The relationship between economic freedom, political freedom and economic growth.

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Abstract

The research aims to investigate the relationship between economic freedom, political freedom and economic growth. The Arab Spring placed renewed interest on the topic of freedom, yet current economic conditions seemingly contradicted the established theory. The largest free economies were being outperformed by those with less political and economic freedom.

Three objectives were specified to answer the research question. The first objective aimed to determine the association between economic freedom, political freedom and economic growth, for which Spearman's correlation was used. The second objective aimed to investigate causal relationships between the variables, for which Granger's causality was employed. The third objective aimed to examine complex relationships between the variables, for which vector autoregression was used.

Economic growth was weakly correlated with the independent variables. Civil liberties, political rights and economic freedom, however, had strong correlations with each other. Economic freedom and economic growth had bi-directional Granger-causality. Political rights Granger-caused economic freedom whilst civil liberties Granger-caused political rights and economic freedom. Using vector autoregression, the model consisting of economic growth, economic freedom and civil liberties had the greatest explanatory power towards economic growth. Existing theory therefore remains valid: political freedom enhances economic freedom, which, in turn, enhances economic growth.

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Keywords

Political Freedom, Economic Freedom, Economic Growth, Spearman's Rank-order Correlation, Vector Autoregression, Granger-causality

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Andre Liebenberg Date

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List of Abbreviations

AIC	Akaike Information Criterion
BRICS	Brazil, Russia, India, China and South Africa
CIVET	Colombia, Indonesia, Vietnam, Egypt and Turkey
CL	Civil Liberties
EFI	Economic Freedom Index
GDP	Gross Domestic Product
HPI	Happy Planet Index
PCA	Principle Component Analysis
PFI	Political Freedom Index
PR	Political Rights
SBC	Schwartz Bayesian Criterion
VAR	Vector Autoregression

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1. Definition of Problem and Purpose

1.1 Research Title

The relationship between economic freedom, political freedom and economic growth.

1.2 Introduction: Research Problem

When Mohamed Bouazizi committed suicide by way of public self-immolation in December 2010, he set in motion a series of events throughout the Middle East and North Africa, now known as the Arab Spring (Fassin, 2011). Bouazizi, a street vendor, was driven to commit suicide by the frequent confiscations of his wares by the Tunisian police (Fassin, 2011), denying him economic freedom, specifically freedom from corruption and protection of private property (Miller *et al.*, 2012).

Freedom is not a modern concept. Even the Israelites yearned for their freedom and for their own land when they were oppressed by the Egyptians (Jeyaraj, 2008). The *Declaration of Independence* in 1776 continued this theme with the United States wresting their freedom from Britain (Newman , 2008).

Mankind's understanding of the concept of freedom became more sophisticated with distinctions made between various types of freedom: media freedom (Whitten-Woodring, 2009); freedom of expression (Whitten-Woodring, 2009); political freedom, consisting of political rights (PR) and civil liberties (CL) as defined by Freedom House (Puddington, 2012); and economic freedom (Miller *et al.*, 2012), to name only a few examples.

Adam Smith published his book *The Wealth of Nations* in 1776 – the same year as the *Declaration of Independence* (Grossack, 1976). According to Solomon (2010), Smith was a proponent of the free market system, with minimal political intervention apart from ensuring contracts, private property and common defence. Smith believed in the notion of spontaneous order (Solomon, 2010). Friedrich Hayek, most famous for his work *The Road to Serfdom*, which he published in 1944, argued against any deviations from the free market system (Solomon, 2010). He believed that any such deviations

would ultimately lead to “the tyranny and ‘serfdom’ of fascism and communism”, according to Solomon (2010, p. 134).

Karl Marx however held a strongly opposing view to Smith and Hayek. Marx saw a state of anarchy where Smith saw spontaneous order (Solomon, 2010). Murray (2010) stated that Marx held the view that capitalism leads to structural changes in the economy which causes increased unemployment rates. He considered this a too high social cost (Murray, 2010).

Solomon (2010) put forth that John Maynard Keynes was critical of the view that markets would self-correct. Though Keynes did not subscribe to Smith’s view, he did not follow Marx’s view either but rather believed in a managed capitalism (Solomon, 2010), a position somewhere between the two extremes. Joseph Stiglitz (2009a) supported Keynes’ view that government intervention is required in order to ensure sustained economic growth and long term stability, particularly during economic downturns.

Freedom is thus not a Boolean concept but could be viewed on a continuum. This is supported by Murray’s (2010, p. 422) statement that “Freedom is on a spectrum.” Freedom house publishes a Freedom in the World Report, which includes the political freedom index (PFI) for which they measure political freedom on a ranked scale in declining order of level of freedom as free, partly free and not free (Puddington, 2012). Similarly the Heritage Foundation ranks economic freedom in declining order of level of freedom as free, mostly free, moderately free, mostly unfree and repressed (Miller at al., 2012).

Several studies have shown a positive relationship between political freedom and economic freedom with economic growth (Aixala and Fabro, 2008; Vega-Gordillo and Álvarez-Arce’s, 2003). Despite the aforementioned studies that showed a positive relationship between political freedom and economic freedom with economic growth, current economic conditions seem to contradict these findings. Tradingeconomics.com (“Tradingeconomics”, n.d.) provides data on countries’ economic performance. It was remarkable that the top ten largest free economies were underperforming when comparing their gross domestic product growth to that of Brazil, Russia, India, China and South Africa (BRICS). There is a second group of countries that also outperformed the top ten free economies, namely Colombia, Indonesia, Vietnam, Egypt and Turkey (CIVET).

The top ten free economies include the USA, Japan, Germany, France, the UK, Italy, Canada, Spain, South Korea and Australia ("Tradingeconomics", n.d.). Table 1 indicates the consolidated information from the 2012 Economic Freedom Index (EFI) (Miller *et al.*, 2012), the 2012 Freedom in the World report (Puddington, 2012) and Tradingeconomics.com ("Tradingeconomics", n.d.) on the top ten largest free economies by Gross Domestic Product (GDP). These countries were all ranked as politically free in the 2012 Freedom in the World report (Puddington, 2012), with Australia ranked as economically free, six more as mostly free and the remaining three as moderately free in the 2012 Economic Freedom Index (Miller *et al.*, 2012). Despite the high levels of economic freedom and political freedom enjoyed by these countries, they are growing at less than 3.5% GDP per annum ("Tradingeconomics", n.d.).

Table 1: EFI, PFI and GDP Growth of the Top Ten Largest Free Economies.

Country	EFI	PFI	% GDP Growth
USA	Mostly Free	Free	1.6
Japan	Mostly Free	Free	-1.0
Germany	Mostly Free	Free	1.5
France	Moderately Free	Free	1.4
UK	Mostly Free	Free	0.8
Italy	Mostly Unfree	Free	-0.5
Canada	Mostly Free	Free	2.4
Spain	Moderately Free	Free	0.3
South Korea	Moderately Free	Free	3.4
Australia	Free	Free	2.1

Source: Adapted from Tradingeconomics.com; Miller *et al.* (2012); and Puddington (2012)

In contrast there are developing countries such as the BRICS group of countries (Brazil, Russia, India, China, and South Africa) and the CIVET countries (Colombia Indonesia, Vietnam, Egypt, and Turkey) that were growing at a combined average in excess of 5% GDP per annum ("Tradingeconomics", n.d.). Table 2 indicates the consolidated information from the 2012 Index of Economic Freedom (Miller *et al.*, 2012), the 2012 Freedom in the World report (Puddington, 2012) and Tradingeconomics.com ("Tradingeconomics", n.d.) on the BRICS and CIVET countries. Apart from Egypt (0.2%), Brazil (2.1%) and South Africa (3.1%), all of these economies were outperforming the previously mentioned free economies. What makes

this remarkable, is that of these countries four were not free, two partially free, and only four were politically free (Puddington, 2012). At the same time only three were economically wise moderately free, whilst the remaining seven were mostly unfree (Miller *et al.*, 2012).

Table 2: EFI, PFI and GDP Growth of the BRICS & CIVET countries.

Country	EFI	PFI	% GDP Growth
Brazil	Mostly Unfree	Free	2.1
Russia	Mostly Unfree	Not Free	4.8
India	Mostly Unfree	Free	6.9
China	Mostly Unfree	Not Free	8.9
South Africa	Moderately Free	Free	3.1
Colombia	Moderately Free	Partly Free	7.7
Indonesia	Mostly Unfree	Free	6.5
Vietnam	Mostly Unfree	Not Free	6.1
Egypt	Mostly Unfree	Not Free	0.2
Turkey	Moderately Free	Partly Free	8.2

Source: Adapted from Tradingeconomics.com; Miller *et al.* (2012); and Puddington (2012)

The existing theory seems open for questioning, as current economic conditions contradict earlier research findings. Countries with high levels of political freedom and economic freedom are not experiencing good economic growth, whilst countries that are politically and economically more repressed are experiencing good economic growth. Therefore the question is raised of what the nature of the relationships between the economic freedom, political freedom and economic growth are.

1.3 Research Aim and Purpose

This study aims to answer the question regarding the nature of the relationships between economic freedom, political freedom and economic growth. The study will achieve this goal by testing for the association and the relationship between economic freedom, political freedom and economic growth. The study will further test for the combination of factors that best explain economic growth. The following research objectives have been defined:

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Objective 1: Test for association between political freedom, economic freedom and economic growth.

Objective 2: Test for causality between political freedom, economic freedom and economic growth.

Objective 3: Examine the complex relationships between political freedom, economic freedom and economic growth.

2. Literature Review

This section explored the concept of freedom in greater detail by having reviewed the different market views that range from a free market approach to central control, with a balanced approach in between. The concepts of economic freedom and political freedom were further explored before past research on the relationship between these freedoms and economic growth was consulted.

2.1 Perspectives on Freedom

2.1.1 Free Market

"The only freedom that deserves the name, is that of pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs, or impede their efforts to attain it" Mill stated (as cited in Kitcher, 2010, p.858). The sentiment would have resonated with Adam Smith, who believed in a system of spontaneous order. According to Solomon (2010) Smith believed that this system would be driven by humans' natural self-seeking behaviour and that it would not require a controlling agent to regulate behaviour. Smith further stated that the economy could operate at its best without intervention from political authorities, although he acknowledged that the state needs to ensure contracts, private property and common defence (Solomon, 2010).

The belief in freedom was reinforced by Klein (2010, p. 82) who stated that "At the heart of any true liberal's thinking are two notions: the distinction between voluntary and coercive action, and the maxim that freer is better." Friedrich Hayek also supported Smith's spontaneous order through his argument that the price system is the only way to centralise diverse individual demand (Solomon, 2010).

2.1.2 Control

Karl Marx did not agree with Adam Smith's view of spontaneous order and saw an anarchic system that would tend towards crisis (Solomon, 2010). Solomon stated that Marx believed in a system of social organisation and shared wealth (2010). Wu (2006) supported this argument by writing that freedom is rejected in the psyche and culture

of the Chinese people because they perceive freedom as indulgence. Wu further stated that the Chinese people reject freedom because to them it represents arbitrariness – the Chinese leader Mao Zedong likened freedom to anarchy (Wu, 2006).

