to date.

This thesis specifically focuses on telecommunications market to observe regulatory independence. The particular attention is paid to the conditions under which regulatory independence differs. Prior to the telecommunications sector reforms, telecommunications services were largely provided under monopoly conditions, either by state entities or by private companies. Through the waves of liberalization, many independent agencies in utilities sectors have been established to fulfill the purpose of an "effective regulatory framework for the public utilities to be applicable to the private sector operators and to promote competition and regulate monopolies" (OECD, 2013: 63). As one of the utilities sectors, telecommunications market makes a good case to observe regulatory independence because (I) it is one of the first sectors in which IRAs were introduced; (II) many developing economies have created IRAs during the widespread diffusion of the regulatory agencies to catch up with the global trends[1]; and (III) this sector has developed its own international organizations specialized for information and communication technologies which makes it possible to achieve recent data on regulatory agencies worldwide. To determine the level of regulatory independence for each telecom agency, this thesis uses Gilardi (2002) index which is a conventional tool in the literature to measure the level of IRA independence.

This thesis is presented in six chapters. In this introductory chapter, I have illustrated the rationale for studying the independence of regulatory agencies for telecommunications market and in middle-income countries[2]. I have discussed how the study of IRAs for the telecommunications market in middle income economies is particularly necessary, and presented the major research question which I aim to answer in this work.

Aiming to investigate the variation in independence of IRAs across nations, Chapter 2 builds a theoretical foundation with respect to fundamental literature engaging in the determinants of agency independence and develops hypotheses as regards economic development, political system and market structure. It overviews the operationalization of the measurement of the degree of independence of regulatory agencies.

Chapter 3 presents and explains data collection and methodology of this thesis. Offering a cross-country analysis of the new data over 36 countries[3], Chapter 4 discusses the results of statistical analysis and breaks down the bivariate relationship between formal independence and each independent variable. Examining the respective importance of political, economic and market-based factors, this study finds out that while in advanced economies rule of law is the most significant explanatory factor behind regulatory independence, freedom in

[1] But some governments have incorporated the concept of formal agency independence much less enthusiastically than others (see Bianculli et al., 2013)
[2] I use middle income economies and developing economies interchangeably.
[3] See Appendix B for the list of the countries.

political rights has the greatest explanatory power to explain independence in the case of developing economies.

Along with cross-country variation, another aim of this thesis is to understand the formal change in IRA independence over time. It intends to complement the quantitative findings of this thesis with qualitative case studies. It selects Southern European Neighborhood Policy (ENP) countries to observe the variation in regulatory independence. The ENP offers financial assistance to its neighbors in the South in return for reform in specific policies, one of which is electronic communication policy and regulation. To that end, countries commit to reform telecommunications framework and promote politically independent regulatory agencies in this sector. Egypt, Jordan, Morocco and Tunisia are the four ENP-South countries observed in this thesis to understand the driving factors of regulatory change in time, if there is any. It also touches upon the (ir)reversibility of the reforms pressured by the ENP. Chapter 5 thus observes this phenomenon by focusing on three explanatory variables of formal change in time: (1) political change, (2) economic freedom and (3) commitment to EU regulatory directive.

Chapter 6 discusses and compares the determinants of the formal change in regulatory independence in aforementioned countries. It also brings quantitative cross-national and qualitative cross-temporal case study results together to comprehensively understand the pattern of variation in regulatory independence of developing economies. It puts the limitations of this study forth and concludes. Throughout the thesis, special attention is paid to show how political and economic environment along with market structure of the respective sector affect states' behavior vis-à-vis their regulatory agencies.

Chapter 2

Theoretical Framework: Determinants of Regulatory Independence

The purpose of this thesis is to resolve the determinants of the variation in the degrees of regulatory independence. This chapter presents three clusters of determinants: economic development, political system and market structure. It introduces the literature up to date regarding the determinants of regulatory independence and develops hypotheses accordingly.

2.1 Economic Development

Regulatory institutions are identified as market-supporting mechanisms (Rodrik, 2007). Current systems of governance require that a successful market economy is overseen by regulatory institutions, either by autonomous regulatory agencies or governmental bodies. Regulatory agencies, as the most featured institutions of the regulatory governance throughout the world, are the bodies responsible for regulation in widespread areas of goods, utilities and financial markets. Rodrik (2007: 157) conceives that ‘the freer are the markets, the greater is the burden on the regulatory institutions’. Thus, open market economies tend to recognize the need to create regulatory bodies for several sectors as it is currently the case in almost every market economy. The regulatory burden on the regulatory bodies in countries with freer economies will be greater because of the variety of the sectors and the greater number of firms in these sectors. In an economically free country, there would be no constraints on the flow of investment capital. Individuals and firms would be allowed to move their resources into and out of specific activities, both internally and across the country's borders, without restriction (Heritage Foundation, 2014).

Following the liberalization of markets, developing economies establish regulatory agencies as mechanisms of market-support. Levi-Faur (2012) emphasizes that developmental state and the regulatory state represent an ongoing and largely continuous process of state and market building. As the regulatory state is claimed to promote equality or economic growth, it is possible to predict the joint expansion of the economy and the extent of regulatory governance. In industries that require long-term investment such as infrastructure industries, independent agencies offer the security of a stable investment climate and predictable rules (Levi- Faur, 2003). Thus, I expect that;

H1. Countries with more open market economies delegate greater degrees of independence to their regulatory agencies.

Diffusion research across American states demonstrates that rich states innovate faster (Walker, 1969; Gray, 1973), because they have a greater margin of spare resources making policy experimentation easier and the risk of failure less severe (Orenstein, 2003). In addition, Gual (2005) observed that there is a high correlation between regulatory quality and GDP per capita. Jalilian et al. (2007) as well search for the impact of regulation on economic growth in developing economies and find out that there is a strong causal link between regulatory quality and economic growth. Through the reverse relationship, I expect that;

H2. Regulatory independence increases with GDP per capita.

2.2 Political System

Various studies have shown that political features of countries are connected with the creation and survival of the economic institutions independent from politics. This research identifies four of them: rule of law, level of democracy, form of government and veto players.

2.2.1 Rule of Law

Political scientists and economists often recommend that countries seeking economic development should embrace the principle of the rule of law (White, 2010). The rule of law provides two basic protections against arbitrary or discriminatory government action. It provides that the rule applied to a particular case must be reasonably predictable. And it provides that the rule must be predictable without regard for the identity of the parties (Boies 2006).

As a tool of economic development through market improvement, regulatory agencies require autonomy from politics that rule of law could ensure. Under the rule of law, governments have less discretional authority to act arbitrarily or discriminatory. They face difficulties making up new decrees every time they wish to change an established practice, resulting in the preservation of formal independence of the authorities working autonomous from the government. It enables independent regulatory bodies to fulfill the function that the initial law gives them.

Jordana and Ramió (2010) have demonstrated, on the basis of proxy measures related to turnover, that regulatory agencies in Latin America are, on average, less independent than their pairs in Western Europe. The gap between Latin American agencies and Western European ones is consistent with the difference in the rule of law between the two regions. Another study by Hanretty and Koop (2013) has shown that in countries where the rule of law is well established, the degree of actual independence of regulatory agencies is higher. Although they have put actual independence as in connection with the rule of law in a country, I expect that in countries where rule of law is well respected, the degree of formal independence of regulatory agencies will be higher due to less discretionary and arbitrary act of government against the formal mechanism. Drawing from these aspects, I hypothesize that;

H3. Countries with more firmly established rule of law have regulatory agencies with higher degrees of formal independence.

2.2.2 Level of Democracy and Political Rights

Various studies (see Rueschemeyer et al. 1992; Kleinberg and Clark 2000; North 1990) have shown that liberalization[4] is positively connected with democratization. As IRAs have been created and given independence during the waves of liberalization of the relevant markets in 1990s and 2000s, it is possible to expect that the creation of IRAs increases with democracy levels. Jordana and Levi-Faur (2005) did not find clear support for the view that democracy as a regime and democratization as a process of change affects the process of the diffusion of regulatory authorities; however, they have suggested from Latin American model that more robust democracies create slightly fewer regulatory agencies. On the contrary, Vibert (2007) suggests that unelected bodies such as regulatory agencies strengthen with democracy. Democracies with less freedom display features of state paternalism or political clientelism (Hallin and Mancini, 2004), thus create room for political interference towards independent decision makers such as courts, central banks or regulatory agencies. In democracies with more freedom, there are less tendencies to control the actions of presumably independent bodies. Level of democracy, therefore, increases the delegated authority to IRAs. Thus, I hypothesize that,

H4a. Free democracies are more likely to delegate more independence to regulatory agencies than partly free and not free democracies.

Given that political institution variables often suggest a certain degree of political rights; scholars suggest that even autocratic regimes can have a satisfactory economic performance as long as some political rights are granted to society (Acemoglu and Robinson, 2012; Pereira, 2011). It might also suggest that political institutions generate economic growth in authoritarian regimes by working as a substitute for democracy. In other words, autocracies

4 Liberalization means elimination of state control over economic activities. It implies greater autonomy to the business enterprises in decision-making and removal of government interference.

can differentiate from each other with regards to political institutions. Countries with a wide range of political rights include free and fair elections in which political parties run in a competitive manner. Absence of political rights is prompt by severe government oppression and sometimes by lack of functioning central government (Freedom House, 2016). In a country where government shows oppressive features, no interference towards independent bodies is less expected. Therefore, I presume that;

H4b. Countries with greater degrees of political rights tend to delegate more authority to agencies operating independent from the government.

2.2.3 Form of Government and Veto Players

Political scientists have long been interested in the potential political and economic consequences of electoral rules and form of government (Lijphart, 1992; Mainwaring & Shugart, 1997; Cheibub, 2007). Form of government affect economic growth through systematically influencing governments' economic policies (e.g. Persson and Tabellini, 2003; Rodrik, 1996) and countries' economic institutions (e.g. North, 1990; Acemoglu et al., 2001; Persson, 2005). Parliamentarism and presidentialism each may demonstrate differing strengths and weaknesses along different policy dimensions (Weaver & Rockman, 1993).

According to Jordana and Ramio (2010), strong legislatures of presidential regime, for example, protect delegation whereas in presidential regimes with weak legislatures institutional anchorages to delegation are almost on-existent. In parliamentary regimes, on the other hand, executives will be more favorable towards creating regulatory agencies accountable to the executive (Voigt and Salzberger 2002) and Executives in parliamentary systems often meet less resistance to attempted changes to agencies' design, to the extent that they face fewer institutional veto players (Moe and Caldwell 1994). Yet none of these studies compare the levels of regulatory independence in parliamentary and presidential form of governments.

Gerring et al. (2009: 23) finds that compared to presidentialism, parliamentarism is associated with better telecommunications infrastructure, lower import duties, greater trade openness, better investment ratings, and higher levels of per capita GDP. Also, parliamentarism is strongly associated with good governance (2009: 24). As independent regulatory agencies are also associated with good governance and better market improvement due to its foreseen objectivity and impartiality (OECD, 2013), I expect that:

H5a: Parliamentary regimes tend to delegate more authority to IRAs than presidential regimes.

Jordana and Ramio (2010) argued that the more veto players present in a political regime, the more anchorage possibilities there will be for regulatory agencies to realize their formal independence. Gilardi (2002) found that in countries with more veto players, independent regulatory agencies are both less likely to be set up and to be less formally independent of governments. Some analysis of European countries has also shown that utilities liberalization increases the probability that an independent regulatory authority is established, but only in countries with few veto players (Gilardi 2005). On the other hand, the pattern seems different in Latin America, where independent regulatory agencies were more likely to be established in countries with many veto players (Jordana and Levi-Faur, 2005). Considering the development levels of the countries in these analysis, I hypothesize for middle-income economies that;

H5b: Countries with more veto players delegate greater degrees of agency independence.

2.3 Market Structure

Promotion of competition in the infrastructure of capitalist economies coincided with the phenomenon of regulatory state (Levi-Faur, 2003) and eventually with the promotion of independent regulatory agencies in the regulation of infrastructure. The wave of infrastructure privatization[5] has spread throughout the world in 1980s and 1990s, triggering the creation of new regulatory authorities to regulate the newly privatized infrastructure

5 Privatization is the transfer of control of ownership of economic resources from the public sector to the private sector. It means a decline in the role of the public sector as there is a shift in the property rights from the state to private ownership.

monopolies. Prior to the telecommunications sector reforms, telecommunications services were largely provided under monopoly conditions, either by state entities or by private companies. Often the operator and regulatory body for telecommunications services was the government; therefore, no regulatory independence existed. Through the waves of liberalization, many independent agencies in utilities sectors have been established to fulfill the purpose of an “effective regulatory framework for the public utilities to be applicable to the private sector operators and to promote competition and regulate monopolies” (OECD, 2013: 63).

In most advanced countries, many previous monopolies are no longer so. In the developing world, however, most have remained as monopolies yet changed hands from public to private. As one of the missions of independent regulatory agencies, liberalization of monopolies and diffusion of independent regulatory agencies coincided in many countries. As a matter of fact, some of these agencies were established for that very purpose. Therefore, I expect that;

H6: Regulatory independence is higher in countries with telecommunication sectors have been fully privatized.

Next section introduces the operationalization of the measurement of regulatory agencies by introducing different methods and nodes; and selects the proper method of this research.

2.4 Measurement of Regulatory Independence

Although governments around the world delegated regulatory responsibilities to their independent regulatory agencies, it did not guarantee a single form of independence. Agencies may be independent from their governments and politicians to different degrees; therefore, the measurement of the independence of the regulatory agencies remains crucial for social science research. As this thesis explores the variations in the degrees of independence of regulatory agencies in different countries and time periods, the operationalization of the measurement of agency independence is vital to this research.

Political independence has been defined as "the ability to select policy objectives without influence from the government" in the literature of central bank independence (Alesina and Summers, 1993:55). Similarly, Hanretty and Koop (2012: 199), define political independence of regulatory agencies as "the degree to which day-to-day decisions of regulatory agencies are formed without the interference of politicians and/or consideration of politicians' preferences". Many authors, however, prefer to focus on empirical operationalization rather than definition to assess agency independence (see Gilardi 2002, Elgie and McMenamin 2005, Edwards and Waverman 2006, Trillas and Montaya 2007, Hanretty and Koop 2012).

The literature makes an essential distinction between formal (or legal, or de jure) and actual (or de facto) independence of regulatory agencies (Gilardi and Maggetti, 2011). While formal independence points to rules of procedures, laws, decrees and statutes that create and sustain regulatory agencies, actual independence refers to how these rules are translated to everyday practices of the agencies. There is for sure a role for non-legal determinants of regulatory independence; however, this does not necessarily mean that formal independence is irrelevant to those determinants. Although some studies do not find formal independence[6] as an important determinant in the actual independence (see Maggetti, 2007), many scholars trace actual independence from formal independence (Furlong, 1998; Hayo and Voigt, 2007; Hanretty and Koop, 2013; Guidi 2015; Elgie and McMenamin 2005). This study, as well, study formal independence because (1) it observes variations of agency independence over time; and it is possible to track changes in formal independence by year through a formal change (e.g. new legislation) and (2) actual independence is more difficult to measure and compare quantitatively due to the fact that its observation is constrained. Examples of the measurement of actual independence observed the frequency of revolving doors phenomena, partisanship of nominations, internal organization and so on (see Maggetti, 2007; Hanretty and Koop, 2013). However, observation of these features in large number of countries and sectors are beyond the capabilities and goals of this study.

[6] Using Gilardi (2002) index.

Gilardi (2002:880) uses the independence indices developed for central banks (see, for example, Grilli, 1991; Cukierman et al., 1992; Cukierman and Webb, 1995) by making some adaptations. His analysis acknowledges the distinction between formal and informal independence, but proclaims "understanding the institutional design of regulatory agencies requires that the formal aspects of independence are the only ones that policy makers can directly influence". Gilardi, therefore, focuses on formal independence and divides it into five dimensions: (1) status of the director of the agency, (2) status of the board of directors, (3) relationship with the government and legislative, (4) financial and organizational autonomy and (5) regulatory competencies.

Montaya and Trillas (2007) apply several alternative methods previously used in the literature to measure the degree of regulatory independence for telecommunications regulatory agencies. The authors construct independence measure that combine legal and practice issues, borrowing from the methodology used in the central bank independence literature. For example, the legal indices used thus far computed the prescribed number of years that the head of agency was allowed to stay in office, but authors correct this legal prescription with the actual time period that the regulator is in office (2007:32).

Table 1 below summarizes a number of indices from the literature that measures formal independence of regulatory agencies.

Table 1: Measurement of Independence of Regulatory Agencies

Referee	Agency independence	Nodes	Aggregation Method
Gilardi (2002)	From politicians	Agency head; agency board; relationship with government and parliament; financial, organizational autonomy; exclusive competence	Mean of node scores *(selected method for this thesis)*
Elgie and McMenamin (2005)	From politicians	Agency head; agency board; regulatory competencies	Mean of appointments node scores, plus competencies node score, divided by two
Edwards and Waverman (2006)	From government	Multi-sectoral, multi-member agency; exclusive competence; power over interconnect rates	Mean of item scores
Trillas and Montaya (2007)	From politicians	Political vulnerability; the turnover rate; practical independence	Mean of item scores
Hanretty and Koop (2012)	From politicians	Agency head; agency board; internal organization; personnel	Latent trait model

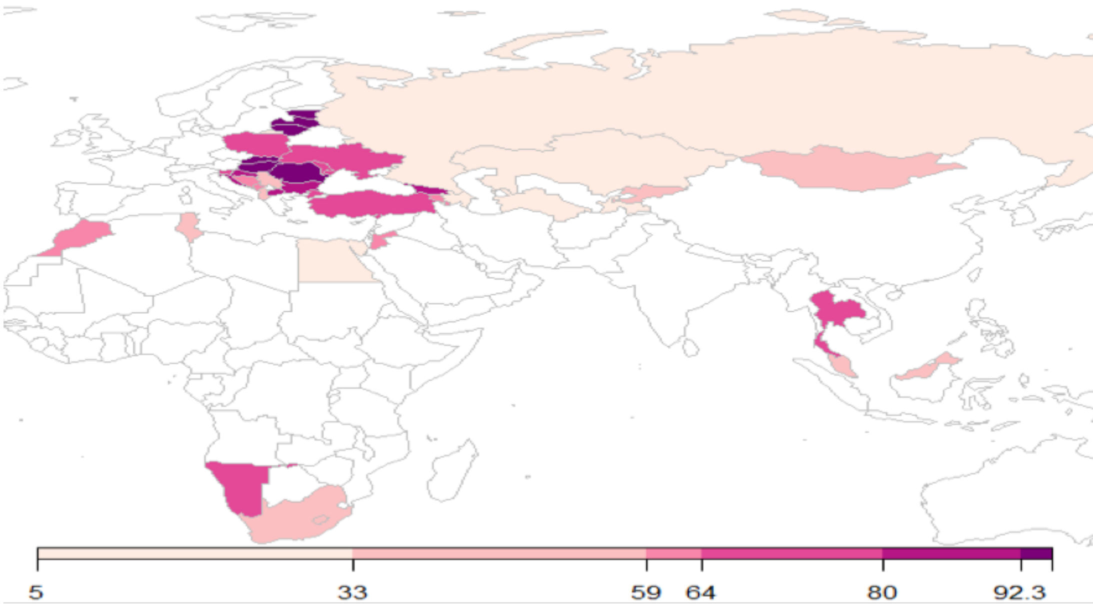
As this research attempts to measure the degree of formal independence of regulatory agencies in middle income economies, the relevant literature on the methods of measurement are presented in this section. The relevant literature shows that authors who address and analyze formal independence mostly use the index of Gilardi (2002) whose features are borrowed from Cukierman et al.'s (1992) central bank independence index. This thesis likewise use the index developed by Gilardi to measure formal independence of regulatory agencies.

Chapter 3.
Research Design: Data, Method and Models

The goal in this analysis is to understand whether economic freedom, level of political rights, level of democracy, form of government, state ownership in the market, rule of law, number of veto players and GDP per capita (independent variables) affect the independence of regulatory agencies (dependent variable). The source of the data presented in this research is a database of regulatory agencies observed at country-sector categories. The database comprises of telecommunications sector and countries that were middle-income when their telecommunications regulatory agency was established.

Graph 1 displays the level of regulatory independence by countries in the datasets on a world map by coloring higher levels of independence with darker colors whilst less independence with lighter ones.

Graph 1: Agency Independence across Countries



Source: My own calculation

Low-income and middle-income economies are collectively referred to as developing economies but this research selects only middle-income economies to observe regulatory independence in the developing world[7]. Middle-income countries' GDP per capita varies from 1,046 to 12,735 US dollars which is a broad range to show the impact of income level on agency independence (WDI, 2016). In addition, ENP-South countries that are examined in the second part of the empirical research belong to middle-income economies.

Expecting to find some variation in the world of regulatory agencies, this thesis searches for possible explanatory basis underlying the differences. As the group of middle income provides a sample with various development levels, political systems and market traditions from different regions of the world, the results will be representative both for the countries of research and other developing economies of the world.

[7] Middle income economies represent 77% of the developing economies.

Limited sample size is an important limitation of this research. Collecting data for all countries and in all different languages was not feasible, therefore this thesis relies on data that is collected by ITU ICT Eye Regulatory Information[8]. Although the addition of more middle-income economies would enrich the analysis and results of this research, it only adds countries whose telecommunications agencies do not lack values regarding the indicators of the independence index. That is why, other middle income economies could not be added to the research. The sample includes countries that were middle income when their regulatory agencies were established. Nine of them have later became high income countries: Croatia, Latvia, Lithuania, Russia, Estonia, Hungary, Poland, Slovakia and Slovenia[9]. These countries have gone through massive market liberalization recently and committed to reform their regulatory framework in line with the best-perceived practice as other middle-income countries of the research.

In total, this thesis has collected data for telecommunications sectors of 36 countries. It has gathered data on formal independence for a sample of 36 middle-income countries[10] through ITU ICT Eye Regulatory Information (2016) which consists of questionnaires sent to regulatory agencies; and double-checked that information by other available sources such as laws, decrees, ordinances and statutes. The dependent variable of the analysis is thus the independence of regulatory agencies in a given country and agency. To measure the degree of independence, an independence index is used to weight different aspects of regulatory independence to produce one single value for every agency (see Gilardi 2002; Cukierman et al. 1992; see Appendix A for the index and its composites).

A multivariate linear regression analysis is pursued to understand the relationship between dependent and independent variables of this study since (a) the model estimates with multi explanatory variables, (b) the dependent variable is quantitative and continuous, and (c) the relationship is in a linear trend.

[8] Available at http://www.itu.int/net4/itu-d/icteye/AdvancedDataSearch.aspx
[9] These countries were middle income economies when their telecom regulators were formed except for Russia and Slovakia. They are still added to the research to have a complete set of transition economies.
[10] When their telecommunications regulatory agencies were created.

The independent variables are linked to the hypotheses developed in the previous chapter. Although endogeneity might appear as a problem due to a loop of causality between the independent and dependent variables of the model, it is justified because the hypotheses are developed to find out the correlation rather than the causation between the dependent and independent variables. First variable is level of political rights and is collected from Freedom House Freedom in the World: Political Rights (2015) measurement index as 1 being most free and 7 being least free in terms of political rights[11]. Freedom House Category of Democracy 2014 has been added in Model 1 to see the impact of the level of democracy with three categories: not free, partly free and free.

Second variable is investment freedom, and its data has been collected from Heritage 2015 Index of Economic Freedom: Investment Freedom[12] database. Third variable is remaining state ownership[13] in main fixed operator (%). The data on remaining state ownership is collected from ITU ICT Eye Regulatory Information (2015)[14]. GDPs per capita in US dollars is achieved through World Bank (2015). The data on the fifth variable, rule of law, has been attained through World Governance Index (2014) rule of law measurement.

Number of veto players has been achieved through the Database of Political Institutions (DPI) 2012. The data on the categorical independent variable, form of government, has also been transferred from DPI 2012 and has three categories: parliamentary, presidential and mixed system.

Table 2 portrays the descriptive statistics to summarize the sample of this research.

[11] The political rights questions were grouped into three subcategories in their measurement: Electoral Process (3 questions), Political Pluralism and Participation (4), and Functioning of Government (3).
[12] Available at http://www.heritage.org/index/explore
[13] Represents market liberalization.
[14] Available at http://www.itu.int/net4/itu-d/icteye/AdvancedDataSearch.aspx

Table 2: Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	St. Deviation
Regulatory Independence	36	5.00	95.00	63.81	26.48
Investment Freedom	36	0	90.00	60.28	19.99
Remaining state ownership	36	0	100	51.81	37.39
Rule of law	36	-1.3600	1.1600	-0.0475	0.621
GDP per capita (US dollars)	36	1.000	24.000	8.222	5.643
Political rights	36	1.000	7.000	3.333	2.028
Veto Players	36	1.000	3.000	2.917	1.662

The null hypotheses in this research are;

H01: The levels of investment freedom have no effect on the independence of regulatory agencies.

H02: GDP per capita has no effect on the independence of regulatory agencies.

H03: Rule of law has no impact on the regulatory independence.

H04a: Category of democracy, whether free, partly free or not free have no effect on the independence of regulatory agencies.

H04b: Level of granted political rights have no effect on the independence of regulatory agencies.