Fluxman (2009) wrote that Marx had a rationalist, Newtonian worldview. According to Megill (as cited in Fluxman, 2009) this shaped Marx's view that the universe functions according to a collection of laws, governing that each event is necessarily caused by a previous event. Megill (as cited in Fluxman, 2009) further cites this worldview as one of the main reasons why Marx rejected the market: the market contradicted Marx's rationalist view that relied on scientific explanation. Megill believed that Marx was critical of the market because of its perceived arbitrary nature, stating that Marx saw chance as the fundamental law of economics (as cited in Fluxman, 2009). Megill (as cited in Fluxman, 2009) writes that Marx intended to replace the market with an economic system that operated in a rational manner. He continued by stating that such a system would have to pre-plan all economic activity in order to ensure that transactions are regular, predictable and rational.

Carden and Hall (2010) strongly opposed Marx's viewpoint when they wrote that an absence of centralised planning does not mean that there is not any planning. They argued that planning is conducted through the pricing system and individual co-ordination in a decentralised manner. Adding to the opposing argument, Peláez (2009, p. 257) said "It is difficult to find a more effective way to sabotage economic progress than to limit peoples' ability to use their talents and skills to pursue their dreams, invent, innovate, think and act freely, dissent, inquire, and decide how much to spend and in what form, and how much to save and in what form."

2.1.3 Balance

John Maynard Keynes was critical of the unfettered economic approach that Smith was a proponent of, and opposed the notion that markets can correct itself (Solomon, 2010). Stiglitz (2009b, p. 293) wrote, "Bruce Greenwald and I, for instance, showed that the reason that Adam Smith's invisible hand often appeared invisible was that it was not actually there…" Stiglitz further lamented that despite proof of growth and poverty reduction through government participation in East Asian economies, the free market system is still supported. Stiglitz (2009a) wrote that the East Asian economic

success was largely due to what he described as a more balanced approach through government involvement in their institutions. He continued by stating that even the USA's initial success was due to government involvement in the various economic sectors.

Stiglitz and Keynes are not the only proponents of a balanced approach. Cao (2008) argued that competition is not always beneficial to the market. He listed a number of examples where over-supply to the industry led to the deterioration of that industry. Cao (2008) stated that there are conditions under which government intervention through policy are applicable, for example to implement policies that encourage entry into market when the market structure may become monopolistic, or to halt the implementation of these same policies if over-intensification of competition might occur. In both cases the purpose was to maintain healthy market competitive conditions. Cao (2008) warned however that these policies could potentially have a detrimental effect and that the cost of implementation has to be carefully considered.

Arup (2010) wrote that even after the financial crisis, governments are hesitant to implement coordinated regulation. He further stated that what restructuring is proposed by government is opposed by the industry. Arup (2010) believed that despite the naiveté of the notion, cultural changes should be made to enhance regulation of financial networks within the economy. He argued that cultural regulation is as much required as economic regulation in order to install restorative justice. This is in contrast with Adam Smith's view of self-regulating markets (Solomon, 2010).

2.2 Economic Freedom

Miller *et al.* (2012) stated that the Index of Economic Freedom is underpinned by three principles: the empowerment of individuals; non-discrimination; and open competition. It is based on these principles that economic freedom is defined by Miller *et al.* (2012) as consisting of ten economic freedoms: property rights, freedom from corruption, fiscal freedom, government spending, business freedom, labour freedom, monetary freedom, trade freedom, investment freedom, and financial freedom.

The ten economic freedoms had been grouped under four categories (Miller *et al.*, 2012). The first category is rule of law, consisting of property rights and freedom from corruption. The second category is limited government, which consists of fiscal

freedom and government spending. The third category, regulatory efficiency, refers to business freedom, labour freedom, and monetary freedom. The final category, open markets, consists of trade freedom, investment freedom, and financial freedom.

Each of the ten economic freedoms were weighted equally by the Heritage Foundation. These were each ranked on a scale of 0 to 100 with an increasing index score indicating an increasing level of freedom. The economic freedom index score is the average of the ten individual scores (Miller *et al.* 2012). A review of the ten economic freedoms follows.

2.2.1 Property Rights

A central motivator for workers and investors is being able to accumulate private property and wealth (Miller *et al.* 2012). Citizens gain confidence from secure property rights, which allows them to participate in entrepreneurial activities, to save and to invest.

Miller *et al.* (2012) wrote that property rights require a judicial system that is honest, effective, non-discriminatory, and that operates independently and transparently. They further stated that the enforcement of contracts is a key aspect of property rights protection.

2.2.2 Freedom from Corruption

The Heritage Foundation defined corruption as dishonesty or decay (Miller *et al.* 2012), where individuals gain personally at the expense of the whole. They continued to list bribery, extortion, nepotism, embezzlement, and graft as some of the most common instances of political corruption. Cebula (2013) stated that corruption allows public officials to steal or profit unlawfully from public funds. Cebula (2013) further stated that some forms of corruption interfere directly with the free market and individual freedoms.

Miller *et al.* (2012) put forth that transparency and openness in regulatory processes and procedures are needed to improve on freedom from corruption. They stated that openness allows for regulatory efficiency and equitable treatment.

2.2.3 Fiscal Freedom

Miller *et al.* (2012) stated that fiscal freedom relates to the extent to which the government allows individuals and businesses to keep and control the income that they created. This income is depleted through taxation as well as through incurring debt that ultimately has to be repaid through taxation.

Higher levels of taxation mean that there is a smaller real return for individuals and businesses. As the individual reward is decreased, so does the individual's willingness to enter the marketplace (Miller *et al.*, 2012).

Individual and corporate income tax are not the only tax burdens imposed by the government. Payroll and other indirect taxes, along with tariffs and value added tax, contribute to the burden. The total of all taxes as a percentage of GDP is used to measure fiscal freedom in the EFI (Miller *et al.*, 2012).

2.2.4 Government Spending

According to Miller *et al.* (2012) some government spending such as infrastructure, research and human capital improvements can be seen as investments. All government spending has to be funded, however, which brings about an opportunity cost equal to the foregone private consumption or investment.

Miller *et al.* (2012) stated that heavy spending by government brings fast economic growth but that it is ephemeral. Cebula (2013) added to this that government spending disrupts natural market processes, prices, and interest rates as it overstimulates demand.

The higher the index value for government spending, the greater the freedom from excessive government spending (Cebula, 2013). This means that there would be higher levels of economic activity.

2.2.5 Business Freedom

Miller *et al.* (2012) defined business freedom as the right for individuals to establish and run enterprises without state interference. Regulation that is burdensome, redundant and costly is the most common barrier to free entrepreneurial conduct. Cebula (2013) described such regulation as a form of taxation that hinders entrepreneurs from creating value through products and services.

Licensing a business is one of the most inhibiting regulations to entrepreneurs according to Miller *et al.* (2012). Once that hurdle is crossed, government interference could affect the decision making and price setting processes. Miller *et al.* (2012) further stated that inconsistent application of regulations impacts business negatively by shortening planning horizons due to the unpredictable business environment.

2.2.6 Labour Freedom

Miller *et al.* (2012) wrote that the labour market, as with a market for goods, is based on the principle of free and voluntary exchange. That implies that individuals should be able to work where, when and as much as they want. At the same time business should be able to contract labour freely and dismiss redundant workforce to ensure sustained economic growth.

Government regulations include such things as wage controls, and hiring and firing restrictions (Miller *et al.*, 2012). They further stated that labour unions form an important instrument in labour market regulation, which could either improve labour freedom or impede the efficient functioning of the labour market. A higher degree of labour freedom generally means a more efficient and productive economy according to Cebula (2013).

2.2.7 Monetary Freedom

Monetary freedom is manifested through stable currency and through market-governed prices (Miller *et al.*, 2012). Stable currency provides the means through which value is stored, measured and exchanged. Building capital and long term wealth without monetary freedom is arduous (Miller *et al.*, 2012).

Monetary freedom is a function of the country's monetary policy which affects its currency's value (Miller *et al.*, 2012). Greater confidence can be taken in investments, savings and long term plans when a country's monetary policy fights inflation, maintains price stability, and builds wealth.

2.2.8 Trade Freedom

An economy's receptiveness to international exchange of goods and services reflects its trade freedom (Miller *et al.*, 2012). Trade restrictions such as tariffs, import and export taxes, trade quotas, trade bans, and regulation, reduce trade freedom. Cebula (2013) concluded that greater trade freedom promotes the creation of wealth in the form of goods and services.

Miller *et al.* (2012) further stated that the disadvantage of trade barriers is two-fold. It firstly increases the prices that local consumers have to pay for foreign goods and services. Secondly it protects locally produced goods, which causes overproduction of local goods and promotes the production of products with no distinct competitive advantage. This tends to stifle economic growth and efficiency. An additional disadvantage of trade barriers is that advanced-technology products become unobtainable to local entrepreneurs, which limits economic development.

2.2.9 Investment Freedom

An economy with high levels of investment freedom promotes competition, innovation and entrepreneurship. It provides incentive for economic expansion, job creation, and increased productivity. Such an economic environment benefits the individual entrepreneurial companies as well as the society as a whole (Miller *et al.*, 2012).

Miller *et al.* (2012) wrote that transparency, equity, and support for all types and sizes of firms characterise a sound investment framework. Capital movement restrictions reduce productivity and distorts the economic decision making process. In contrast, where individuals and companies have the freedom to invest where and how they choose to, the greatest economic productivity is achieved as the capital flows to where there is need and where good return can be achieved. Controlling state action therefore limits the freedom of the investor and the investee according to Miller *et al.* (2012).

2.2.10 Financial Freedom

Cebula (2013) wrote that financial freedom is associated with the supervision countries impose on their banking and other financial institutions. Although this supervision is imposed in order to ensure the safety and stability of the financial system and to ensure conformity to the financial service industry's fiduciary responsibilities, excessive regulation restricts competition and increases the cost of entrepreneurial endeavours.

According to Miller *et al.* (2012) the market can self-regulate pricing and decision-making, provided that transparency and integrity of information can be ensured. Regulation that requires disclosure and independent auditing ensures the aforementioned requirements. Regulation that goes beyond these measures could impede efficiency, increase costs and limit competition.

2.3 Political Freedom

The Freedom in the World survey reports on political freedom in two broad categories, namely political rights and civil liberties (Puddington, 2012). Political rights consider factors such as the electoral process, political pluralism and participation, and the functioning of government. Civil liberties consider factors such as the freedom of expression and belief, associational and organisational rights, rule of law and personal autonomy and individual rights (Puddington, 2012).

Each country that is evaluated is assigned a rating for its political rights and civil liberties scores, based on scores achieved for its political rights and civil liberties checklists (Puddington, 2012). Ratings of 1 to 7 indicate a decreasing level of freedom. A rating of 1.0 to 2.5 earns a status of "free", whilst a rating of 3.0 to 5.0 earns a "partly free" status and a 5.5 to 7.0 rating has a "not free" status (Puddington, 2012).

2.4 Freedom and Economic Growth

Several researchers have investigated the relationship between freedom and growth. Vega-Gordillo and Álvarez-Arce (2003), Aixala and Fabro (2008), and Heckelman (2000) investigated Granger-causal relationships between freedom and growth. Heckelman (2000) and Cebula (2013) also investigated the different economic freedoms, although the latter used a panel least squares regression.

Vega-Gordillo and Álvarez-Arce (2003) have found Granger-causal relationships between economic freedom, political freedom, and economic growth. They found that economic freedom stimulated economic growth and political freedom, whilst economic growth had no significant effect on economic freedom but boosted political freedom. They also found that political freedom stimulated economic growth and enhanced economic freedom. They concluded that economic freedom had a greater effect than political freedom on economic growth.

Aixala and Fabro (2008) found a bilateral Granger-causality relation between economic freedom and economic growth. This supported Vega-Gordillo and Álvarez-Arce's (2003) findings that economic freedom stimulated economic growth, although Aixala and Fabro (2008) obtained different findings in terms of economic growth's effect on economic freedom. Aixala and Fabro (2008) further found a bilateral Granger-causality relation between civil liberties and economic growth and that political rights Granger-causes economic growth. They also found civil liberties to Granger-cause economic freedom, political rights to Granger-cause civil liberties, and political rights and economic freedom to have bi-directional Granger-causality.

Heckelman (2000) found that economic freedom Granger-causes economic growth across all of three lagged periods, with each period defined as one year. This is in line with the findings made by Vega-Gordillo and Álvarez-Arce (2003) and Aixala and Fabro (2008). Heckelman (2000) further found that of the various economic freedoms, monetary policy also Granger-causes economic growth over all three lagged periods but that capital flows, wage/price controls, property rights, and regulation only Granger-cause economic growth over more than one lag period.

Cebula (2013) investigated whether higher levels of economic freedom promote higher levels of *per capita* real income. This study was limited to OECD countries over a four

year period from 2003 to 2006. Cebula (2013) found that seven of the ten economic freedoms affected *per capita* real income. These are, in decreasing order, monetary freedom, trade freedom, property rights freedom, investment freedom, freedom from excessive government size, business freedom, and freedom from corruption; all significant at the 1% level. Fiscal freedom, financial freedom and labour freedom were found to be statistically insignificant.

Additional research such as that conducted by Persson and Tabellini (2006) and by Doucouliagos and Ulubaşoğlu (2008) provided additional insight into the relationship between political freedom and economic growth.

Persson and Tabellini (2006) showed that the introduction of democracy produced a growth acceleration. They have found that democracy (democracy is viewed as political freedom) had a zero direct effect on economic growth. However, they have also found that political freedom had an indirect positive effect by enhancing economic freedom, which, in turn, stimulated economic growth.

Quazi (2007) provided insight into a mechanism by which political freedom stimulated economic growth via economic freedom. Quazi (2007) wrote that the inflow of foreign direct investment can play a significant role towards economic growth of the recipient country. He found that an unstable political environment deters foreign direct investment. Quazi (2007) also found that a positive domestic climate, conducive to economic freedom, is required in order to reap the positive benefits of foreign direct investment. He then concluded that developing countries should formulate strategies in order to create long-term economic freedom, with the goal of attracting more foreign direct investment, whilst strengthening their economic development.

Despite the majority of the findings of previous research having supported the theory that increased levels of freedom promoted increased growth, there seemed to be exceptions. Doucouliagos and Ulubaşoğlu (2008) found regional differences in the effect of democracy on economic growth, with democracy showing a greater impact on economic growth in Latin America than in Asia, for example. Wu (2011) affirmed this finding when he stated that China had achieved GDP growth rates of near 10% per annum for more than a decade, despite a lack of economic freedom. Wu (2011) further stated that China had an underdeveloped legal system, which according to Puddington (2012) is one of the variables that constitute political freedom. Wu (2011) argued that

China might actually have been shielded from the recent financial crisis due the limited freedom in its financial markets and its cross-border capital flows.

2.5 Conclusion

There are a number of beliefs around the concept of freedom, each with its own proponents. The free market approach, as was championed by Smith and Hayek, stands in opposition to central control, as was advocated by Marx. Keynes and Stiglitz had championed a balanced approach that amounted to a free market with select regulation.

Economic freedom is measured through ten equally weighted economic freedoms to make up the economic freedom index. Political freedom is measured in terms of civil liberties and political rights to make up the political freedom index. Both indices reward a freer market philosophy.

Several studies were conducted to investigate the relationship between economic freedom, political freedom and economic growth. The majority of the findings indicated that greater economic freedom results in greater growth, although there were a number of notable exceptions, such as China. There were several contradictory findings regarding the relationship of political freedom on economic growth and on the effect of economic growth on both political freedom and economic freedom. Therefore, it would be necessary to retest the relationships between economic freedom, political freedom and economic growth.

3. Research Hypotheses and Propositions

3.1 Hypothesis 1

Research objective 1 aims to test for association between economic freedom, political freedom and economic growth. The null hypothesis therefore states that the population correlation coefficient is equal to zero and that there is no linear association between the variables in the underlying population.

$$H1_0: \rho_i = 0$$

i = 1,2 or 3 and corresponds to the pair of variables as set forth in Table 3.

Table 3: Correlation Variables

i	Variables
1	EF and GDP
2	CL and GDP
3	PR and GDP
4	EF and PR
5	EF and CL
6	PR and CL

The alternative hypothesis states that the population correlation coefficient is not equal to zero.

$$H1_A: \rho_i \neq 0$$

3.2 Hypothesis 2

Research objective 2 aims to test for causality between political freedom, economic freedom and economic growth. Political rights and civil liberties have been used to represent political freedom.

The null hypothesis states that X_i does not granger-cause X_j, for all i = 1 to 4 and j = 1 to 4, where $i \neq j$ (see Table 4). That means that there are 12 specific conditions to test for. These will be labelled alphabetically as hypotheses H2A to H2L.

Table 4: Granger-causality Variables

i / j	Variable / X
1	GDP *per capita*
2	EFI
3	CL
4	PR

The null hypothesis, $H2A_0$, states that economic freedom does not Granger-cause economic growth. The alternative hypothesis, $H2A_A$, states that economic freedom does Granger-cause economic growth.

$$H2A_A: \text{EFI} \rightarrow \text{GDP } \textit{per capita}$$

The null hypothesis, $H2B_0$, states that economic growth does not Granger-cause economic freedom. The alternative hypothesis, $H2B_A$, states that economic growth Granger-causes economic freedom.

$$H2B_A: \text{GDP } \textit{per capita} \rightarrow \text{EFI}$$

The null hypothesis, $H2C_0$, states that civil liberties do not Granger-cause economic growth. The alternative hypothesis, $H2C_A$, states that civil liberties Granger-cause economic growth.

$$H2C_A: \text{CL} \rightarrow \text{GDP } \textit{per capita}$$

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The null hypothesis, $H2D_0$, states that economic growth does not Granger-cause civil liberties. The alternative hypothesis, $H2D_A$, states that economic growth Granger-causes civil liberties.

$H2D_A$: GDP *per capita* → CL

The null hypothesis, $H2E_0$, states that civil liberties do not Granger-cause economic growth. The alternative hypothesis, $H2E_A$, states that civil liberties Granger-cause economic growth.

$H2E_A$: PR → GDP *per capita*

The null hypothesis, $H2F_0$, states that economic growth does not Granger-cause property rights. The alternative hypothesis, $H2F_A$, states that economic growth Granger-causes property rights.

$H2F_A$: GDP *per capita* → PR

The null hypothesis, $H2G_0$, states that civil liberties do not Granger-cause economic freedom. The alternative hypothesis, $H2G_A$, states that civil liberties Granger-cause economic freedom.

$H2G_A$: CL → EFI

The null hypothesis, $H2H_0$, states that economic freedom does not Granger-cause civil liberties. The alternative hypothesis, $H2H_A$, states that economic freedom Granger-causes civil liberties.

$H2H_A$: EFI → CL

The null hypothesis, $H2I_0$, states that political rights do not Granger-cause economic freedom. The alternative hypothesis, $H2I_A$, states that political rights Granger-cause economic freedom.

$H2I_A$: PR → EFI

The relationship between economic freedom, political freedom and economic growth

The null hypothesis, $H2J_0$, states that economic freedom does not Granger-cause property rights. The alternative hypothesis, $H2J_A$, states that economic freedom Granger-causes property rights.

$$H2J_A: EFI \rightarrow PR$$

The null hypothesis, $H2K_0$, states that political rights do not Granger-cause civil liberties. The alternative hypothesis, $H2K_A$, states that political rights Granger-cause civil liberties.

$$H2K_A: PR \rightarrow CL$$

The null hypothesis, $H2L_0$, states that civil liberties do not Granger-cause political rights. The alternative hypothesis, $H2L_A$, states that civil liberties do not Granger-cause political rights.

$$H2L_A: CL \rightarrow PR$$

3.3 Proposition 1

Economic freedom, political rights and civil liberties have high power in explaining economic growth and this can be captured effectively by way of a parsimonious model.

To explore this proposition, four models are examined. The process is started with a simple autoregression of economic growth, termed model 1. A second model is constructed by adding economic freedom as an explanatory variable. The intention with each step is to construct a model which increases the explanatory power through the use of an additional variable. A third model is constructed by adding civil liberties and a fourth model is constructed by adding political rights.

Research objective 3 aims to examine the complex relationships between economic growth, economic freedom and political freedom. This objective will be achieved by finding which of these four models exhibits the greatest explanatory power for economic growth.

4. Research Method

4.1 Research Design

Saunders and Lewis (2012) described a positivist research philosophy as one that aims to establish cause and effect. This study followed a positivist philosophy as it aimed to test causality between economic freedom, political freedom and economic growth. This study used an explanatory research type where the nature of the study was to explain the occurrence of economic growth through the discovery of causal relationships with freedom (De Vos, Strydom, Fouche, & Delport, 2003; Saunders & Lewis, 2012).

Churchill and Iacobucci (2005) wrote that there are three types of evidence that can be used for making inferences on causality. Concomitant variation refers to the way in which variables change together in the way predicted by the hypothesis. The time occurrence of variables refers to the sequence in which the variables change, with the causal variable changing first. The elimination of other possible causal factors means that other factors had to either be kept constant, or the results had to be adjusted to eliminate the effect of the other factors (Churchill & Iacobucci, 2005).

This research had to test whether the freedoms have causal relationships to economic growth by finding evidence of concomitant variation and the sequence in which the variables change. That means that political and economic freedom needed to change before economic growth changed.

De Vos (2003) also referred to correlational research as a useful first step towards explanatory research because of its ability to detect a relationship and determine the strength of association between variables. This study aimed to test for correlations between economic freedom, political freedom and economic growth, and then to explore the complex relationships between these variables.

A deductive approach was followed to execute this study. Saunders and Lewis (2012) explained deduction as an approach whereby research hypotheses are formed from the relevant existing theory. Chapters 1 and 2 of this report provided evidence of the exploration of existing theory that lead to the formulation of the research hypotheses in Chapter 3. Saunders and Lewis (2012) further wrote that hypotheses are then answered by performing specific tests, as is documented in Chapter 5 of this report.

Saunders and Lewis (2012) concluded that analysis of the results leads to the conclusion of the process where the initial theory is either confirmed or modified. Chapters 6 and 7 of this report provide such analysis and discussion of results in light of the existing theory.

4.2 Unit of Analysis

De Vos (2003) stated that the object, phenomenon, entity, process or event being studied, is the unit of analysis. The unit of analysis for this study was countries.