H05a: Form of government, whether presidential, parliamentary or mixed, has no effect on the regulatory independence.

H05b: Numbers of veto players have no impact on the independence of regulatory agencies.

H06: Remaining state ownership has no effect on the independence of regulatory agencies.

The alternative hypotheses are;

H1. Countries with more open market economies (through investment freedom) delegate greater degrees of autonomy to their IRAs.

H2. As GDP per capita increases, the level of regulatory independence increases.

H3. Agency independence increases when rule of law is better established in a country.

H4a. Countries with greater degrees of freedom in political rights delegate more authority to IRAs.

H4b. Regulatory independence increases with level of democracy.

H5a. Parliamentary regimes are more prone to incorporate autonomous agencies operating independent from the government than presidential regimes.

H5b. Countries with more veto players delegate more authority to IRAs.

H6. Greater state ownership in the market decreases the degrees of regulatory independence.

For 90% level of significance, alpha is determined as 0.1 (1-0.90=0.1).

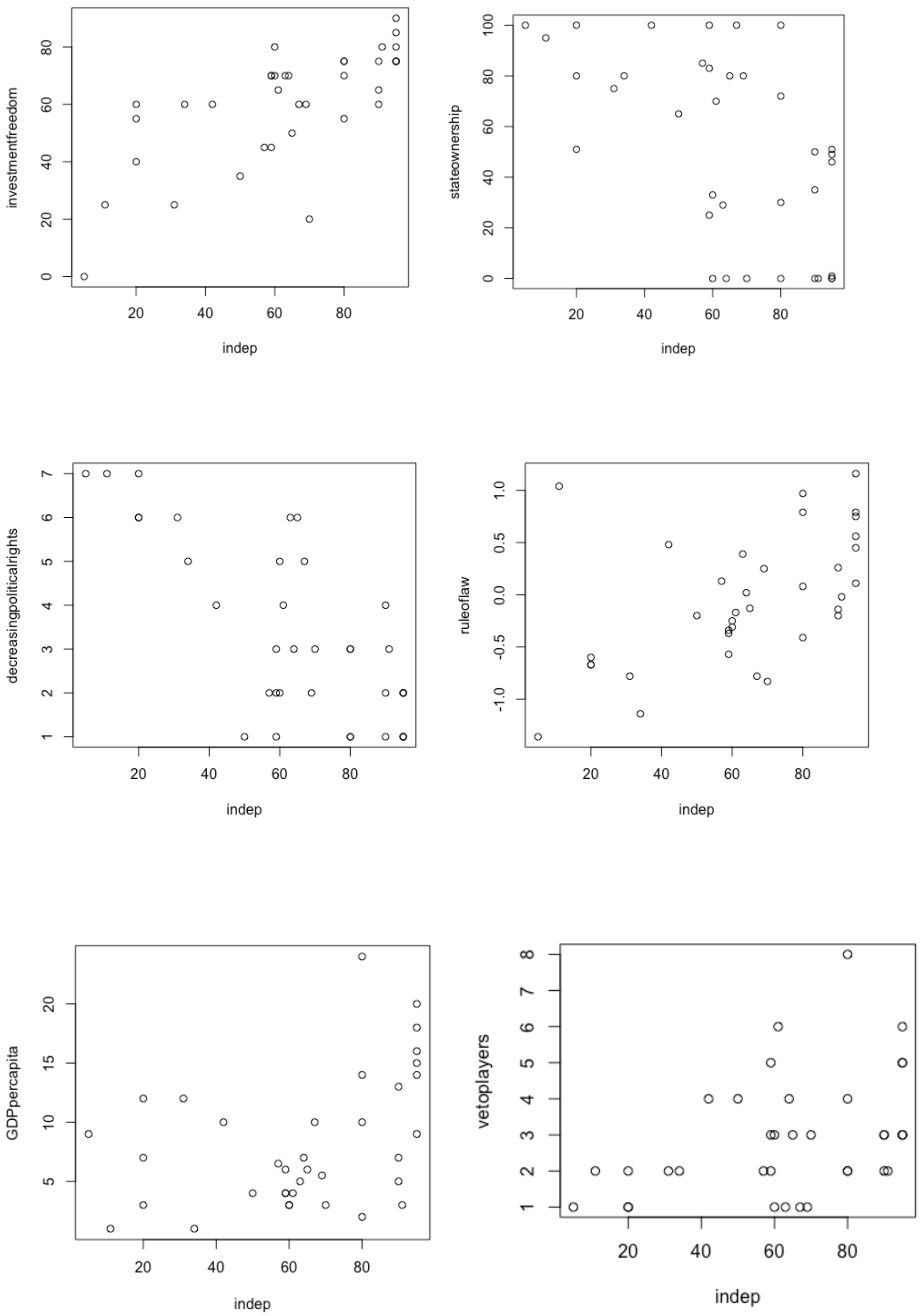
Chapter 4.
Empirical Analysis

4.1 Analysis

Before turning to the multivariate analysis, a bivariate breakdown of the relationship between independent variables and agency independence is presented in Graph 2. The variables on the horizontal x-axis is the independent (predictor) variable, and the variable on the vertical y-axis is the dependent (response) variable. Each point in the plot is plotted as a pair. Since it is a small number of observations, amount of scatterness is weak.

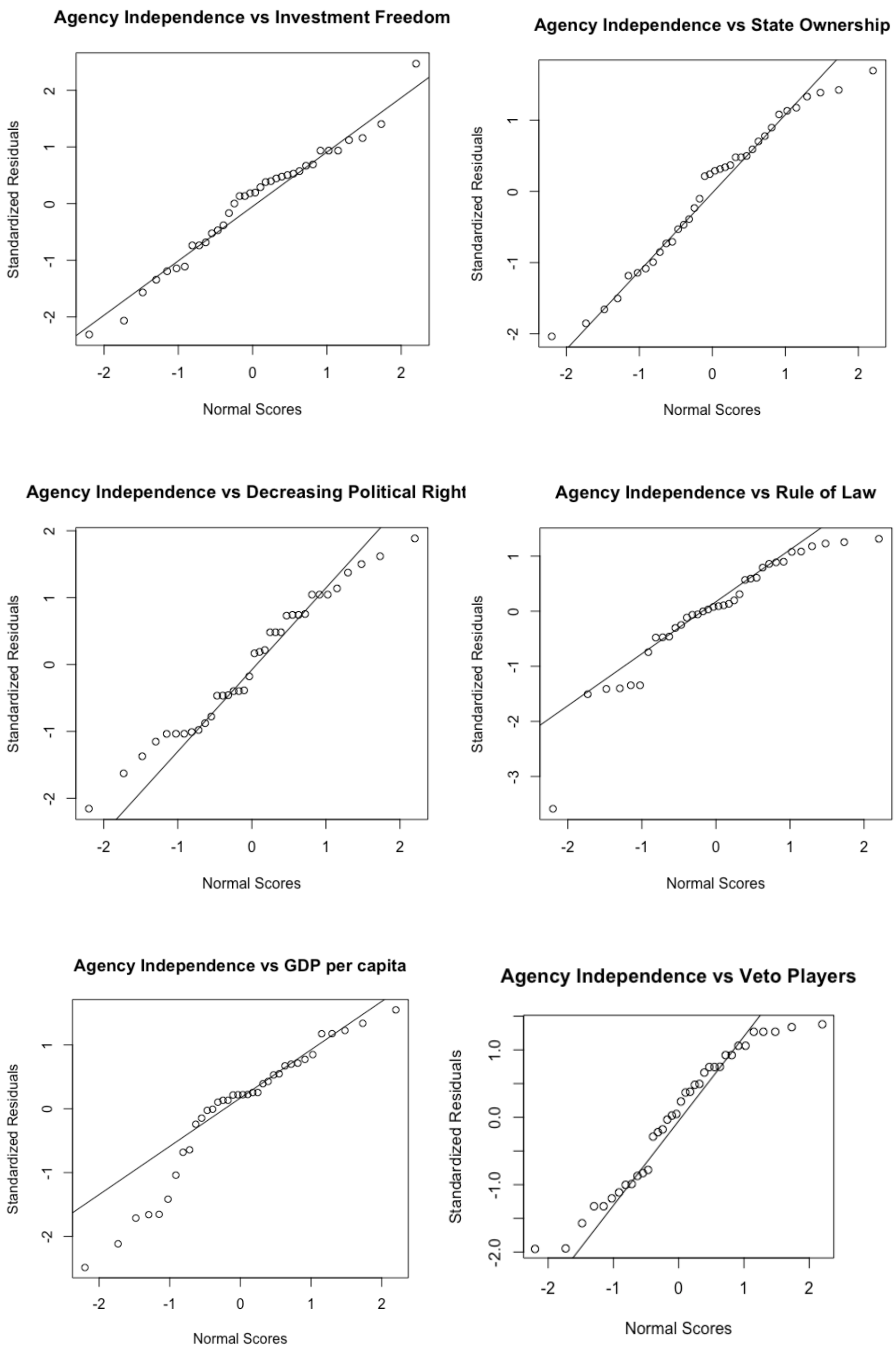
The first plot shows that as freedom of investment increases, regulatory independence increases. Therefore, these two variables are positively correlated. The second plot demonstrates that there is a negative correlation between the independence and state ownership. The third plot displays a negative correlation between independence of regulatory agencies and decreasing political rights, meaning that as the freedom in political rights increases, regulatory independence improves. Rule of law also has a positive correlation with regulatory independence level whereas no linear relationship is observed with GDP per capita of countries and number of veto players.

Graph 2: Plots



Graph 3 reveals the standardized residuals of the five quantitative independent variables via the dependent variable.

Graph 3: Standardized Residuals



Considering the standardized residuals, rule of law and GDP per capita does not show a clear regression line with the level of agency independence.

The analysis observes form of government and veto players separately to avoid a correlation between the two independent variables. The same concern applies for political rights and level of democracy variables and therefore they are included in different models.

The result of the models is shown in Table 3. The equation of these models are;

$y_{1=}$ 0.26417x_1 – 0.20196x_2 – 0.99184x_3 – 0.9.86612x_4 + 0.34198x_5 + 4.08718x_6 + 67.83554

y_2= 0.31422x_1-0.20022x_2-8.69316x_3-19.65496x_4+1.38359x_5-5.76627x_6+88.41320

y_3 =0.45085x_1-0.14332x_2+0.14621x_3+0.613551x_4-6.07671x_5+0.48632x_{6+} 61.71851

Note that variables which increase formal independence should have a positive sign whereas variables that decrease regulatory independence should have a negative sign.

Table 3: Regression Results[15]

	Model (1)	Model (2)	Model (3)
Intercept	67.83554 ** (0.00416)	88.41320 *** (0.000154)	61.71851 *** (0.000458)
Investment freedom	0.26417 (0.16721)	0.31422 . (0.070853)	0.45085 * (0.011347)
State ownership	-0.20196 * (0.02613)	-0.20022 * (0.017020)	-0.14332 . (0.088631)
Regime type 2 (Parliamentary)	-0.99184 (0.93766)	-8.69316 (0.440947)	
Regime type 3 (Presidential)	-9.86612 (0.45055)	-19.65496 . (0.089847)	
GDP per capita	0.34198 (0.57230)	-0.06110 (0.906737)	0.14621 (0.795065)
Rule of Law	4.08718 (0.48413)	1.38359 (0.793111)	0.61351 (0.912713)
Decreasing Political Rights		-5.76627 *** (0.000634)	-6.07671 ** (0.001011)
Democracy Category 2 (Not Free)	-25.96667 ** (0.00447)		
Democracy Category 3 (Partly Free)	-3.63159 (0.63389)		
Veto Players			0.48632 (0.802055)
Observations	*36*	*36*	*36*
Multiple R-squared	*0.7565*	*0.7796*	*0.7393*
Adjusted R-squared	*0.6843*	*0.7245*	*0.6853*
Residual standard error	*13.9 on 28 degrees of freedom*		

[15] Significance at 0.1 level.

This sample, thus, provides enough evidence to reject the null hypotheses H01, H04a, H04b and H05a and H06, but not the null hypothesis H02, H03 and H05b. Multiple R-squared=0.7796 in Model 2 means that %77.96 of the variability is explained by the model. Therefore, Model 2 has the most explanatory power among others.

4.2 Multivariate Results and Discussion

Level of Economic Development (GDP per capita)

Gdp per capita as an indicator of economic development level is insufficient in explaining the levels of agency independence. It did not present a positive or negative impact on the agency independence in this sample, failing to accept the hypothesis (H4). Jordana and Ramió (2010) have demonstrated that developing economies in general are less independent than their pairs in advanced economies. Gual (2005) and Jalilian et al. (2007) also observed that there is a high correlation between regulatory quality and GDP per capita. The results of the statistical analysis of this thesis, however, show that level of economic development cannot explain the delegation of authority to IRAs.