4.3 Universe and Population

Arkava and Lane (as cited in De Vos , 2003) stated that the universe consists of all possible subjects that possess the attributes that the researcher is interested in. The universe for this study was defined as all countries that have been included in any of the Political Freedom Index, the Economic Freedom Index, and that have economic data as surveyed by the World Bank since inception of these indices.

The population sets boundaries within the universe through specific wanted criteria, according to Arkava and Lane (as cited in De Vos , 2003). The population was defined as all countries for which either political freedom or economic freedom data were available at the same point in time as economic data.

4.4 Sampling Method and Size

This was a census study therefore the sample that was selected consisted of the complete population of 176 countries. The reason for selecting the total population was to be able to perform time series analyses as well as to conduct panel analyses. The words sample and population are thus interchangeable for this study.

4.5 Validity and Reliability

Saunders and Lewis (2012) stated that validity refers to the credibility of the research findings and conclusions; whether the data collection method accurately measure what

it intended, and whether the findings are what it claims to be about. They further mentioned that there are a number of factors that may threaten the validity: subject selection, history, testing, mortality, and ambiguity about causal direction (Saunders and Lewis, 2012).

Saunders and Lewis (2012) described reliability as the degree of consistency of research findings, and whether the research is repeatable and will yield the same results. They mentioned four factors that might impair the reliability of your findings: subject error, subject bias, observer error and observer bias.

This study utilised secondary data, which means that the variables had to be clearly defined with all its dimensions (Churchill & Iacobucci, 2005). Purification of data and pretesting contributed to the validity of the content (Churchill & Iacobucci, 2005). Data purification for this study included the elimination of countries that did not have sufficient data, as well as aligning the various country names that were recorded differently in the various indices.

Miller *et al.* (2012) stated that there are methodological issues such as the weighting of the ten economic freedoms. These are weighted equally, with little real understanding in terms of their interrelationships. This was addressed by doing a factor analysis on the economic freedom index. Cebula (2013) expressed concern over the possibility of multicollinearity between the ten economic freedoms. In order to address this issue, Cebula (2013) lagged five of the economic freedom indices but no correlation exceeded 0.342.

4.6 Data Gathering

This study sourced and utilised secondary data. Churchill and Iacobucci (2005) wrote that there are significant cost and time benefits to be realised by using secondary data. The data used for this study had been acquired through a simple download from the relevant organisations' websites without any costs associated with the acquisition.

Economic freedom data was sourced from the Heritage Foundation's Index of Economic Freedom and political freedom data was sourced from the Freedom House's Political Freedom in the World report. Economic growth figures were obtained from the World Bank.

There are disadvantages to using secondary data too. Secondary data often do not fit with the problem because it had been collected for another purpose (Churchill & Iacobucci, 2005). The research is also vulnerable to the previous researcher's biases and is limited to the factors considered for the original purposes of the data.

4.7 Data Analysis

4.7.1 Factor Analysis

The economic freedom index is calculated as the average score of the ten economic freedoms that forms part of the index (Miller *et al.* 2012). These freedoms are all weighted equally without consideration to the relevant importance of one freedom to the other. The result is that there might be methodological issues with the calculation of the economic freedom index.

The first step before any of the research objectives could be addressed through data analysis was to address the issues with the economic freedom index. Factor analysis was selected as a data reduction technique (Churchill & Iacobucci, 2005). Factor analysis exploits the correlation amongst the variables to extract overlapping information; ultimately identifying a smaller number of factors that explain most of the variance that could be observed in the larger group of variables.

Principle component analysis (PCA) was selected for its ability to transform interrelated variables, such as the ten economic freedoms, into uncorrelated linear combinations of the same variables (Churchill & Iacobucci, 2005). PCA is often used to reduce variables and to summarise observed variability by a smaller number of components. Through the application of factor analysis, the ten equally weighted economic freedoms were reduced to a smaller number of weighted factors. These factors combined to form a new variable to measure economic freedom: NEW EFI.

4.7.2 Unit Root Test

Stationarity is an important pre-condition for each of the research objectives' intended data tests: correlations, Granger-causality, and vector autoregression. A stationary time series has constant statistical properties over time ("Stationarity and differencing", n.d.). In order to obtain meaningful sample statistics such as correlations with other variables, or to obtain meaningful results from regression analysis, it is important to stationarize data ("Stationarity and differencing", n.d.). Seth (2007) wrote that Granger-causality assumes stationarity of data.

Panel unit root tests were used to test for stationary data for each of the four variables. NEW EFI, PR and CL passed the test but GDP *per capita* failed. By differencing GDP *per capita,* a new variable for economic growth was formulated: dGDP.

The first difference of a time series is determined through the series of changes between consecutive periods (Stationarity and differencing", n.d.). The current difference is in other words calculated by subtracting the previous period's value from that of the current period.

4.7.3 Correlation Test

Objective 1 aimed to test for association between economic growth, economic freedom and political freedom. That implied that correlation testing will be done.

According to Albright, Winston, and Zappe (2009), scatterplots indicate relationships graphically. A scatterplot is a useful first step in correlation testing as it indicates whether the relationship between the independent variable and dependent variable is linear, non-linear or non-existant (Albright, Winston, & Zappe, 2009; Triola & Franklin, 1994). It was for this reason that this research used scatterplots before conducting the correlation tests. The scatterplots assisted in the choice of type of correlation to use.

Spearman's rank-order correlation was chosen over Pearson's product-moment correlation for its ability to measure the strength of association of ordinal or ranked data ("Spearman's Rank-Order Correlation", n.d.). Where Pearson's product-moment correlation requires a linear relationship between variables, Spearman's rank-order correlation only requires that the variables have a monotonic relationship. Pearson's product-moment correlation assumes homoscedasticity and that outliers in the data

will be kept to a minimum ("Pearson's Product-Moment Correlation", n.d.). The scatterplots used in this research indicated a number of violations of the assumptions of Pearson's product-moment correlation, such as the presence of monotonic relationships, a large number of outliers and heteroscedasticity. Therefore the decision was made to use Spearman's rank-order correlation.

Correlations are useful for indicating linear relationship and for testing the strength of these associations but it does not quantify the relationships (Albright, Winston, & Zappe, 2009). It was for this reason important to conduct further tests to understand the causal relationships of the variables.

4.7.4 Granger-causality Test

Objective 2 aimed to test the causal relationships between political freedom, economic freedom and economic growth. Granger analysis was successfully used by other researchers to establish causal relationships (Heckelman, 2000; Vega-Gordillo & Álvarez-Arce, 2003; Aixala and Fabro, 2008).

Granger analysis is based on the statistical regression of two time series in the attempt to predict the one with the other (Seth, 2007). If the one series granger-causes the other series, then the past values of the first series provides information on the second series in addition to the information carried by its own past values.

Granger analysis was used to determine pairwise whether the variables were causal to each other. Bi-directional testing has the added benefit that it negates researcher bias, since the assumption of the causal direction is eliminated.

Granger-causality should not be interpreted as true causality, as factors that were not represented in the regression model cannot be represented in the model output (Seth, 2007). Granger tests were designed for use with pairs of variables and could provide misleading results if more than two variables were involved ("Granger causality", n.d.). Vector autoregression is a useful test to apply if there are three or more variables involved and was therefore selected to examine the relationships between the variables in greater detail.

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4.7.5 Vector Autoregression

“The principle of parsimony is to explain the most with the least,” according to Albright, Winston, and Zappe (2009, p. 650). The research aimed to find a model that explains the dependent variable, economic growth, almost as well as a model with a greater number of variables. Vector autoregression (VAR) was used to model the data.

The VAR test satisfied objective 3, which aimed to examine the complex relationships of the variables. Three diagnostic measures were used to evaluate the results, namely the R-squared value, the F-statistic, and the Akaike information criterion (AIC).

The R-squared value indicates the proportion of the variance that is explained by the model (“Understanding the Results of an Analysis”, n.d.). The R-squared value compares the explanatory power of the model to that of the dependent variable’s mean. The model with the greatest R-squared value has the greatest explanatory power.

The F-statistic tests the overall significance of each of the models (“Understanding the Results of an Analysis”, n.d.). It tested the full model against a model without any variables other than an estimate of the dependent variable, economic growth. This estimation was calculated as the mean of economic growth’s series of values. The F-statistic was used in this study to distinguish between models since the different F-statistic values of the models allowed for comparison. The model with the larger F-statistic value was considered more significant.

The AIC and the Schwartz Bayesian criterion (SBC) were used in this study to indicate the goodness of fit. These measures are useful for choosing between different models, as they both penalise the addition of another variable to a greater degree than what the adjusted R-squared value does (Studenmund, 2001). The lowest AIC or SBC indicates the best fit amongst the available models.

4.8 Research Limitations

Not all countries were included in all of the political freedom index, the economic freedom index, and the World Bank. These countries were excluded from the study and therefore represent the risk of having incomplete data. In addition there were

countries that had only partial data available, which means that those countries could not contribute to all aspects of the data analysis.

When making use of secondary data sources the researcher is limited to the data originally gathered (De Vos *et al.*, 2003). This study was restricted to the factors taken into consideration for the compilation of the economic freedom index and the political freedom index. In addition there were prejudices from the previous researchers that the study is exposed to. One such example is that both the freedom indices rewards increased freedom in the respective rankings.

Validity and reliability of source data limits the study (De Vos *et al.*, 2003). Since the economic freedom index and political freedom index were not initially created for the purpose as utilised in this study, data could have inadvertently been incorrectly manipulated and been transformed in ways that might have jeopardised the validity of the research. Miller *et al.* (2012) wrote that the economic freedoms used to compile the EFI are all weighted equally without consideration to the relevant importance of one freedom to the other. The result is that there might be methodological issues with the calculation of the economic freedom index. It was for this reason that factor analysis had to be used to reduce and weigh the factors that combine to form the EFI.

It is also important to remember that Granger-causality can only describe causality in terms of the input variables (Seth, 2007). Any underlying causal factors are ignored and not represented in the output.

4.9 Ethical Considerations

The Economic and Social Research Council stated in their Framework for Research Ethics (Economic and Social Research Council [ESRC], 2010) that there are six principles to address when conducting research.

Principle one (ESRC, 2010) stated that integrity, quality, and transparency must be ensured during the design, review and execution of the research. Approval to use the data was obtained from the owners of the secondary data. The original data sources were acknowledged and the data were represented in the manner that they intended. Care was taken when data from different sources were combined, to ensure the compatibility of the data.

Principles two, three, four and five focussed on the rights of the research subjects (ESRC, 2010). Principle two stated that participants need to provide informed consent. Principle three required that confidentiality and anonymity of participants need to be ensured. Principle four provided for the voluntary participation of respondents and principle five required that participants should remain free from harm at all times. There was no human element to the secondary data that was used in this study as all the data pertained to countries' performance with regards to economic growth, economic freedom and political freedom. Anonymity, confidentiality, voluntary participation, and prevention of harm to participants were therefore not relevant to this study.

Principle six (ESRC, 2010) required independence of research with no conflict of interest or partiality. There was no conflict of interest to the knowledge of the author.

The intended research was presented to an ethics committee in order to obtain the necessary approval. Approval was granted prior to the research being conducted.