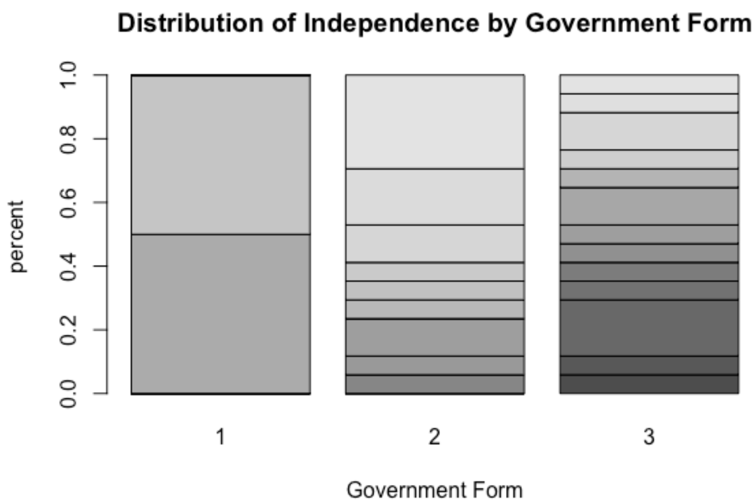
The countries with the highest GDP per capita in the sample are Slovenia, Slovakia, Lithuania, Latvia, Poland, Hungary, Croatia, Russia, Kazakhstan, Malaysia, Lebanon and Turkey. Among those, Russia, Kazakhstan and Malaysia present very low rates of agency independence. In addition, one of the countries from the sample with a very low GDP per capita rate, Georgia, has granted greater independence to its telecommunications regulatory agency, GNCC, than many countries with higher levels of gross domestic product per capita.

Form of Government

The results show that compared to mixed and parliamentary regimes, countries with presidential regimes in developing economies delegate less authority to IRAs. Presidential form of government displays a negative association with 19.65 decrease in agency independence (H5) when compared to mixed and parliamentary form. As Gerring et. al (2009) spotted that presidentialism demonstrates lower telecommunications infrastructure and lower investment ratings, it also demonstrates lower levels of regulatory independence for a sample of middle income economies.

Graph 4 below reveals distribution of the levels of independence by the form of government.

Graph 4: Agency Independence and Form of Government



1: mixed government
2: parliamentary government
3: presidential government

Graph 4 demonstrates that presidential form of government has the most variation in itself in terms of agency independence. Parliamentary regimes incorporate autonomous agencies operating independent from the government more than presidential regimes. Turkmenistan, Tajikistan, Egypt, Kazakhstan and Azerbaijan have presidentialism as their form of government and they have lowest formal agency independence scores in the sample. It is, however, important to note that presidentialism solely cannot explain the behavior. Other presidential regimes from the sample, for instance, as Lithuania (with 95 out of 100, 100 being the full independence), Georgia (with 90), Poland (with 80) and Moldova (with 80) showed a rather higher rates of agency independence.

Number of Veto Players

The results fail to confirm hypothesis H5b that countries with more veto players grant more independence regulatory agencies. In fact, the results show no negative or positive statistically significant impact of the number of veto players on regulatory independence.

In the literature, scholars studying advanced economies suggested that less veto players brings more independence to IRAs (Gilardi 2002) whereas other scholars focusing on Latin American countries observed the opposite (Jordana and Ramio, 2010). This thesis can agree with neither; looking at the results that number of veto players have no impact on regulatory independence in middle-income economies.

Political Rights and Democracy

The results of the empirical analysis confirm the hypothesis (H2) that freedom in political rights adds considerable explanatory power to the analysis of IRA autonomy. Political rights in the country turned out to be the most significant predictor of formal independence with 0.000634 significance in the model. As the score on political rights (due to electoral process, political pluralism and functioning government) decreases one unit, the level of regulatory independence decreases by 5.76627 units. Where countries grant more freedom in political rights, there is a higher agency independence. Absence of political rights is prompt by severe government oppression and sometimes by lack of functioning central government, thus observably leading to less agency independence. Turkmenistan, Tajikistan, Egypt, Kazakhstan and Azerbaijan appear to have the least agency independence scores from the sample and they have been given the least political rights freedom ratings although Egypt and Kazakhstan are slightly better (with 6 out of 7, 7 being the least free). Obviously, the impact of other variables must also be considered when looking at single countries.

Confirming the statistical significance of political rights freedom, state of freedom in democracy -whether free, partly free or not free- was substantial in the expected direction in Model 1 with 0.00447 significance. Lower levels of freedom in democracy decreases regulatory independence by 25.96 units when compared to democracies with more freedom. Partly free democracies, on the other hand, compared to free ones, decreased regulatory independence by 3.63159 units although it did not come out to be significant in the model. Democracies with less freedom display features of state paternalism or political clientelism (Hallin and Mancini, 2004) more than free democracies. Therefore, IRAs are relatively more prevalent in countries with greater level of freedom due to delegation of power without political interference.

The extant literature has not observed the relationship between freedom in political rights in a country and regulatory independence. However, Maggetti (2010:3) has drawn attention to the fact that independent regulatory agencies are considered institutions as protectors of pre-established "basic principles" from the risk of an arbitrary use of power by political decision makers. In countries where freedom in political rights is restricted, thus, arbitrary use of power is more expected, allowing for interference to regulatory decisions as well.

State Ownership

Market structure variable (H3) –remaining state ownership in the fixed line operator- was significant in the expected direction with 0.017020 significance. One percent increase in remaining state ownership decreases regulatory independence by 0.20022 units. Privatization is the transfer of control of ownership of economic resources from the public sector to private sector. State ownership in the market therefore demonstrates that the widespread trend of privatization in the infrastructure industries have not yet been adopted or completed. As Levi-Faur (2005) observed, the process of privatization and the diffusion of regulatory authorities around the world have coincided in the late 1990s and 2000s. Yet, after 2000, the diffusion pace of regulatory agencies has passed the pace of privatization. Although Levi-Faur spotted this trend in terms of an existence of separate regulators, the trend is confirmed in the level of agency independence as well. Countries whose regulators have lower levels of independence show higher levels of state ownership in the fixed line operator. Turkmenistan, Azerbaijan, Malaysia, Serbia, Lebanon and Moldova are the countries whose fixed operators are still state-owned.

Moldovan telecommunications agency, ANRCETI, stands as an interesting case due to its high levels of agency independence even though the telecommunications market did not complete the liberalization process. Liberalization means elimination of state control over economic activities. Even though the market entered into liberalization phase in 2004, the incumbent operator, Moldtelecom, still retains a large market share (97.0%). Moldtelecom was a state company but in 1999, it was reorganized and became a joint-stock company with the state being the unique stockholder[16]. ANRCETI's high levels of formal independence is also important in the sense that it was founded on 2008 after the reorganization of former regulatory agency, ANRTI, which was the first regulatory telecommunications authority in the post-Soviet space. Nevertheless, ANRCETI is acknowledged as determined to promote liberalization policies and fair competition (ITU, 2012).

Investment Freedom

I hypothesized that (H1) countries with more open market economies (through investment freedom) grant greater degrees of independence to their regulatory agencies. Economic freedom variable- investment freedom- shows a positive correlation with the agency independence, confirming this hypothesis (with 0.07 significance). Most countries have a variety of restrictions on investment. Some have different rules for foreign and domestic investment, some restrict access to foreign exchange and in some, certain industries are close to foreign investment (Heritage Foundation, 2015). It, expectedly, correlates with agency independence as an objective of the IRAs is to promote competition. If a country behaves in a way to restrict foreign or domestic investment in telecommunications industry, it tends to delegate less autonomy to its telecommunications regulatory agency due to diminishing competences of the agency when there is less competition and investment.

Estonia, Latvia, Lithuania, Armenia and Georgia are the countries with the highest levels of investment freedom. Except Armenia, these are also the countries with highly independent agencies. Armenian telecom regulator, PSRC, has relatively low levels of agency independence, compared to aforementioned four other countries with high levels of investment freedom. The main legal basis for telecommunications regulation in Armenia is the Law on Electronic Communications, adopted in 2005. PSRC's autonomy has been

[16]Available at http://www.moldtelecom.md/common/PDF/PDF_content/Rapoarte_Anuale/Raport_anual_2008_ru.pdf

affected by the ambiguous legislation, which did not set clear mechanisms for funding and budget (EBRD, 2012). Its regulatory independence is therefore low compared to its pairs.

Investment freedom brings further opportunities of competition to the respective market, telecommunications in our case. Countries that are determined to bring further investment freedom delegate more autonomy to IRAs.

Rule of Law

Although rule of law has been displayed as positively correlated with agency independence (see Graph 1), it did not reveal a significant explanatory power in the model, when interacted with other variables (H6). Studies of agency independence in advanced economies acknowledged that rule of law is a significant determinant of agency independence (see Hanretty and Koop, 2013). When observed for middle-income economies, however, it did not demonstrate a statistical significance in explaining regulatory independence. Correlation between rule of law and political rights does not reveal a statistically significance, eliminating the possibility of an interaction between two variables. In fact, it does not correlate highly with any of the independent variables. In middle-income economies, therefore, freedom in political rights explains level of agency independence more than the measure of rule of law.

All in all, the results of the statistical analysis have shown that countries with greater levels of regulatory independence are positively associated with the degree to which countries grant freedom in political rights and investment. The level of democracy also increases the degrees of independence. The effect of state ownership in the market is consistent with the findings of the previous studies on advanced economies (see Levi-Faur, 2005). Countries whose telecommunications markets are dominated by state ownership are less prone to incorporate greater degrees of regulatory independence. Further, compared to mixed and parliamentary regimes, countries with presidential regimes in developing economies delegate less authority to IRAs. Contrary to findings of the studies on advanced economies, income level, rule of law and the number of veto players do not show a statistically significant impact on regulatory independence.

Chapter 5.
Cross- Temporal Variation in Regulatory Independence

5.1 Introduction

As far as independence is concerned, although scholars and international institutions promote the establishment of independent regulators, there is less discussion of whether independence is sustainable or how to make it sustainable. The previous chapter has shown that greater levels of agency independence depend on the market structure and the political and economic setting of each country. Political and economic setting, however, do change in time and may affect the mechanisms of formal independence. Even though cross-national examination contributes to the literature by exhibiting the patterns of regulatory independence, it cannot explain why regulatory independence shrinks over time in some countries even though an initial mandate has invested in its sustainability.

The legal and regulatory framework of telecommunications market has experienced significant changes after the midst of 1990s due to rapid development of digital technologies and internet. Technological developments have influenced the traditional telecommunications markets by replacing the state owned monopolized services with competitive supply of fixed and mobile services. The pace of liberalization at which the telecommunications markets have been transformed has varied across countries. Each country has made a progress in the transition from monopolistic to competitive markets adopting new legal and regulatory frameworks. Many of them have created independent regulators in this market to catch up with complex technical and technological developments and to deal with increasing competition in the market. The EU in the ENP countries has pushed for regulatory reform through ENP Association Agreements and series of action plans, for them to apply the EU regulatory framework.

Guidi (2015), looking at all the EU member states, observes that there has been a general increase in formal independence over time and that cross-country variation has been decreasing. In other countries, however, a weakening of the formal independence has been observed. Among those, many have committed to internationally perceived-best practices of agency independence, following mainly the EU regulatory framework and WTO principles. Why, then, have some governments chosen to undermine regulatory independence over time even though they have previously invested in the establishment of these independent agencies? This chapter explores the mechanisms of change in formal independence and its economic and political determinants. It explains briefly why the initial functional approach remains insufficient in explaining the behavior of governments which undermine formal independence. It then discusses aspects of change in formal independence by generating a theoretical foundation and presents examples from several countries and elaborates the methodology, case selection and data collection processes.

After this discussion, the chapter qualitatively explores cross-temporal change in agency independence by combining formal and informal aspects of it in Egypt, Jordan, Morocco and Tunisia. It looks into economic, political and market-based challenges faced in those countries and sees how it relates to formal independence mechanisms case by case. After, it discusses and compares the formal change in regulatory independence of four countries by focusing on the variation in explanatory factors. Chapter 6 brings the examination of quantitative cross-national and qualitative cross-temporal regulatory independence scholarship together to comprehensively understand the reasons behind variation, before concluding.

Findings of this chapter reveal that regulatory independence cannot be preserved as once and for all. Governments may undermine not only de facto, but also formal independence of agencies over time through means of budget control, dispossession of competences and autonomy loss in decision making. Evidence from Egypt, Morocco and Tunisia suggests political uncertainties have led these countries' governments to take control of the market and its regulation by undermining agency independence both in de facto and de jure terms. Jordan presents a different case than the other three countries because despite of the fact that the country has gone through political challenges, Jordan's economy, telecommunications market and the TRC (its telecoms regulator) have been resilient.

5.2 Delegation of Authority and Change in Independence

This section relates the discussion of delegation of authority to the change in regulatory independence over time and evaluates its insights.

While there are multiple causes for regulatory delegation by the government to IRAs, one of the most prevalent theoretical explanations appear to be the need to establish credible policy regimes by limiting political interference in regulatory matters (Gilardi, 2002; Majone, 1996, 1997). Scholars who have employed this approach presumed that governments would not undermine the independence of regulatory agencies, because they will depend on fire alarms[17] and other oversight mechanisms. This point of view, however, does not provide insights regarding a formal change in legislation, or appointment and budget control mechanisms over time, resulting in a decrease in agency independence. Politicians who do not agree with regulatory decisions of an independent agency can in reality pass a law to make the agency less independent, breaking the initial delegation. McCubbins, Noll and Weingast (1989) have speculated that politicians cannot depend on a new legislation to undermine agency autonomy because that behavior damages the original coalition, i.e. the coalition that established the initial directive; meaning that there will be no majority to pass a law projected to correct agency behavior. They conclude, therefore, that threats of new legislation are useless. Their conclusion, nevertheless, does not account for the fact that in some countries, the independence of the regulatory agencies is undermined over time due to new legislation and newly enforced control mechanisms such as the initiation of state funded

[17] Affected third parties such as interest groups and media monitor the agency and ask for political action when necessary (Lupia and McCubbins 1998).

agency budgets or the dispossession of some of the tasks of the agency.

In the literature, it has been demonstrated that in areas in which the need for credible policy arrangements are particularly evident (such as utilities regulation), formal agency independence is higher (Gilardi, 2008). In some countries, however, regulatory agencies have been created through political processes and under political considerations (Moe, 1990). Political uncertainty, for example, may give incentives to politicians to isolate policies by delegating them to formally independent agencies (Gilardi,2005, 2008; Wonka and Rittberger, 2010). At the same time, however, politicians may try to direct policies to what they perceive as the best for political salience through several control mechanisms, and these may eventually undermine the independence of those regulatory agencies. During the period of widespread diffusion of regulatory agencies, many countries have adapted them to catch up with global trends in the market and in public governance. Some governments have embraced the concept of formal agency independence much less enthusiastically than others. (Bianculli et al., 2013). This is one of the reasons why a diversion from the formal agency independence model has taken place over time.

The effect of time has been referred to as progressive and positive in the literature due to the "learning effect" (Baudrier, 2001). Some countries, of course, have developed regulatory independence further over time, learning from their own and other countries' experiences. Other countries, however, did not follow a linear or positive path in the degree of regulatory independence. Many regulatory agencies in middle income countries, across time, have either lost or gained autonomy from their affiliated ministry, incumbent legislature and elected politicians. Formal independence mechanisms have been changed by governments. This temporal change has occurred due to organizational, political and economic experiences. Although functional explanations have been excellent in elucidating the delegation of authority in the first place, it appears inadequate in understanding these temporal differentiations. This is why cross-temporal differences in regulatory independence need further scholarly examination considering that some countries have undermined regulatory independence over time, disregarding their initial efforts to form them.

The next section discusses aspects of formal independence by generating a theoretical foundation and presents examples from several countries.

5.3 Autonomy and Government Control

The reform of the information and communication technology sector has led to major changes at the regulatory and institutional levels. One of the most striking changes has occurred through the rise of the telecommunications regulatory agencies operating separately from affiliated ministries.

Thatcher (2002) defined that for an agency to be an IRA, it must keep its own powers and responsibilities given under public law; must be organizationally separate from ministries and must neither be elected nor managed by elected officials. Gilardi identifies agencies that enjoy high independence more specifically. They are typically characterized by a long term of office for the heads and board members and an appointment procedure in which technical skills are highlighted. Dismissal procedures of the agencies with high independence are designed so as to make dismissal due to political reasons almost impossible (2001:9). Moreover, according to Gilardi (2001), responsibilities to government and parliament such as an annual report makes agencies more independent. Lastly, having a budget by fees levied on the regulated industry rather than a state fund makes agencies freer in terms of the allocation of the staff and tasks.

Considering these principles of formal independence, many agencies, if not all, have been either established following these principles from the very beginning or accomplished them over time. There have been some agencies, however, which have lost their autonomy from affiliated ministries or incumbent legislation in time mainly through three mechanisms: (1) control in decision making, (2) budget control and (3) bereaving competences. These three mechanisms are examined below with theoretical foundation and supported with empirical examples from several countries.

One of the indicators of a loss of autonomy appeared to be the autonomy in decision making. A control mechanism that is widely emphasized in the literature is the power of political principals to appoint the agencies' head and management board members (Weingast and Moran, 1983; Weingast, 1984; Huber and Shipan, 2000). Through mechanisms of appointment and dismissal of the head and board of the regulatory body, autonomy in decision making might be captured by political figures in the government. Examples of formal autonomy loss in decision making have been observed in Egypt, Morocco and Tunisia, although Morocco was regained autonomy later on[18] (ITU ICT Eye, 2015).

Another indicator of autonomy loss is the control over budgets as an effective means of limiting agencies' discretion (Moe 1987; Huber and Shipan 2000). Budgets can be used as rewards and sanctions and thus structure the agencies' incentives. Countries whose governments have controlled the regulatory budget of the telecoms regulator for some time include Azerbaijan, Kyrgyzstan, Lebanon, Namibia, Poland, Serbia, Slovakia, South Africa and Ukraine. The budget of the regulatory authority is still financed by a state-fund in Azerbaijan, Estonia, Lebanon, Poland, Slovakia, South Africa and Ukraine[19].

Last but not the least, reducing and distributing the competences that have been once delegated to the agencies is a way to shrink regulatory independence. Examples of this can be seen in Poland, Romania, Serbia and Macedonia after 2012. Yet other countries' telecommunications regulators have been assigned with further competences over time (in Armenia, Egypt, Malaysia, Moldova and Namibia).

Why, then, have some governments undermined formal independence over time even though there had been times when their agencies were regarded as more independent? Were political instabilities and economic crisis relevant in the downshift of formal independence? This research aims at understanding answers to these matters by focusing on the telecommunications regulatory agencies of Egypt, Jordan, Morocco and Tunisia.

[18] These cases are examined in detail in the case study section.
[19] Among 36 countries in the Chapter 3.

5.4 Data Collection and Case Selection

This chapter examines cross-temporal change in agency independence combining formal and informal aspects of independence. It brings formal independence data from ITU ICT Eye together with de facto independence data from European Neighborhood Policy (ENP) Progress Reports. It then explores the impact of political uncertainty, economic instability and commitment to EU regulatory directive on agency independence. It collects data on formal agency independence from 2006 to 2015 from ITU ICT Eye Regulatory Information Data Search for Egypt, Jordan, Morocco, Tunisia. It gathers data on de facto regulatory practices in these four countries from ENP Progress Reports from 2006 to 2015.

This research looks into eight indicators to represent formal agency independence: (1) the regulator's autonomy in decision making, (2) the regulator's enforcement power, (3) the authority approving regulatory decisions, (4) the authority approving the budget of the regulator, (5) the reporting requirements of the regulator, (6) the sanctions and penalties imposed by the regulator, (7) the source of the budget and percentage financed from each source and (8) ultimate authority able to overturn regulatory decisions. ITU ICT Eye has started collecting information on all of these eight indicators in 2006. Therefore, the regulatory independence data has been collected for ten years from 2006 to 2015.

Among other developing economies from the sample of the previous chapter, this chapter chooses to examine cross-temporal independence in Egypt, Jordan, Morocco and Tunisia. Three main criteria stand behind the selection of these four countries: (1) they are all ENP-South countries who have initiated an Action Plan with the EU, (2) they are all middle income economies, and (3) at least ten years have passed since their separate telecommunications regulatory agencies have been created. These three criteria are explained in detail below.

First of all, these four countries are ENP-South countries. They have signed an Association Agreement with the EU under the ENP (ENP, 2015). The EU offers financial assistance to these countries as long as they meet the conditions of government reform, economic reform and other issues approximating a positive transformation. One of the areas about which the EU expects reform and makes financial support is electronic communication policy and regulation. To that end, IRAs in the telecommunications are promoted to achieve a comprehensive regulatory framework and politically independent regulation (ENP, 2015). Therefore, all four countries have shown an official commitment (signing an Association Agreement) to reform telecommunications sector in line with what is perceived as the best practice in the EU.

Secondly, all four countries' telecommunications IRAs were created at least ten years ago; which makes it possible to examine the cross-temporal formal change in the agency independence. The year of the separate IRA creation for Egypt, Jordan, Morocco and Tunisia are respectively 2003, 1995, 1997, and 2001. As this research starts the examination from 2006, all four countries' agencies, by then, set up their formal mechanisms to observe systematic changes in the agency independence and delegation of authority to them are complete.

Although it is an ENP-South country who has signed an Action Plan with the EU, I do not include Lebanon and its telecom agency in this research because it was separately created in 2007 and this research examines independence from the year 2006 on.

The third reason for the case selection is the income levels. Egypt, Jordan, Morocco and Tunisia have similar levels of economic development, measured by income per capita. Their current GDP per capita's (PPP) for 2015 are respectively $10,891, $10.880, $7,821 and $11,397 (WDI, 2016). Although Israel and Palestine have also signed an Association Agreement and initiated Action Plans with the EU, the income level of Israel ($35,431) stands too high, whereas Palestine's ($5,009) is too low compared to the other four countries. The reason to control for the per capita GDP is to show cross-temporal change at similar economic growth levels.

In the next section, four countries' (Egypt, Jordan, Morocco, and Tunisia) regulatory bodies are examined in detail to understand the dynamics behind the cross-temporal change in agency independence. The previous chapter has measured agency independence in 2014 for 36 countries. Considering that political rights and investment freedom were significant in explaining regulatory independence, the same variables are employed here to see if they are sufficient in explaining the change in the formal independence over time.

Table 4 below shows the measured independence levels of Egypt, Jordan, Morocco and Tunisia, the year that these levels have changed and the aspect of the change.

Table 4: Change in Independence

Country	Year of Formal Change in Independence	Which aspect of independence has changed?	Formal Independence in 2014 (over 1)
Egypt (NTRA)	2013	Autonomy in decision making	0.2
Jordan (TRC)	2008	Budget control	0.6
Morocco (ANRT)	2006, 2008	Autonomy in decision making, Competences	0.6
Tunisia (INT)	2011, 2012	Autonomy in decision making, Competences	0.5

Source: ITU ICT Eye (2016)

5.5 Egypt

The National Telecom Regulatory Authority (NTRA) of Egypt was established in accordance with the provisions of Telecom Regulation Law No. 10/ 2003 as the national authority competent to regulate and administer the telecommunications sector. According to ITU ICT Eye (2016), from 2006 to 2012, NTRA has protected its formal autonomy in decision making. By 2013, however, the agency had lost its decision making autonomy formally and proceeded as such during 2014 and 2015.

In 2008, an ENP Progress Report acknowledged that Egypt will strengthen the capacity of the NTRA through a twinning project with a regulator from an EU Member State in order to strengthen the TRC's regulatory capacities. Experts from German and Italian regulators for telecoms visited Egypt in 2008, to approximate Egyptian regulations with the EU framework (Progress Report, 2009:6). In 2009, NTRA continued to align its regulatory framework with the EU's; by improving licensing, competition and regulation of interconnections (Progress Report, 2010:6). The impact of the 2009 financial crisis, however, was observed in the sector when the procedure to grant a second fixed license was postponed. No new developments have occurred in the following year regarding the introduction of a second fixed telephony license and therefore the market remained as a monopoly (Progress Report, 2011). Nevertheless, NTRA and its affiliated ministry appeared rather committed to regulatory reforms until the political environment has rapidly changed in 2012.

Clearly, the progress in the telecommunications sector and the autonomy granted to the NTRA remained linked to the political situation- the Arab Spring. In 2012, especially, ENP stated that the progress in regulatory reform had ceased in Egypt (Progress Report, 2012:6). It also (2013:6) reported that Vodafone Egypt and other network operators were instructed in January 2011 to suspend services in selected areas. Moreover, the internet was suspended for around a week and mobile communications for two days. Most network operators complied with government instructions. In addition to the political situation, the international financial crisis had affected the telecommunications market. For example, plans to liberalize the fixed line market have been postponed due to the international financial crisis. In an environment of crisis both economically and politically, the Egyptian NTRA could not preserve its formal independence (ITU ICT Eye, 2013). The approval of the Sector Minister for regulatory decisions became formally obligatory and NTRA stopped reporting to the Prime Minister and only reported to the Sector Minister starting from 2013 (ITU, 2013).