5. Research Results

Panel data of 176 countries have been used for the years 1995 to 2012. GDP *per capita*, measured at purchasing power parity (PPP) in constant 2005 US$ terms, has been set as the dependent variable (GDP *per capita*). The Economic Freedom Index score (EFI), has been set as the first independent variable. The Civil Liberties score (CL) and the Political Rights score (PR) have been set as the second and third independent variables and represents political freedom.

This chapter will start with factor analysis and panel unit root tests in order to prepare the data for the analyses required to meet the stated research objectives. Thereafter data analyses for the three research objectives will follow sequentially.

5.1 Factor Analysis

Factor analysis was chosen as a data reduction technique in order to transform the economic freedom index. PCA addresses the methodological issues of the EFI, which was caused by the equal weighting of the ten economic freedoms.

Table 5: Communalities for the 10 Economic Freedoms – 1 Component

	Initial	Extraction
Business Freedom	1.000	0.696
Trade Freedom	1.000	0.383
Fiscal Freedom	1.000	0.784
Government Spending	1.000	0.498
Monetary Freedom	1.000	0.394
Investment Freedom	1.000	0.690
Financial Freedom	1.000	0.666
Property Rights	1.000	0.825
Freedom from Corruption	1.000	0.814
Labour Freedom	1.000	0.385

Extraction Method: Principal Component Analysis.

The communalities indicate that there are six variables that explain more than 50% of the variance of the variables after extracting one component (see Table 5). These are business freedom (69.6%), fiscal freedom (78.4%), investment freedom (69.0%), financial freedom (66.6%), property rights (82.5%), and freedom from corruption

(81.4%). The remaining four variables are disregarded as they do not contribute towards explaining the variance of the variables at an acceptable level.

The latent roots criterion suggests a two-factor solution, as only two of the factors have an Eigenvalue greater than 1.0 for the amount of variance explained (see Table 14 in Appendix A). The Scree test confirms this observation, as only two factors has a value greater than 1.0 for the amount of variance explained (see Figure 2 in Appendix A).

Two component PCA (see Table 6), shows that of the six variables that had greater than 0.5 extraction values, five are explained by the same component. Component 1 explains business freedom, investment freedom, financial freedom, property rights, and freedom from corruption. Fiscal freedom is explained by component 2 and is disregarded in order to ensure internal consistency of the variables.

Table 6: Component Matrix for the 10 Economic Freedoms – 2 Components

	Component	
	1	2
Business Freedom	0.813	0.188
Trade Freedom	0.587	0.196
Fiscal Freedom	-0.379	0.800
Government Spending	-0.517	0.480
Monetary Freedom	0.624	-0.066
Investment Freedom	0.827	0.076
Financial Freedom	0.798	0.168
Property Rights	0.908	-0.015
Freedom from Corruption	0.901	-0.055
Labour Freedom	0.407	0.468

Extraction Method: Principal Component Analysis.

Table 7: Communalities for the 5 EF's – 1 Component

	Initial	Extraction
Business Freedom	1.000	0.708
Investment Freedom	1.000	0.653
Financial Freedom	1.000	0.666
Property Rights	1.000	0.832
Freedom from Corruption	1.000	0.756

Extraction Method: Principal Component Analysis.

Communalities for the five economic freedoms after extracting one component is displayed in Table 7. New communalities were determined for business freedom, investment freedom, financial freedom, property rights and freedom from corruption.

The latent roots criterion suggests a one-factor solution, as only one of the factors has an Eigenvalue greater than 1.0 for the amount of variance explained (see Table 15 in Appendix A). The Scree test confirms this observation , as only two factors has a value greater than 1.0 for the amount of variance explained (see Figure 3 in Appendix A).

Table 8: Component Matrix for the 5 Economic Freedoms – 1 Component

		Component 1
Business Freedom	X_1	0.842
Investment Freedom	X_2	0.808
Financial Freedom	X_3	0.816
Property Rights	X_4	0.912
Freedom from Corruption	X_5	0.870

Extraction Method: Principal Component Analysis.

Table 8 displays the results of the 1 component PCA, where all factors are explained by component 1. These values were used to calculate the NEW EFI variable:

$$\textit{NEW EFI} = 0.842\,X_1 + 0.808\,X_2 + 0.816\,X_3 + 0.912\,X_4 + 0.870\,X_5$$

5.2 Panel Unit Root Tests

Panel unit root tests were conducted to ensure that all the variables have the same level of stationarity in data. Non-stationary data does not contribute to meaningful statistics, such as correlations and regressions. Objective 1 required correlation testing and objective 2 and objective 3 both required regression testing, therefore it was important for this study to ensure the stationarity of the data.

The panel unit root tests indicated that NEW EFI, CL and PR had stationary data (see Table 9). GDP *per capita* did not have stationary data and would therefore not have been valid for use in the subsequent correlation, Granger-causality and vector autoregression tests.

Table 9: Panel Unit Root Test Results

	Statistic	Probability	Cross sections	Observations
GDP *per capita*	14.4905	1.0000	175	2507
NEW EFI	-68.641	0.0000	160	2666
CL	-75.149	0.0000	162	1401
PR	-22.775	0.0000	154	1384
dGDP	-22.916	0.0000	175	2414

The stationarity was addressed by differencing GDP. The first difference for the time series had stationary data and was selected as the new variable for economic growth: dGDP.

5.3 Objective 1

PR and CL consist of ordinal data. In addition, visual inspection of the scatterplots revealed that not all the variables have a linear relationship, although the data presented appears to be monotonic (see Figure 4 to Figure 9 in Appendix B). Heteroscedasticity was present in some of the instances. Based on these observations, Spearman's rank order correlation was selected to determine the strength of association between the variables. The results are displayed in Table 10.

Table 10: Spearman's Rank Order Correlation Results

	NEW EFI	CL	PR
dGDP	0.286**	0.259**	0.247**
NEW EFI	-	0.553**	0.562**
CL	-	-	0.932**

** Correlation is significant at the 0.01 level (2-tailed)

The null hypothesis stated that the correlation coefficient (ρ) is equal to zero and that there is no association between the variables in the underlying population.

$$H1_0: \rho_i = 0$$

There was a statistically significant weak correlation between dGDP and NEW EFI, ρ_1= 0.286, p= 0.01. The null hypothesis is therefore rejected in favour of the alternative hypothesis.

There was a statistically significant weak correlation between dGDP and CL, ρ_2 = 0.259, p= 0.01. The null hypothesis is therefore rejected in favour of the alternative hypothesis.

There was a statistically significant weak correlation between dGDP and PR, ρ_3 = 0.247, p= 0.01. The null hypothesis is therefore rejected in favour of the alternative hypothesis.

There was a statistically significant strong correlation between NEW EFI and CL, ρ_4 = 0.553, p= 0.01. The null hypothesis is therefore rejected in favour of the alternative hypothesis.

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There was a statistically significant strong correlation between NEW EFI and PR, ρ_5 = 0.562, p= 0.01. The null hypothesis is therefore rejected in favour of the alternative hypothesis.

There was a statistically significant strong correlation between PR and CL, ρ_6 = 0.932, p= 0.01. The null hypothesis is therefore rejected in favour of the alternative hypothesis.

5.4 Objective 2

Research objective 2 aims to test for causality between political freedom, economic freedom and economic growth. The relevant variables are dGDP for economic growth, NEW EFI for economic freedom, and PR and CL for political freedom.

Table 11: Granger Causality Results

Null Hypothesis:	H2	Obs	F-Statistic	P
NEW EFI does not Granger Cause dGDP	A	2239	6.989	0.001
dGDP does not Granger Cause NEW EFI	B		11.926	0.000
CL does not Granger Cause dGDP	C	1035	2.421	0.089
dGDP does not Granger Cause CL	D		0.702	0.496
PR does not Granger Cause dGDP	E	1035	1.086	0.338
dGDP does not Granger Cause PR	F		0.041	0.960
CL does not Granger Cause NEW EFI	G	1406	41.120	0.000
NEW EFI does not Granger Cause CL	H		0.246	0.782
PR does not Granger Cause NEW EFI	I	1406	32.702	0.000
NEW EFI does not Granger Cause PR	J		0.092	0.912
PR does not Granger Cause CL	K	1406	1.964	0.141
CL does not Granger Cause PR	L		24.402	0.000

The Granger-causality results are shown in Table 11. For any probability values smaller than 5%, the null hypothesis is rejected in favour of the alternative hypothesis. The results are highlighted per null hypothesis below.

P = 0.001 < 0.05 for H2A, therefore the null hypothesis is rejected in favour of the alternative hypothesis, $H2A_A$: NEW EFI Granger-causes dGDP.

P = 0.000 < 0.05 for H2B, therefore the null hypothesis is rejected in favour of the alternative hypothesis, $H2B_A$: dGDP Granger-causes NEW EFI.

P = 0.089 > 0.05 for H2C, therefore there is not enough evidence to reject the null hypothesis, $H2C_0$: CL does not Granger Cause dGDP.

P = 0.496 > 0.05 for H2D, therefore there is not enough evidence to reject the null hypothesis $H2D_0$: dGDP does not Granger Cause CL.

P = 0.338 > 0.05 for H2E, therefore there is not enough evidence to reject the null hypothesis, $H2E_0$: PR does not Granger Cause dGDP.

P = 0.960 > 0.05 for H2F, therefore there is not enough evidence to reject the null hypothesis, $H2F_0$: dGDP does not Granger Cause PR

P = 0.000 < 0.05 for H2G, therefore the null hypothesis is rejected in favour of the alternative hypothesis, $H2G_A$: CL Granger-causes NEW EFI.

P = 0.782 > 0.05 for H2H, therefore there is not enough evidence to reject the null hypothesis, $H2H_0$: NEW EFI does not Granger Cause CL.

P = 0.000 < 0.05 for H2I, therefore the null hypothesis is rejected in favour of the alternative hypothesis, $H2I_A$: PR Granger-causes NEW EFI.

P = 0.912 > 0.05 for H2J, therefore there is not enough evidence to reject the null hypothesis, $H2J_0$: NEW EFI does not Granger Cause PR.

P = 0.141 > 0.05 for H2K, therefore there is not enough evidence to reject the null hypothesis, $H2K_0$: CL does not Granger Cause PR.

P = 0.000 < 0.05 for H2L, therefore the null hypothesis is rejected in favour of the alternative hypothesis, $H2L_A$: CL Granger-causes PR.

5.5 Objective 3

A vector autoregression was used to determine which of the four models had the highest explanatory power for dGDP.

Table 12: Vector Autoregression Results

	Model 1	Model 2	Model 3	Model 4
Variable added	dGDP	NEW EFI	CL	PR
R-squared	0.121	0.928	0.989	0.974
Adj. R-squared	0.115	0.927	0.989	0.973
Sum sq. residuals	590000000.000	483801.500	2651.880	4292.187
S.E. equation	758.303	21.715	1.608	2.045
F-statistic	17.734	1652.226	11793.550	4711.653
Log likelihood	-8327.253	-4649.815	-1955.500	-2204.691
Akaike AIC	16.109	9.003	3.796	4.278
Schwarz SBC	16.152	9.046	3.839	4.321
Mean dependent	167.299	163.839	37.525	24.294
S.D. dependent	805.898	80.596	15.440	12.516

The R-squared value provides an estimation of how much each model explains the dependent variable (see Table 12). Model 1 explained 12.1% of dGDP. Adding NEW EFI increased the explanatory power of model 2 by 80.7% to 92.8%. Model 3 increased the explanatory power by a further 6.1% to 98.9% by adding CL. Model 4 decreased the explanatory power of the independent variables by 1.5% to 97.4%.