Although political rights turned out to be the most significant predictor of agency independence in this thesis, looking at the time-series freedom in political rights in Egypt reveals that the year that the score on political rights slightly improved (Freedom House, 2013) is the year that the NTRA lost its formal autonomy in decision making (ITU ICT Eye, 2013). Due to a state of emergency, the government centralized control of the telecommunications market in its hands. Another significant explanatory variable of the agency independence, investment freedom, appears to be confirmed when cross-temporal change is observed. Autonomy loss of the agency and freedom loss in investment coincided in the same year. In 2013, the level of investment freedom was reduced by the Heritage Foundation (2013) to 50 (over 100), although it had been recorded as 65 in the previous year.

Loss of autonomy of the Egyptian NTRA in 2013 has concurred in the same year when political change occurred and freedom in economy was lost. Political and economic change and uncertainties affected the regulatory independence because the government centralized the control of the telecommunications in its hands in this state of emergency.

5.6 Jordan

The Telecommunications Regulatory Commission (TRC) of Jordan was established as a financially and administratively independent jurisdictional body through the Telecommunications Law No 13 of 1995 and is subsequent amending law No.8 of 2002. It is one of the oldest regulatory bodies in Jordan. The primary function of the TRC is to regulate the telecommunications and information technology service sectors, as well as the postal sector according to the Postal Law No 34 of 2007 in Jordan.

The TRC has been reported as independent in decision making since 2006 (ITU, 2016). No formal change has occurred in its independence in terms of its budget fund, reporting requirements and competences. From 2006 to 2015, it had the obligation to report to the Prime Minister; its competences were monetary fines, license suspension, license revocation and some other additional obligations pursuant to separate regulations; and its budget was financed by license fees (55.8%), spectrum fees (42.6%) and regulatory fees (fines and penalties 0.10%).

The TRC has requested progress in its de facto independence in the last ten years. In March 2009, for example, when the Director General of the TRC resigned, he justified his decision with reference to TRC's lack of independence and political interference (The Arap Daily, 13.03.1999). Changes in the constitution in 2011, resulting in a loss of recognition for independent authorities, affected the sector and have been implemented directly without amending the telecommunications law. TRC has advised that amendments are being developed to the primary law that are expected to align the law with EU framework requirements with respect to a range of issues including making TRC more independent and improving general governance and authority (EBRD, 2012). The TRC's Board of Commissioners and the current chairman, Ghazi Salem Al-Jobor (appointed in June 2015), are appointed by a resolution from the Council of Ministers based on a nomination from the prime minister[20].

Jordan has adopted a new national strategy for the development of the ICT covering the years 2007-2011. This strategy was based on four pillars: investment and regulation, research and development, labor and education, and connectivity. In 2008, the TRC was engaged in a number of decisions aimed to increase competition in the telecommunications sector. These decisions included the introduction of carrier selection for fixed telephony and of dispute resolution procedures in 2007 as well as the creation of a universal service fund in 2008 (Progress Report, 2008). In 2009, the TRC proceeded to increase the competition in the market by publishing a tender for a license to provide 3G (Third Generation Mobile Services); authorizing the provision of mobile virtual network operator services; and issuing a public consultation on local loop unbundling (Progress Report, 2009). In 2010 and 2011, the TRC and the Ministry of Information Technology and Communications (MoICT) continued to implement information society policies in cooperation. A request from the TRC to introduce a fourth mobile operator in December 2012 was rejected by Zain and Jordan Telecom[21]. No new providers have been introduced after then and the three companies have a comparable share of the market (Freedom House, 2015)[22].

The TRC has adopted its Strategic Plan 2010-2013 in which one of the main objectives is to ensure effective regulations and fair competition in the ICT sectors. A twinning project

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[20] TRC, Telecommunication Law No. (13) of 1995, January 10, 1995, pg 18, accessed June 26,2013,http://bit.ly/1KWfNtT.
[21] Ghazzal, Mohammad, "Orange Jordan Opposes TRC Plan," The Jordan Times, December 15, 2012, accessed April 30, 2013 http://bit.ly/1ECBaO5.
[22] Mai Barakat, "Jordan will be challenging, but a fourth operator might find elbow room as a mobile broadband provider," Ovum, February 21, 2013, http://bit.ly/1JBMhUg.

supported by the EU named "Institutional Strengthening of the Telecommunications Regulatory Commission in Jordan" started in September 2011 (Progress Report, 2012). For 2012-2016, a new National Information and Communication Technology Strategy was prepared with the EU maintenance. Further steps were taken to reinforce the independence and administrative capacity of the TRC. In February 2014, the TRC chaired and hosted the assembly meeting of the Euro-Mediterranean Regulators Group (EMERG) (Progress Report, 2015).

Jordan's level on the freedom of political rights has decreased from 5 to 6 in 2009 (Freedom House, 2009), coinciding with the chairman's resignation due to political inference in March 2009. Its score has not changed since then. Investment freedom, however, has had a gradual increase starting from 2006. While it was measured as 50 over 100 in 2006, it increased to 70 in 2011 and remained as such in the following years[23] (Heritage, 2015). Jordan has been ranked 39th globally and 4th regionally on the 2014 Index of Economic Freedom, witnessing a decline in its international standing but maintaining the same level regionally compared to 2013's index. Heritage Foundation report (2014) on Jordan economy wrote: "Despite the region's ongoing political and security challenges, Jordan's economy has been resilient. The economy has benefited from earlier years' reform agenda in the areas of privatization". The same trend has been observed in the regulatory reform of the telecommunications sector. It has pushed for a competitive sector both in the nation and the region.

Jordanian government, when faced with political challenges, did not centralized the control of telecommunications market as the Egyptian government did. Its preservation of regulatory independence over years corresponds to its higher levels of economic freedom among other countries. Further, commitment to reform the regulatory framework in line with the EU practice was much more observable in Jordan[24] than in other three countries.

[23] World average is 50.7
[24] In ENP Progress Reports.

5.7 Morocco

The National Agency for the Regulation of Telecommunications (ANRT) was created in 1998 to regulate and liberalize the telecommunications sector as an independent government body. ANRT in the founding law was nominated to favor the competition among operators and to create an efficient regulation for the operators[25]. EBRD (2012) dates the liberalization of the telecom sector as 2006, although the attempts have started in 1997 and re-launched unsuccessfully in 2002. In 2006, two new fixed licenses were awarded. The appointment of the regulatory head and board of ANRT is realized by a royal decree (Dahir), causing criticisms for lack of agency independence, according to Freedom in the Net report of Freedom House (2013). ANRT's board of directors is made up of government ministers; therefore, dismissal of the regulatory head and board by the King of Morocco is possible (Freedom House, 2015). Clear criteria and conditions for appointment and dismissal based on technocratic knowledge are missing.

The agency has been reported by ITU ICT Eye as autonomous in decision making in 2006- the year that the market has gone through reforms and liberalization. However, its status has been changed to non-autonomous in 2007, and back to autonomous in 2008 till the present day. ITU has not reported any coverage on the reason of this autonomy loss in 2007. The reason might be that the restructuring phrase had affected the institutional and interpersonal dynamics of the agency, leading to political interference.

According to ENP Progress Report (2006), since 2005, the ANRT is committed to enforce competition in electronic communications and market liberalization. There were three operators on the fixed telephony market; and three licenses for 3G mobile communications were allocated in October 2006. 2007 ENP Progress Report emphasizes that the success of the liberalization of the market is evidenced by the growth in both figures in all segments, i.e. fixed telephony, mobile telephony and the Internet. In addition, the regulatory framework

[25] Lois régissant la poste et les télécommunications (Laws governing the post and telecommunications), available online athttp://www.anrt.ma/fr/admin/download/upload/file_fr1825.pdf

of the ANRT continued to advance in 2007, for example through the introduction of number portability.

Maroc Telecom, Medi Telecom, and INWI are the three internet service providers (ISPs) and mobile phone companies in Morocco. In the context of liberalization of the sector, Moroccan government in 2009 sold some of its shares in Maroc Telecom, former state monopoly (Progress Report, 2008). In the same year, the ANRT granted licenses for Medi Telecom and INWI. In 2010, Maroc Telecom signed an agreement with the ANRT for the COVENANT (access to telecommunication) program to cover access to rural areas and invest in these provinces.

The Arab Spring, Freedom House reports (2013), has changed the government behavior of intervention to delete or block online content. In the environment of post-Arab Spring, government wants to show its efforts to implement democratic reforms. Many websites that were previously blocked such as YouTube and Facebook are opened to access. It applies for regulatory reform as well. (ENP Progress Report, 2014). In 2012, the government adopted a ten-year national plan to develop ultra-fast broadband connections and assigned ANRT in charge of the implementation of the plan. ENP Progress Report in 2014 acknowledged that Morocco is rather advanced in terms of connectivity, equipment and uses. In early 2014 it planned to launch a tender for granting 4G licenses. All three companies have submitted applications for 4G mobile phone licenses, following the call for tenders from the ANRT.

The score of Morocco on political rights has not changed in these years under examination (2006-2015) except for an increase in 2014 from the score 6 to 3. Investment freedom, according to Heritage Foundation, has decreased from 70 to 60 in 2008 and remained as such in the following two years. In 2011 it has slightly improved (to 65) and in 2013 it has measured as 70 (over 100). No significant impact of investment freedom and political rights has been observed in relation to agency independence over years. Nevertheless, political change has affected the behavior of the government positively regarding the initiations of regulatory reforms.

5.8 Tunisia

The National Instance of Telecommunication (INT) was created in 2001 through Law No 1/2001 (15.01.2001) as the regulator for all telecom and internet-related activities and has the responsibility of resolving technical issues and disputes between actors. The INT board and the head of the board are nominated by the ICT minister and come mainly from government ministries and agencies, which causes a decrease in its formal independence. ITU ICT Eye (2016) reported the INT as autonomous in decision making every year since 2006 except 2011. In late 2011, the Management Council of the INT has started to approve its budget which can be seen as a positive improvement. EBRD (2012) reported that Law 1/2001 and other decrees that comprise the sector framework overlaps and conflicts, creating confusion about some issues. In addition, some functions, such as licensing and spectrum administration, that are typically assigned to a regulatory agency in other countries are implemented in Tunisia by the Ministry of ICT. Freedom House in the Net (2015) reported that the INT has introduced new licensing regulations and continues to take steps to ensure greater transparency and accountability. Currently, the INT can issue monetary fines and suspend licenses and its budget is made up of numbering fees by 100%. ENP Progress Report (2006) advised that Tunisia should complete its regulatory framework for electronic communications and consolidate the INT.

Starting from 2007, Tunisia planned opening up the telephony market and awarding a third mobile license to liberalize markets, promote competition and encourage investment. ENP Progress Report in 2007, nevertheless, recognized that the regulatory framework remains incomplete and the independence of the regulator must be strengthened. Tunisia has passed legislation that allows the full liberalization of the fixed market in 2009 (EBRD, 2012). 2009 was highlighted by the EU as the year of efforts by the Tunisian government to reform the sectors of ICT and information society. A law has been passed to revise the code of communications for an up-to-date regulatory framework (Progress Report, 2009). Yet, the state-controlled Tunisie Télécom maintains a monopoly over the country's fixed market and domestic internet backbone**.** However, there is competition in the mobile sector with three mobile operators. In May 2010, the entry of a third operator, Orange Tunisie has modified the existing duopoly of Tunisie Telecom and Orascom in seven years. Although the liberalization has led to competition for mobile operators and internet, the state still held shares in the three main operators by year 2011 (Progress Report, 2012).

The main suppliers of internet service are Tunisie Télécom, Ooredoo Tunisie, and Orange Tunisie. The state controls a 65 % stake in Tunisie Télécom. Ooredoo Tunisie is owned by the state of Qatar and Orange Tunisie has been controlled by the Tunisian state since 2011. In 2015, Tunisie Telecom remained as the sole manager of the country's 10,000 km internet backbone covering the territory and it has the authorization to resell domestic ISPs which gives Tunisie Telecom an oversized role in the country's internet governance (Freedom House in the Net, 2015).

The level of freedom in political rights in Tunisia has seen an unsteady trend. In 2006 and 2007, it was measured as 6 (over 7). From 2008 till 2012, it had reached to the least free condition: 7. During that period, regulatory independence of the Tunisian INT was undermined formally and informally through means of autonomy loss in decision making. In 2012, its political rights rating has increased to 3, coinciding with the year of regulatory reform initiations. Also, investment freedom stayed very low compared to the country's pairs in the region. It slightly improved from 30 to 35 in 2010 but has not changed ever since.

In 2015, Tunisia's political rights rating improved from 3 to 1 and its status improved from Partly Free to Free "due to the adoption of a progressive constitution, governance improvements under a consensus-based caretaker administration, and the holding of free and fair parliamentary and presidential elections, all with a high degree of transparency" (Freedom House, 2015). A reflection of the current political environment in the level of regulatory independence cannot be observed formally yet.