The F-statistic indicates the significance of the result. The F-statistic values for each of the four models were greater than the tabled values at the 1% significance level. Model 3 had the highest F-statistic value, followed by model 4, model 2, and model 1.

The AIC and SBC values indicate goodness of fit. A smaller value for either of these criteria indicates a better model. Model 3 had the lowest AIC and SBC values, followed by model 4, model 2, and model 1.

6. Discussion of Results

A discussion of the results found in chapter 5 follows. This chapter will commence with an introduction to the variables utilised in the analysis. The discussion on the results will be ordered according to the research objectives defined in chapter 1.

Objective 1: Test for association between political freedom, economic freedom and economic growth.

Objective 2: Test for causality between political freedom, economic freedom and economic growth.

Objective 3: Examine the complex relationships between political freedom, economic freedom and economic growth.

GDP *per capita*, measured at purchasing power parity (PPP) in constant 2005 US$ terms, was found to have non-stationary data in the panel unit root tests (Table 9). GDP *per capita* was subsequently differentiated in order to obtain a variable with stationary data. This new variable, dGDP, had passed the unit root test and had been set as the dependent variable.

The Economic Freedom Index score has been identified as one of the independent variables. Miller *et al.* (2012) had however raised a concern regarding possible methodological issues with the index, namely that the ten economic freedoms were all weighted equally. A factor analysis was done on economic freedom and a new variable was defined. NEW EFI was set as the independent variable to represent economic freedom.

Political freedom was represented by the two factors that constitutes the Political Freedom Index (Puddington, 2012). Political rights (PR) and civil liberties (CL) were set as the remaining independent variables.

6.1 Objective 1

The first objective of this study was to test for association between political freedom, economic freedom and economic growth. Spearman's rank order correlation was selected to determine the strength of association between the variables.

The null hypothesis stated that the population correlation coefficient is equal to zero and that there is no association between the variables in the underlying population. The alternative hypothesis stated that the population correlation coefficient is not equal to zero. For the null hypothesis to fail, the correlation coefficient had to be any value other than zero.

$$H1_0: \rho_i = 0$$
$$H1_A: \rho_i \neq 0$$

i = 1,2 or 3 and corresponds to the pair of variables as set forth in Table 13.

Table 13: Correlation Variables (repeated)

I	Variables
1	EF and GDP
2	CL and GDP
3	PR and GDP
4	EF and PR
5	EF and CL
6	PR and CL

6.1.1 Correlation Results

The research findings are summarised and discussed below. Refer to Table 10 (Chapter 5.3 Objective 1) in order to facilitate the discussion. All results are significant at the 1% level.

Economic growth was found to have a weak association to economic freedom. Spearman's correlation test indicated that there was a statistically significant weak correlation between dGDP and NEW EFI, ρ_1= 0.286, p= 0.01. The null hypothesis was therefore rejected in favour of the alternative hypothesis.

Economic growth was also found to have weak associations with both civil liberties and political rights. There was a statistically significant weak correlation between dGDP and CL, $\rho_2 = 0.259$, p= 0.01. The null hypothesis was therefore rejected in favour of the alternative hypothesis. Spearman's correlation test indicated that there was a statistically significant weak correlation between dGDP and PR, $\rho_3 = 0.247$, p= 0.01. The null hypothesis was therefore rejected in favour of the alternative hypothesis.

Economic freedom was found to have a strong association with both civil liberties and political rights. NEW EFI and CL was found to have a statistically significant strong correlation, $\rho_4 = 0.553$, p= 0.01. The null hypothesis was therefore rejected in favour of the alternative hypothesis. Spearman's correlation test indicated that there was a statistically significant strong correlation between NEW EFI and PR, $\rho_5 = 0.562$, p= 0.01. The null hypothesis was therefore rejected in favour of the alternative hypothesis.

There was found to be a strong association between political rights and civil liberties. PR and CL was found to have a statistically significant strong correlation, $\rho_6 = 0.932$, p= 0.01. The null hypothesis was therefore rejected in favour of the alternative hypothesis.

6.1.2 Conclusion

There is a clear indication that the weak positive associations between economic growth and the freedoms are in line with previous research, such as that conducted by Vega-Gordillo and Álvarez-Arce (2003) and Aixala and Fabro (2008). The low level of association between economic growth and with economic freedom, political rights and civil liberties, could be due to the difference that was applied to GDP *per capita* in order to create a stationary variable, dGDP. Economic freedom, civil liberties and political rights were strongly correlated.

The correlation tests were conducted utilising data from approximately 175 different countries over an 18 year period and as such provide a representative sample with long run data. Doucouliagos and Ulubaşoğlu (2008) have found regional differences in the effect political freedom has on different countries' economic growth. Wu (2011) remarked on China's economic success despite a lack of freedoms. Care should be taken, however, with the interpretation of these exceptional results. Similarly the economic growth and freedom data of the top ten free economies compared to the

BRICS and CIVET countries should be interpreted with caution, as it consists of short run data ("Tradingeconomics.com", n.d.; Miller *et al.*, 2012; and Puddington, 2012).

De Vos (2003) stated that correlational research is a useful first step towards explanatory research because of its ability to detect relationships and determine the strength of association between variables. Based on the evidence of association above, there appeared to be sufficient motivation to investigate causal relationships between the variables.

6.2 Objective 2

Research objective 2 aimed to test for causality between political freedom, economic freedom and economic growth. The variable dGDP were used for economic growth, NEW EFI for economic freedom, and PR and CL for political freedom. The Granger-causality results are summarised in Table 11 in Chapter 5.4 Objective 2. The null hypothesis was rejected in favour of the alternative hypothesis for all results with a probability value smaller than 5%.

6.2.1 Economic Freedom and Economic Growth

$P<0.05$ for H2A, therefore the null hypothesis was rejected in favour of the alternative hypothesis, $H2A_A$: NEW EFI Granger-causes dGDP. This finding compared favourably with Heckelman (2000) who found that economic freedom Granger-caused economic growth. Vega-Gordillo and Álvarez-Arce (2003) and Aixala and Fabro (2008) confirmed this finding.

$P<0.05$ for H2B, therefore the null hypothesis was rejected in favour of the alternative hypothesis, $H2B_A$: dGDP Granger-causes NEW EFI. Aixala and Fabro (2008) also found that economic growth Granger-caused economic freedom. Vega-Gordillo and Álvarez-Arce (2003) did not find economic growth to have a significant effect on economic freedom.

6.2.2 Civil Liberties and Economic Growth

P>0.05 for H2C, therefore there was not enough evidence to reject the null hypothesis: CL does not Granger Cause dGDP. Persson and Tabellini (2006) did not find any evidence that political freedom Granger-caused economic growth, which supports this research finding, although Aixala and Fabro (2008) found bi-directional Granger-causality between civil liberties and economic growth.

P>0.05 for H2D, therefore there was not enough evidence to reject the null hypothesis: dGDP does not Granger Cause CL. This finding contradicted that of Aixala and Fabro (2008) who found bi-directional causality between economic growth and civil liberties.

6.2.3 Political Rights and Economic Growth

P>0.05 for H2E, therefore there was not enough evidence to reject the null hypothesis: PR does not Granger Cause dGDP. Persson and Tabellini (2006) shared this finding as they could not find any evidence that PR Granger-caused economic growth. Aixala and Fabro (2008), however, found PR to Granger-cause economic growth.

P>0.05 for H2F, therefore there was not enough evidence to reject the null hypothesis: dGDP does not Granger-cause PR. Aixala and Fabro (2008) confirmed this finding.

6.2.4 Civil Liberties and Economic Freedom

P<0.05 for H2G, therefore the null hypothesis was rejected in favour of the alternative hypothesis, $H2G_A$: CL Granger-causes NEW EFI. Aixala and Fabro (2008) matched this finding when they found that civil liberties Granger-caused economic freedom.

P>0.05 for H2H, therefore there was not enough evidence to reject the null hypothesis: NEW EFI does not Granger-cause CL. This finding contradicted those made by Aixala and Fabro (2008) who found bi-directional Granger-causality between economic freedom and civil liberties.

6.2.5 Political Rights and Economic Freedom

P<0.05 for H2I, therefore the null hypothesis was rejected in favour of the alternative hypothesis, $H2I_A$: PR Granger-causes NEW EFI. Aixala and Fabro (2008) also found political rights to Granger-cause economic freedom and Persson and Tabellini (2006) found political freedom to enhance economic freedom.

P>0.05 for H2J, therefore there was not enough evidence to reject the null hypothesis: NEW EFI does not Granger Cause PR. This finding opposed that found by Aixala and Fabro (2008) who found economic freedom to Granger-cause PR.

6.2.6 Political Rights and Civil Liberties

P>0.05 for H2K, therefore there was not enough evidence to reject the null hypothesis: PR does not Granger Cause CL. Aixala and Fabro (2008) contradicted this finding as they found that PR Granger-causes CL.

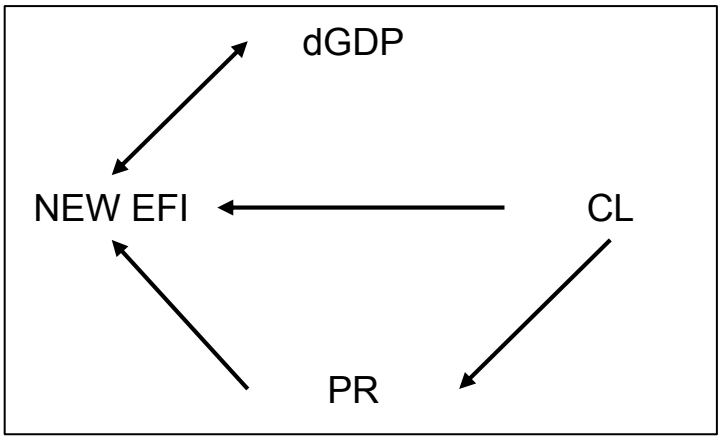
P<0.05 for H2L, therefore the null hypothesis was rejected in favour of the alternative hypothesis, $H2L_A$: CL Granger-causes PR. Aixala and Fabro (2008) contradicted this finding as they did not find CL to Granger-cause PR.

6.2.7 Conclusion

This research found economic freedom to have bi-directional Granger-causality with economic growth (see Figure 1). The finding is in line with previous results and indicates that as an economy becomes freer, its performance increases. This could also indicate that as a country grows economically, it allows more concessions towards economic freedom, creating a virtuous cycle of economic freedom and growth.

This research could not establish causal relationships between civil liberties and economic growth (see Figure 1). No relationship could be detected between political rights and economic growth either. Therefore, this research could not find a direct relationship between political freedom and economic growth.

Figure 1: Summary of the Granger-causal relationships



Political rights and civil liberties both have been found to Granger-cause economic freedom, although economic freedom has not been found to Granger-cause either of the political freedoms (see Figure 1). It is worth noting that the test that was employed, Granger-causality, only tests for direct causality between two time series. The findings could therefore indicate an indirect benefit of increased political freedom as it enhances economic freedom, which, in turn, enhances economic growth.

Civil liberties have been found to Granger-cause political rights, although political rights have not been found to Granger-cause civil liberties (see Figure 1). This could indicate that factors such as freedom of expression and belief, rule of law, and individual rights, could drive government functioning, the electoral process, and political participation (Puddington, 2012). Further research would be required in order to gain greater insight into this relationship.

6.3 Objective 3

Research objective 3 aimed to examine the complex relationships between political freedom, economic freedom and economic growth. This objective was satisfied by testing for the research proposition: there is a model that best explains economic growth in terms of economic freedom, political rights and civil liberties.

Four models were specified. Model 1 aimed to explain economic growth in terms of its past performance. Model 2 aimed to explain economic growth by adding economic freedom as an additional explanatory variable to model 1. Model 3 aimed to explain economic growth by adding civil liberties as an additional explanatory variable to

model 2. Model 4 aimed to explain economic growth by adding political rights as an additional explanatory variable to model 3.

In order to test each of the models, a vector autoregression was conducted. The diagnostic results are discussed below on a model-by-model basis. Refer to Table 12 in Chapter 5.5 Objective 3 to facilitate the discussion.

6.3.1 Model 1

The R-squared value indicates the explanatory power of each model. Model 1 had 12.1% explanatory power. That means that the previous two periods' results for economic growth explain 12.1% of the current period's growth.

Model 1 had the lowest F-statistic value of the four models. The F-statistic value of 17.734 is greater than the critical value indicating that the R-squared value is statistically significant. The AIC value of 16.109 was the largest amongst the four models, indicating that it was the worst fit of the four models. This finding is reaffirmed by the SBC value of 16.152 which is, again, the worst of the four models.

6.3.2 Model 2

Economic freedom (NEW EFI) was added to Model 1 in order to construct Model 2. Model 2 had an R-squared value of 0.928, indicating that it had 92.8% explanatory power. That means that NEW EFI improved on Model 1's explanatory power by 80.7%.

Model 2's F-statistic value improved on that of Model 1. The F-statistic value of 1652.226 is greater than the critical value indicating that the R-squared value is statistically significant. The AIC value of 9.003 indicated an improvement in goodness of fit when compared to model 1, a finding that is confirmed by the SBC value of 9.046.

6.3.3 Model 3

Model 3 was created by adding civil liberties to Model 2. Model 3 had an R-squared value of 0.989, indicating that it had 98.9% explanatory power. Model 3 improved on Model 2's explanatory power by 6.1%.

Model 3's F-statistic was a further improvement from Model 2. The F-statistic value of 11793.550 is greater than the critical value, indicating that the R-squared value is statistically significant. The AIC value of 3.796 indicated a further improvement in goodness of fit, which is confirmed by the SBC value of 3.839.

6.3.4 Model 4

Model 4 was created by adding political rights to Model 3. Model 4 had an R-squared value of 0.974, indicating that it had 97.4% explanatory power. Political rights decreased the explanatory power of the model by 1.5%.

Model 4's F-statistic was a decline from that of Model 3. The F-statistic value of 4711.653 is greater than the critical value, indicating that the R-squared value is statistically significant. The AIC value deteriorated to 4.278, with the SBC value deteriorating to 4.321. This indicates that Model 4 is not an improvement on Model 3.

6.3.5 Conclusion

The greatest explanatory power towards economic growth was found in Model 3. Model 3 utilised economic growth, economic freedom and civil liberties to explain economic growth. Persson and Tabellini (2006) speculated that political freedom might have an indirect effect on economic growth due to stimulating economic freedom, which, in turn, has a direct effect on economic growth. This research finding supports the aforementioned notion by showing that civil liberties contribute towards explaining economic growth.

7. Conclusion

7.1 Findings

The Arab Spring placed renewed interest on the topic of freedom, yet current economic conditions seemingly contradicted the established theory that states that economic freedom and political freedom enhance economic growth. The ten largest free economies were being outperformed in terms of economic growth by countries with less political and economic freedom, such as the BRICS and CIVET countries. China has been highlighted as one of the examples of phenomenal economic growth despite lacking a number of freedoms. This raised the question on what the nature of the relationships between economic growth, economic freedom and political freedom are.

Through the use of Spearman's rank-order correlation test, this study found economic growth to have weak positive correlations with each of the independent variables. The three independent variables, economic freedom, political rights, and civil liberties were all strongly correlated to each other.

The study found bi-directional Granger-causality between economic freedom and economic growth. Economic freedom was the only independent variable to Granger-cause economic growth. Civil liberties Granger-caused both political rights and economic freedom, whilst political rights Granger-caused economic freedom. These findings compare well with existing theory, namely that economic freedom is the primary driver of economic growth, with political freedom enhancing economic freedom.

The next step was to find a parsimonious model to explain a large proportion of economic growth. Vector autoregression was used to compare models with each other. The results of the VAR indicated that economic growth is best explained through a model that consists of a combination of economic growth, economic freedom, and civil liberties.

The results of this study contain a number of lessons. The first serves as a warning that there might be exceptions to the established theory. The BRICS and CIVET countries are only a small subset of the countries used in this study and do not as such

define the theory. The second is that long-run data is required whenever causal relationships are interrogated. The poor performance of the free economies coincides with the global financial crisis, which represents too short a period of time for making any causal inferences.

The results of this study confirmed previous research findings. The implication is that greater economic freedom drives greater economic growth for countries. It is therefore in any country's best interest to pursue greater economic freedom. The study also found political freedom to enhance economic freedom. The extrapolation of this finding is that it is beneficial to countries to improve political freedom in order to improve economic freedom which ultimately drives economic growth.

7.2 Recommendations

Countries that strive for economic prosperity should aim to enhance their economic freedom. Although it might be beneficial to enhance all ten of the economic freedoms, this study's results should be interpreted with specific focus on the five economic freedoms identified through factor analysis namely business freedom, investment freedom, financial freedom, property rights, and freedom from corruption.

In order to enhance business freedom, barriers to entrepreneurial activity should be lowered, including burdensome and redundant regulation. More effort should rather be made to encourage entrepreneurial activity, whether through state funds, incubators or through the relaxing of restrictive regulation.

Investment freedom promotes entrepreneurship and innovation. Capital movement restriction and state control has an adverse effect on both investors and investees. When market forces, rather than regulation, dictate where individuals and companies can invest, economic productivity can be achieved because capital flows to where it is needed, whilst investors can gain good returns.

Financial freedom means that regulation in banking and financial institutions should not restrict competition and entrepreneurial endeavours. Regulation need not extend beyond ensuring transparency and integrity of information as increased competition and market driven pricing will allow for greater entrepreneurial activity and economic growth.

Critical to economic freedom is that the state should ensure property rights. The state should not only enforce contracts but should also attempt to shorten the recovery period. Allowing people to accumulate wealth encourages entrepreneurial activity. It was not coincidental that Mohamed Bouazizi set the Arab world alight when he immolated himself. The constant denial of property rights made his and millions of others' entrepreneurial endeavours futile.

The state should ensure that it operates free from corruption. Corruption not only interferes with the free market but also with individual freedom and could lead to reduced entrepreneurial activity. Corruption is another central theme in the on-going economic and political revolution that swept through the Arab world. The oppressive and corrupt behaviour by the various states lead to a revolt by the citizenry.

The aforementioned five economic freedoms share a common attribute; each have the ability to enhance or restrict entrepreneurial activity. The state should therefore ensure that it provides entrepreneurs with the best possible chance of succeeding with new ventures, whether through instituting supporting structures or through the relaxing of restrictive regulation. Economic freedom as a whole will be improved if these actions were initiated and as the number of entrepreneurial ventures increase and become successful, economic growth will ensue.

In addition to improving its economic freedom, a country should also focus on enhancing political freedom to increase its economic prosperity. Specific focus should be placed on civil liberties which include, amongst others, factors such as improving the rule of law, in other words fight crime and corruption. The state should further allow personal autonomy, ensure individual rights and allow freedom of expression and belief without applying censorship.

7.3 Limitations

The findings in this study should be interpreted within the limitation of the statistical models used. Granger-causality should not be interpreted as true causality, as factors that were not represented in the regression model cannot be represented in the model output (Seth, 2007). Even though economic freedom was found to be Granger-causal to economic growth, it could be that a third factor is the true causal factor that drives

economic growth through economic freedom. Civil liberties have been found to be Granger-causal to economic freedom but not to economic growth, which does not mean that civil liberties is not causal to economic growth, as civil liberties may be a third factor. If the number of lags for civil liberties were to be increased, a Granger-causal relationship with economic growth might be established. Indeed, through vector autoregression, this research has established that civil liberties help explain economic growth.

The sequence in which the models utilised in the VAR were constructed could have an effect on the results. Had political rights been the variable added to model 3 and civil liberties to model 4, the results could potentially have reflected the combination of political rights, economic freedom and economic growth to have the greatest explanatory power.

7.4 Recommendations for Future Research

7.4.1 Freedom and Well-being

All three of the economic systems discussed in Chapter 2 claim to have the best interest for its people at heart. Karl Marx believed that shared wealth could be achieved through his system of control (Solomon, 2010). Adam Smith himself claimed that the pursuit of wealth is a belief based on the deception that happiness is the result of owning more things (Den Uyl & Rasmussen, 2010). Stiglitz, Keynes and Cao all argue that a balanced approach with properly planned government intervention will lead to a healthy market place that will ultimately reduce poverty (Stiglitz, 2009b; Solomon, 2010; Cao, 2008). Stroup (2006) however identified the need to determine empirically what effect each freedom has on social well-being. It would therefore be necessary to test for the effect of political freedom and economic freedom on well-being.

Gropper, Lawson and Thorne (2011) found a positive relationship between happiness at a national level with economic freedom. They also found that GDP *per capita* influenced happiness positively. They concluded that “freer people generally are wealthier, live longer, and are happier.”

The relationship between economic freedom, political freedom and economic growth

A better measure than the Happy Planet Index (HPI) is needed as its methodology changed between each of its three editions (Marks, Abdallah, Simms, & Thompson, 2006; Abdallah, Thompson, Michaelson, Marks, & Steuer, 2009; Abdallah, Michaelson, Shah, Stoll, & Marks, 2012). The HPI is therefore not valid as a source of longitudinal data.

Well-being information could potentially be sourced from sources that measure human development, life expectancy, and quality of life. There is further little theory regarding freedom's relationship with well-being and whether there is an optimum level of freedom to achieve maximum social well-being.

7.4.2 The Arab Spring, Freedom and Growth

The Arab Spring refers to a series of revolutions that occurred in a number of Arab countries since December 2010 according to Wikipedia.org ("Arab Spring", n.d.). Tunisia, Egypt, Libya and Yemen have had a change in leadership due to the demonstrations, whilst civil uprisings have erupted in Bahrain and Syria. Several other Arab nations were also affected by protests.

Human rights violations, dictatorships, government corruption, unemployment and poverty were listed amongst the reasons for the uprisings ("Arab Spring", n.d.). It can be inferred that a lack of political freedom and economic freedom was at the heart of the cause to the uprisings. It is therefore necessary to investigate the changes to political and economic freedom that was realised through these uprisings and how it influenced the economic landscape in the concerned countries.