5.9 Comparison and Discussion

A closer look at regulatory independence in Egypt, Jordan, Morocco and Tunisia over time (from 2006 to 2015) has confirmed that formal independence cannot be preserved as once and for all. Governments who were willing to delegate authority to independent regulators may undermine not only de facto, but also formal independence of agencies over time through means of budget control, dispossession of competences and autonomy loss in decision making. Although McCubbins, Noll and Weingast (1989) have anticipated that the threats of new legislation to undermine agency autonomy are useless because it damages the original coalition establishing initial directive of the agency, empirical evidence has shown that changes in the legislation to undermine agency independence *occurs* when political and economic stakes are high. Their conclusion, therefore, does not account especially for the instances in Egypt, Morocco and Tunisia and to some extent in Jordan.

<u>Formal Independence and Political Change.</u>

Even though Gilardi (2005), looking at European countries, observed that regulators tend to be more independent in countries where political uncertainties are high, evidence from ENP-South countries suggests the opposite[26]. Political uncertainties have led these countries' governments to take control of the market and its regulation by undermining agency independence both in de facto and de jure terms.

Telecommunications sector holds political stakes involved due to (1) privatization of the numerous state-owned telecommunications operators, (2) liberalization of the fixed and mobile telecom markets and opening up the market to competition, (3) extensive growth of internet, mobile and wireless services and (4) development of international trade in telecommunications services. Waves of political change affect the market as well as the governance of the sectors. When political change has swept through the Arab world, it had an impact on the bureaucracy and the institutions governing the market whose operation affects the interests of the actors in the government. The governments of the region have

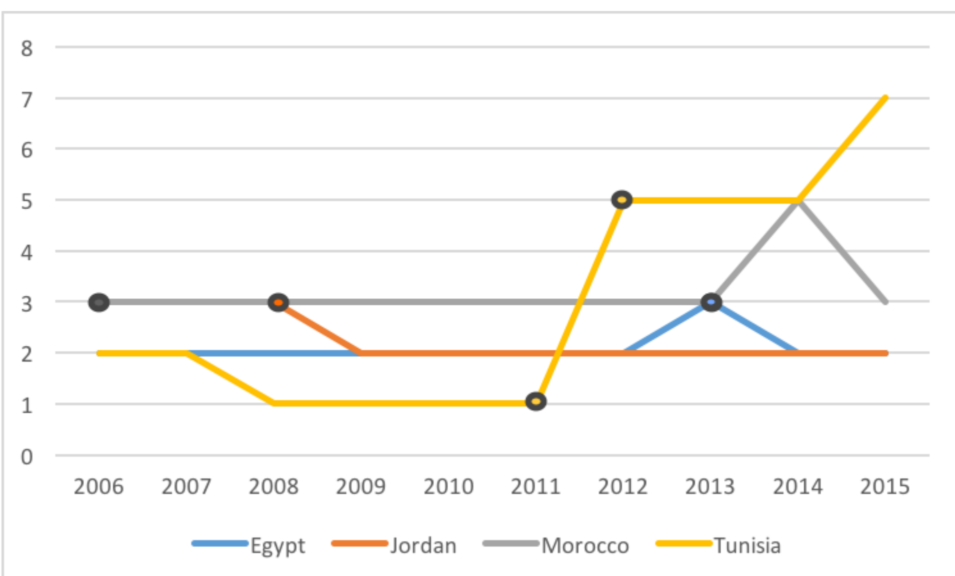
[26] This conclusion cannot be generalized for all middle-income countries though.

centralized economic and political powers as well as the bureaucratic rule. The impact of the Arab spring and political change has been observed in the independence of the INT, Tunisian telecoms regulator. Political instabilities in Egypt had a negative impact on the independence of the NTRA, resulting in loss of autonomy in decision making. Morocco has pushed efforts in regulatory independence in the post-Arab spring environment yet undermined it in 2011. Jordan presents a different case than the other three countries because despite of the fact that the country has gone through political challenges, Jordan's economy, telecommunications market and the TRC (its telecoms regulator) have been resilient.

The behavior towards regulatory independence coincided with the governments' response to political change. Countries that take measures to suppress political change (like Egypt) had undermined formal independence more than countries that try to keep on the right side of the change (like Morocco).

Ratings of freedom in political rights for 2006-2015 have been presented in the Graph 5 below. Spots show the year of regulatory change respective to the countries.

Graph 5: Political Rights Freedom in Years



Source: Freedom House (2015)

Graph 5 illustrates that a negative political change in Egypt and its IRA's autonomy loss have coincided in 2014. After its regulatory authority's autonomy loss in 2011, Tunisia's efforts to reform regulatory framework have also coincided with a positive change in political rights in 2012. No impact of political change has been observed for Morocco. In Jordan, on the other hand, although political rights freedom decreases in 2008, it has not affected the government behavior towards regulatory independence negatively. Economic indicators explain more for regulatory independence in Jordan than political ones.

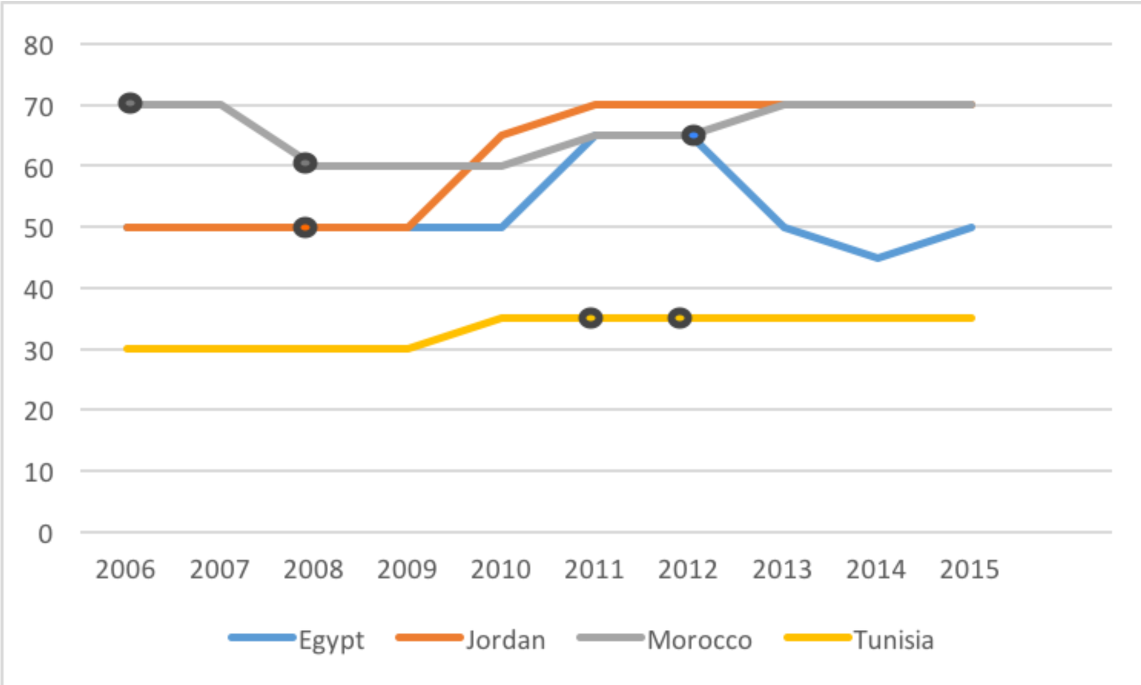
Formal Independence, Market and Economic Freedom.

Levi-Faur (2003) suggests that in industries that require long term investment, independent agencies offer a stable investment climate and predictable rules. Greater levels of economic freedom, therefore, is a predictor of agency independence showing the enthusiasm of governments towards the establishment of regulatory agencies. It does, however, changes over time following the uncertainties faced by the government economically and politically.

To varying degrees, all of the four economies are negatively affected by the global slowdown (EBRD, 2012). Yet, in terms of economic freedom**,** there is a legal basis for new entrance in all telecommunications markets of the four countries. During the last ten years, they all have passed legislation allowing the full liberalization of the sector, most recently in Tunisia in 2009. In practice, however, state interest remains in dominant fixed network incumbent operators.

Levels of investment freedom in the years 1995-2016 are presented for Egypt, Jordan, Morocco and Tunisia below in Graph 6. Plots represent the year of change in regulatory independence.

Graph 6: Investment Freedom in Years

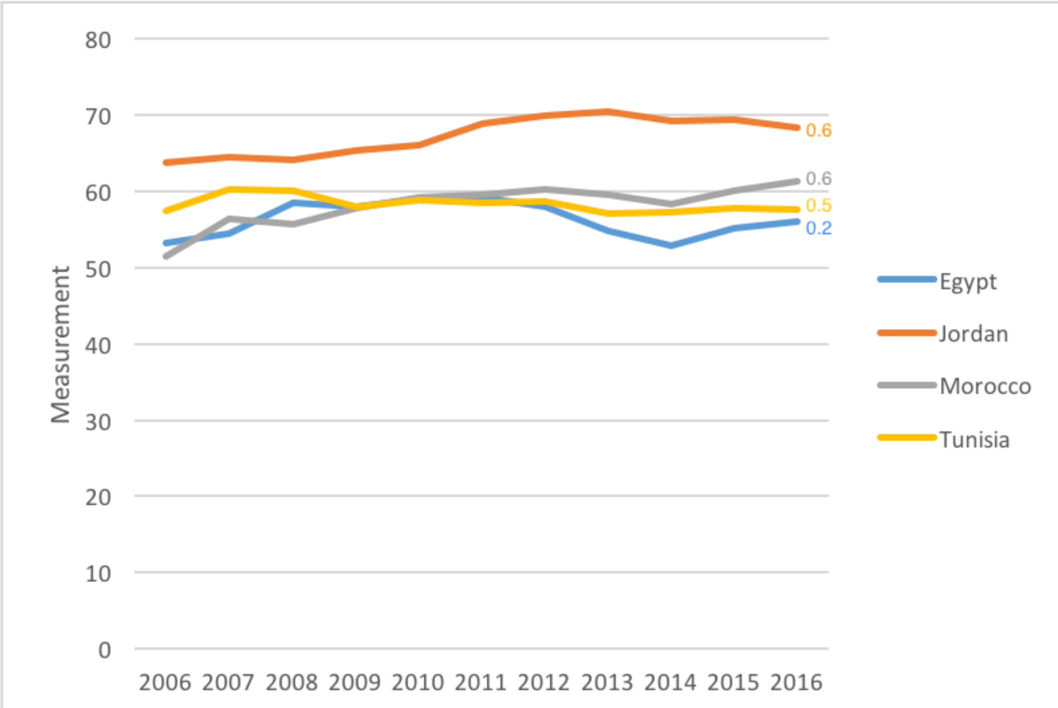


Source: Heritage Foundation (2015)

The level of investment freedom sharply decreases for Egypt in 2012, coinciding with the year of the autonomy loss of its IRA. When Morocco regained its autonomy in decision making in 2008, its investment freedom also has been stabilized for three years. No correlation of investment freedom and regulatory independence in years has been observed for Tunisia and Jordan.

Graph 7 below demonstrates the change in the levels of economic freedom in the last ten years. Numbers next to lines show the measured levels of regulatory independence. In the years under examination, from 2006 to 2015, economic freedom slightly improved in 2008 and merged at the same level for Egypt, Tunisia and Morocco in 2009 and 2010. After, it worsened for Egypt while remained unchanged for Tunisia and Morocco. Jordan, on the other hand, has taken a different tack in terms of economic freedom with a rating of “Mostly Free”.

Graph 7: Levels of Economic Freedom in Years*



*Numbers next to lines represent measured levels of agency independence in 2014.
Source: Heritage Foundation

Graph 7 illustrates that countries' relative levels of economic freedom also corresponds to their rankings in terms of agency independence. The correlation between economic freedom and agency independence, thus, is confirmed cross-temporally for these four selected countries. Egypt, as the country with lowest level of regulatory independence (0.2) among others, shows the lowest level of economic freedom as well.

Jordan is the only country among others that did not initiate a change in the formal independence of the agency. Jordan's higher scores compared to other three countries in terms of economic freedom coincided with its higher levels of agency independence vis-a-vis others. Especially after 2010, when the TRC has adopted a new national strategy for ICT development and aimed institutional strengthening of the agency; and economic freedom as well was in a positive path. Morocco follows Jordan in the levels of economic freedom, and the two countries' measured level of formal independence is identical (0.6). Tunisia is ranked third among four countries regarding both the economic freedom and regulatory independence.

Formal Independence and the EU Regulatory Directive.

The EU regulatory framework includes good practices in the area of ex-ante regulation when applied specifically to relevant electronic communications markets (EBRD, 2012). In all four countries, the EU has pushed for regulatory reform through ENP Association Agreement and series of action plans, for them to apply the EU regulatory framework. One of the requirements of the EU directive was regulatory independence for an effective and credible regulation. Commitment to European regulatory framework directive, for all four countries, appeared highly auxiliary in this phase. Looking at the ENP Progress Reports, Jordan, among others, appear as the most committed to regulatory reform. Its stability in terms of regulatory independence as well confirms that dedications matters on the government behavior to not undermine autonomy of IRAs.

Nevertheless, some governments have intervened with the regulatory decisions even though the initial mandate of delegation advices the opposite. The irreversibility of the reforms, therefore, are in question. Political and economic instabilities surely affect the government behavior towards regulatory independence. Even though all four countries were willing to work on regulatory reform and liberalization of the market when they first created their IRAs, especially Egypt, and to some extent Morocco and Tunisia, could not risk regulatory decisions that are politically independent of the government partly due to the importance of those decisions to the daily politics and partly to economic stability. Their governments have broken initial formal agency independence to have discretion over policy making even though it would make it more difficult to credibly bind themselves in the future.

Although it is not possible to generalize the experiences of the four countries to all developing economies, formal change in regulatory independence have occurred in other middle income economies as well. South Africa and Mongolia, for example, present successful cases in terms of an increase in the independence of their telecommunications agency. South African telecommunications regulatory authority, ICASA, gained autonomy in decision making in 2014; whereas Mongolian telecoms regulator CRC was granted with enforcement power in 2008. Ukrainian regulator NKZI, on the other hand, lost its enforcement power in 2010 and regained it in 2011. The change in NKZI's enforcement power caused by a series global recession that its economy has gone through and increase in presidential influence over the judiciary and governmental institutions (see Freedom House: Ukraine, 2011).

A significant predictor of the loss of regulatory autonomy appears to be the reporting requirements, budget financing and competences. Countries committed to a regulatory reform have dropped the obligation to report to Sector Minister, such as Mongolia and South Africa, whereas countries with governments in demand of regulatory control have obligated annual reports to sector ministry, such as Montenegro in 2013. Serbian (2011) and Polish (2013) governments have used budget control as a way to monitor their regulatory agencies, whereas Romania and Poland in 2014 preferred reducing the competencies of the agency from license suspension/revocation to monetary fines solely. Political and economic instabilities cause decrease in formal agency independence by dispossessing decision making autonomy of the agency as in the cases of Egypt, Kyrgyzstan and Morocco.

All in all, empirical analysis has shown that regulatory independence might not be preserved as once and for all in some countries, as governments may use formal mechanisms to undermine regulatory independence even though they have initially mandated autonomy to those agencies and invested in their foundation. Four countries under examination have varied in their responses to political change and this variation coincided with the change in agency independence. Political interference benefited more than blame-shifting and credible future promises to some countries in the face of political and economic uncertainties as happened in Egypt and Tunisia when widespread political change happened. Commitment to EU regulatory framework played a role to *not fully* undermine regulatory independence in the case of Morocco and especially Jordan. Even though Moroccan and Tunisian regulators have gone through changes in formal mechanisms such as budget control, appointment and competencies, these governments did not fully undermine their formal agency independence. Moreover, the governments' behavior towards freedom in economy have coincided with their behavior towards agency independence. In Jordan, especially, even though the country's rating of political rights is low compared to others (except Egypt), its openness towards economic freedom covaried with delegation towards regulatory independence.

Chapter 6.
Conclusion

6.1 Findings

This thesis presented results based on quantitative cross-national analysis of regulatory independence for 36 countries' agencies and qualitative cross-temporal analysis of agency independence for 4 countries' (Egypt, Jordan, Morocco, Tunisia) agencies in the past 10 years. It examined formal independence mechanisms to measure the level of independence and focused on middle-income countries.

It overviewed main theoretical and empirical theories on independent regulatory agencies. In the theoretical part, it introduced normative and functional approaches along with contextual factors to delegation of authority and discussed their contribution to cross-national and cross-temporal research. It built a theoretical foundation on the variation in the regulatory independence based on three cluster of determinants: economic development, political system and market structure.

The statistical analysis on the variations in formal independence revealed significant cross-national differences. This thesis has confirmed that countries with greater levels of regulatory independence are positively associated with the degree to which they have freedom in political rights and investment. Cross-national analysis from middle income countries has shown that formal regulatory independence is determined by the democracy level, meaning that the more countries are democratic, the more they grant independence to their regulatory agencies in legal terms. The effect of state ownership in the market is consistent with the previous literature on advanced economies. Countries with telecommunications markets that are led by state ownership are less prone to grant greater degrees of formal independence. It occurs mostly due to the simultaneous progress on privatization of the sector and creation of independent regulatory agencies. Countries that are less enthusiastic about the privatization of the sector tended to grant less independence to their regulatory agencies afterwards, considering that one of the missions of these IRAs was to promote competition in the market.

Income level (GDP per capita) does not show an impact on the independence of the regulatory agencies. It is, therefore, not possible to claim that economic development brings regulatory independence. It is, however, possible to argue that countries with markets that are more open to investment tend to grant more levels of regulatory independence. Investment necessitates credibility and predictability which are the features that IRAs offer through their independence. In Jordan, for example, even though the country's rating of political rights is low compared to others, its openness towards economic freedom covaried with its delegation behavior towards regulatory independence.

In addition, countries with presidential form of government, compared to the mixed and parliamentary forms, grant lower levels of agency independence in the telecom sector. The most likely explanation is the changing behavior on delegation of power in those three forms of government.

Cross-temporal analysis, looking at four countries' formal independence mechanisms from 2006 to 2016, has confirmed that formal independence cannot be preserved as once and for all. Governments who were willing to delegate authority to independent regulators may undermine not only de facto, but also formal independence of agencies over time through means of budget control, dispossession of competences and autonomy loss in decision making. Political change, economic freedom and commitment to EU regulatory directive have been identified in this thesis as three determinants of the change in agency independence in time. Political uncertainties might lead countries' governments to take control of the market and its regulation by undermining agency independence both in de facto and de jure terms. Countries' relative levels of economic freedom also corresponds to their ranking in terms of agency independence. Moreover, commitment to EU regulatory framework plays a role in governments' behavior to preserve formal independence mechanisms.

By bringing cross-national and cross-temporal results together, this thesis contributes to the existing literature by demonstrating variation in regulatory independence across nations and across time. The contribution also speaks to the previous research and states the importance of domestic factors in the study of regulatory independence. Determinants of this variation are identified for middle income countries as differences in levels of democracy, openness towards investment, market structure and form of government. This thesis finds a link between democratic freedom and variation in formal independence of national telecom regulators. It also accounts for the relationship between the form of government and regulatory independence. Compared to parliamentary and mixed forms of governments, presidential regimes tend to delegate less authority to IRAs. Additionally, the structure of the market and investment freedom is confirmed to demonstrate an explanatory potential in regulatory independence; in contrast to the framework of income level, which is proven to have a weak explanatory potential for middle income countries. It also finds, thanks to the merits of cross-temporal analysis, that although the democracy level has the most explanatory power in explaining the cross-national variation in regulatory independence, it remains rather insufficient to explain cross-temporal differences within countries themselves (e.g. Jordan). Responses to political and economic shocks and uncertainties explain the cross-temporal differences in formal independence of IRAs as occurred in Egypt, Morocco and to some extent Tunisia. Future research might measure regulatory independence by year and come up with a comprehensive research by integrating cross-national and cross-temporal dimensions.

6.2 Limitations

This thesis has several limitations, the most important of which are due to data constraints. To conduct a study by considering the timing of the data collection for different countries, it relies on the data available at the ITU ICT Eye. In the quantitative section, it has only added the data in which its collection dates to 2014. Thus, many middle income countries' agencies were removed from the research to have a systematical and consistent dataset. In response to this challenge, the data gathered on the institutional design of the telecom regulators reflects the situation at December 2014. Changes in the legislative framework that have occurred since December 2014 are not reflected in the dataset and were excluded from the quantitative analysis. In the qualitative part, the data was collected for ten years between 2006-2015 thanks to small number of indicators and observations.

Longitudinal data tracing the evolution over time in formal independence is available only through ITU ICT Eye for regulatory agencies. It includes, however, missing data for many years and many agencies. Therefore, this thesis could only observe four countries' agencies by integrating the time dimension. Due to the small number of observations, this thesis employed a qualitative method to observe this dimension. Future research might integrate time dimension in the comparison of the formal independence for a large number of observations.

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Appendix A:

Formal Independence of Independent Regulatory Agencies: independence index

Status of the agency head	*Weight*	*Coding*
	0.20	
Term of office		
• over 8 years	1.00	
• 6 to 8 years	0.80	
• 5 years	0.60	
• 4 years	0.40	
• fixed term under 4 years or at the discretion of the appointer	0.20	
• no fixed term	0.00	
Who appoints the agency head?		
•the members of the management board	1.00	
•a complex mix of the parliament and the government	0.75	
•the parliament	0.50	
•the government collectively	0.25	
•one or two ministers	0.00	
Dismissal		
•dismissal is impossible	1.00	
•dismissal is possible, but only for reasons not related to policy	0.67	
•there are no specific provisions for dismissal	0.33	
•dismissal is possible at the appointer‘s discretion	0.00	
May the agency head hold other offices in government?		
•no	1.00	
•only with the permission of the government	0.50	
•yes / no specific provisions	0.00	
Is the appointment renewable?		

•no	1.00	
•yes, once	0.50	
•yes, more than once	0.00	
Is independence a formal requirement for the appointment		
•yes	1.00	
•no	0.00	

Status of the management board	*Weight*	*Coding*
	0.20	
Term of office		
• over 8 years	1.00	
• 6 to 8 years	0.80	
• 5 years	0.60	
• 4 years	0.40	
• fixed term under 4 years or at the discretion of the appointer	0.20	
• no fixed term	0.00	
Who appoints the member of the board?		
•the members of the management board	1.00	
•a complex mix of the parliament and the government	0.75	
•the parliament	0.50	
•the government collectively	0.25	
•one or two ministers	0.00	
Dismissal		
•dismissal is impossible	1.00	
•dismissal is possible, but only for reasons not related to policy	0.67	
•there are no specific provisions for dismissal	0.33	
•dismissal is possible at the appointer‘s discretion	0.00	
May the members of the board hold other offices in		

government?

•no	1.00
•only with the permission of the government	0.50
•yes / no specific provisions	0.00

Is the appointment renewable?

•no	1.00
•yes, once	0.50
•yes, more than once	0.00

Relationship with government and parliament	*Weight*	*Coding*
	0.20	

Is the independence of the agency formally stated?

• yes	1.00
• no	0.00

What are the formal obligations of the agency vis-à-vis the government?

• there are no formal obligations	1.00
• presentation of an annual report for information only	0.67
• presentation of an annual report that must be approved	0.33
• the agency is fully accountable to the government	0.00

What are the formal obligations of the agency vis-à-vis the parliament?

• there are no formal obligations	1.00
• presentation of an annual report for information only	0.67
• presentation of an annual report that must be approved	0.33
• the agency is fully accountable to the parliament	0.00

Which body, other than a court, can overturn the decisions of the agency where the latter has exclusive competence?

• no body	1.00
• a specialised body	0.67
• the government, with qualifications	0.33
• the government, unconditionally	0.00

Financial and Organizational Autonomy	*Weight*	*Coding*
	0.20	
What is the source of the agency‘s budget?		
• fees levied on the regulated industry	1.00	
• both the government and fees levied on the regulated industry	0.50	
• the government	0.00	
How is the budget controlled?		
• by the agency	1.00	
• by the accounting office or court	0.67	
• by both the agency and the government	0.33	
• by the government only	0.00	
Which body decides on the agency‘s internal organization?		
• the agency	1.00	
• both the agency and the government	0.50	
• the government	0.00	
Which body is in charge of the agency‘s personnel policy (hiring and firing staff, deciding on its allocation and composition)?		
• the agency	1.00	
• both the agency and the government	0.50	
• the government	0.00	

Regulatory Competences	*Weight*	*Coding*
	0.20	
• the agency only	1.00	
• the agency and another independent authority	0.75	
• the agency and the parliament	0.50	

• the agency and the government	0.25
• the agency has only consultative competencies	0.00

Adopted from Gilardi (2002)

Appendix B:

LIST OF COUNTRIES

Albania

Armenia

Azerbaijan

Bosnia and Herzegovina

Bulgaria

Croatia

Egypt

Estonia

Georgia

Hungary

Jordan

Kazakhstan

Kyrgyz Republic

Latvia

Lebanon

Lithuania

Macedonia

Malaysia

Moldova

Mongolia

Montenegro

Morocco

Namibia

Poland

Romania

Russia

Serbia

Slovak Republic

Slovenia

South Africa

Tajikistan

Thailand

Tunisia

Turkey

Turkmenistan

Ukraine