7.5 Concluding Statement

The research objectives have been met and the research question has been answered successfully. This research found associations between economic growth, economic freedom and political freedom. Bi-directional Granger-causality was found between economic freedom and economic growth, whilst both political freedoms Granger-caused economic freedom. It was also found that civil liberties contributes to a model that explains economic growth.

The relationship between economic freedom, political freedom and economic growth

Economic freedom enhances economic growth, therefore it is important to improve economic freedom. The state can increase economic freedom by implementing supporting structures to enable entrepreneurship, and reduce restrictive regulation. At the same time political freedom augments economic freedom, which, in turn, heightens economic growth. It therefore stands to reason that an improvement in political freedom will have a positive effect on economic growth. By improving individual rights and the rule of law, the state can develop civil liberties.

References

Abdallah, S., Michaelson, J., Shah, S., Stoll, L., & Marks, N. (2012). *Happy Planet Index: 2012 Report.* M. Murphy, (Ed.). London, UK: New Economics Foundation.

Abdallah, S., Thompson, S., Michaelson, J., Marks, N., & Steuer, N. (2009). *Happy Planet Index 2.0.* M. Murphy, (Ed.). London, UK: New Economics Foundation.

Aixala, J., & Fabro, G. (2008). Economic freedom, civil liberties, political rights and growth: A causality analysis. *Spanish Economic Review, 11* (3), 165-178. doi:10.1007/s10108-008-9050-x

Albright, S.C., Winston, W.L., & Zappe, C.J. (2009). *Data analysis and decision making* (3rd Ed). Mason, OH: South-Western

Arab Spring. (n.d.). Retrieved October 24, 2012 from Wikipedia: http://en.wikipedia.org/wiki/Arab_spring

Arup, C. (2010). The financial crisis: Learning from regulatory and governance studies. *Law & Policy, 32* (3), 363-381.

Cao, J. (2008). Is competition always effective? The theoretical basis of excessive competition. *The Chinese Economy, 41* (4), 11-104. doi:10.2753/CES1097-1475410405

Carden, A., & Hall, J. (2010). Why are some places rich while others are poor? The institutional necessity of economic freedom. *Economic Affairs, 30* (1), 48-54.

Cebula, R.J. (2013). Which economic freedoms influence *per capita* real income?, *Applied Economics Letters*, *20* (4), 368-372. doi:10.1080/13504851.2012.707768

Churchill, G. A., Jr., & Iacobucci, D. (2005). *Marketing Research: Methodological Foundations* (9th Ed). Mason, OH: South-Western

Den Uyl, D.J., & Rasmussen, D.B. (2010). Adam Smith on economic happiness. *Reason Papers, 32,* 29-40.

De Vos, A.S., Strydom, H., Fouche, C.B., & Delport, C.S.L. (2003). *Research at Grass Roots* (2nd Ed). A.S. De Vos, (Ed.). Pretoria, South Africa: Van Schaik Publishers

Doucouliagos, H., & Ulubaşoğlu, M.A. (2008). Democracy and economic growth: A meta-analysis. *American Journal of Political Science, 52* (1), 61-83.

Economic and Social Research Council. (2010). ESRC framework for research ethics 2010. Retrieved from http://www.esrc.ac.uk/about-esrc/information/research-ethics.aspx

Fassin, D. (2011) The trace: Violence, truth, and the politics of the body. *Social Research, 78* (2), 281-298.

Fluxman, T. (2009). Marx, rationalism and the critique of the market. *South African Journal of Philosophy, 28* (4), 377-413.

Granger causality. (n.d.). Retrieved November 02, 2012 from Wikipedia: http://en.wikipedia.org/wiki/Granger_causality

Gropper, D.M., Lawson, R.A., & Thorne J.T., Jr. (2011). Economic Freedom and Happiness. *Cato Journal, 31* (2), 237-255

Grossack, I.M. (1976) Adam Smith: His times and work. *Business Horizons, 19* (4), 5-21.

Heckelman, J.C. (2000) Economic freedom and economic growth: A short run causal investigation. *Journal of Applied Economics, 3* (1), 71-91.

Jeyaraj, J.B. (2008). Religion and politics in ancient Israel and modern India: Issues and inter-actions. *Evangelical Review of Theology, 32* (2), 136-155.

Kitcher, P. (2010). Varieties of freedom and their distribution. *Social Research, 77* (3), 857-872.

Klein, D.B. (2010). Liberty between the lines in a statist and modernist age: Unfolding the Adam Smith in Friedrich Hayek. *Economic Affairs,* 82-85

Marks, N., Abdallah, S., Simms, A., & Thompson, S. (2006). *The Happy Planet Index.* M. Murphy, (Ed.). London, UK: New Economics Foundation.

Miller, T., Holmes, K.R., Feulner, E.J., Kim, A.B., Riley, B., & Roberts J.M. (2012). *2012 Index of Economic Freedom*. Washington, DC: The Heritage Foundation

Murray, M.J. (2010). From economic freedom to economic and social poverty: Institutional approaches to the business enterprise, structural change, and the role for government. *Journal of Economic Issues,44* (2), 421-428. doi:10.2753/JEI0021-3624440214

Newman, S.P. (2008). Losing the faith: British historians and the last best hope. *Comparative American Studies, 6* (2), 161-178. doi:10.1179/147757008X280803

Pearson's Product-Moment Correlation. (n.d.) Retrieved November 3, 2012, from https://statistics.laerd.com/statistical-guides/pearson-correlation-coefficient-statistical-guide.php

Peláez, R.F. (2009). Economic freedom: A comparative study. *Journal of Economics and Finance, 33* (3), 246-258. doi:10.1007/s12197-008-9060-4

Persson, T., & Tabellini, G. (2006). Democracy and development: The devil in the details. -*Political Economy, 96* (2), 319-324.

Puddington, A. (2012). Freedom in the World 2012: The Arab uprisings and their global repercussions. Washington, DC: Freedom House

Quazi, R. (2007). Economic freedom and foreign direct investment in East Asia. *Journal of the Asia Pacific Economy, 12* (3), 329-344. doi:10.1080/13547860701405755

Saunders, M., Lewis, P. (2012). Doing research in business and management: An essential guide to planning your project. Harlow, Essex : Pearson Education Limited.

Seth, A. (2007) Granger causality. Retrieved November 3, 2012, from http://www.scholarpedia.org/article/Granger_causality doi:10.4249/scholarpedia.1667

Solomon, M.S. (2010) Critical ideas in times of crisis: Reconsidering Smith, Marx, Keynes, and Hayek. *Globalizations, 7* (1-2), 127-135. doi:10.1080/14747731003593356

Spearman's Rank-Order Correlation. (n.d.) Retrieved November 3, 2012, from https://statistics.laerd.com/statistical-guides/spearmans-rank-order-correlation-statistical-guide.php

Stationarity and differencing. (n.d.) Retrieved November 3, 2012, from http://people.duke.edu/~rnau/411diff.htm

Stiglitz, J.E. (2009a). Moving beyond market fundamentalism to a more balanced economy. *Annals of Public and Cooperative Economics, 80* (3), 345-360. doi:10.1057/eej.2009.24

Stiglitz, J.E. (2009b). The current economic crisis and lessons for economic theory. *Eastern Economic Journal, 35,* 281-296. doi: 10.1057/eej.2009.24

Stroup, M.D. (2006). Economic freedom, democracy, and the quality of life. *World Development, 35* (1), 52-66. doi:10.1016/j.worlddev.2006.09.003

Studenmund, A.H. (2001). *Using Econometrics: A practical guide*. (4th Ed). Boston, MA :Addison Wesley Longman, Inc.

Tradingeconomics. (n.d.). Retrieved April 24, 2012, from http://www.tradingeconomics.com/

Triola, M.F., & Franklin, L.A. (1994). *Business Statistics: Understanding populations and processes*. Boston, MA :Addison-Wesley Publishing Company

Understanding the Results of an Analysis. (n.d.). Retrieved November 4, 2012, from http://www.nlreg.com/results.htm

Vega-Gordillo, M., & Álvarez-Arce J.L. (2003). Economic growth and freedom: A causality study. *Cato Journal, 23* (2), 199-215.

Whitten-Woodring, J. (2009). Watchdog or lapdog? Media Freedom, regime type, and government respect for human rights. *International Studies Quarterly, 53,* 595-625.

Wu, C. (2011). Economic freedom, economic growth, and China. *The Chinese Economy, 44* (5), 104-119. doi:10.2753/CES1097-1475440506

Wu, G. (2006). On the idea of freedom and its rejection in Chinese thought and institutions. *Asian Philosophy, 16* (3), 219-235. doi:10.1080/09552360600979448

Appendix A

This section had been referenced in Chapter 5.1 Factor Analysis.

Table 14: Latent Roots Criterion for 10 Economic Freedoms

Factor	Variance Explained
1	4.928
2	1.206
3	0.971
4	0.835
5	0.528
6	0.481
7	0.429
8	0.303
9	0.243
10	0.076

Figure 2: Scree Test for 10 Economic Freedoms

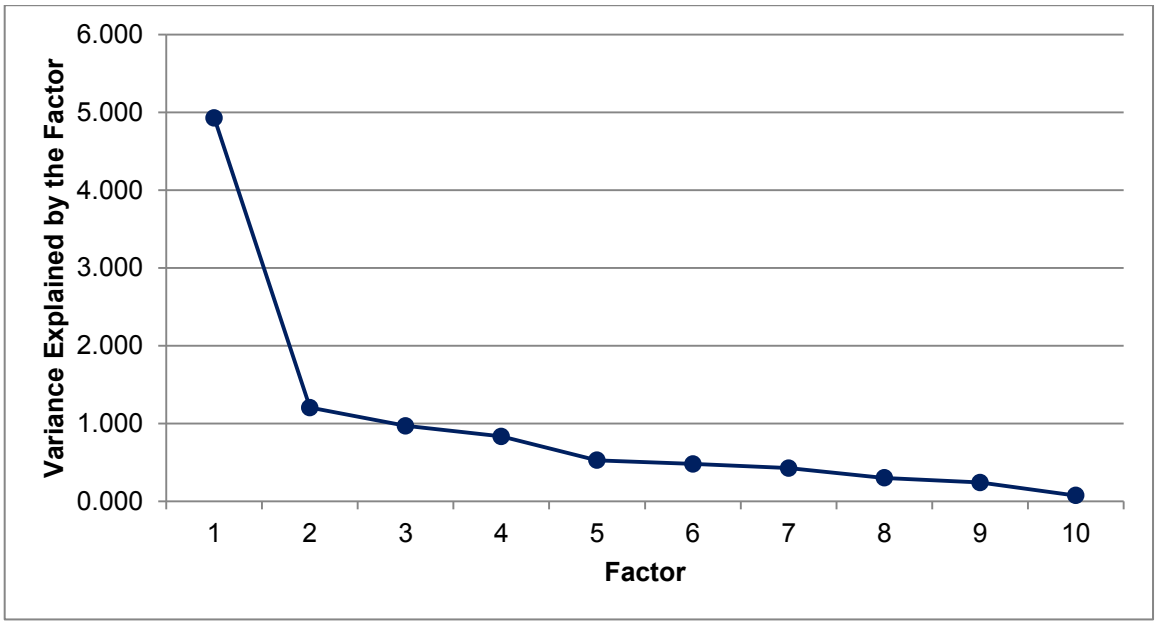
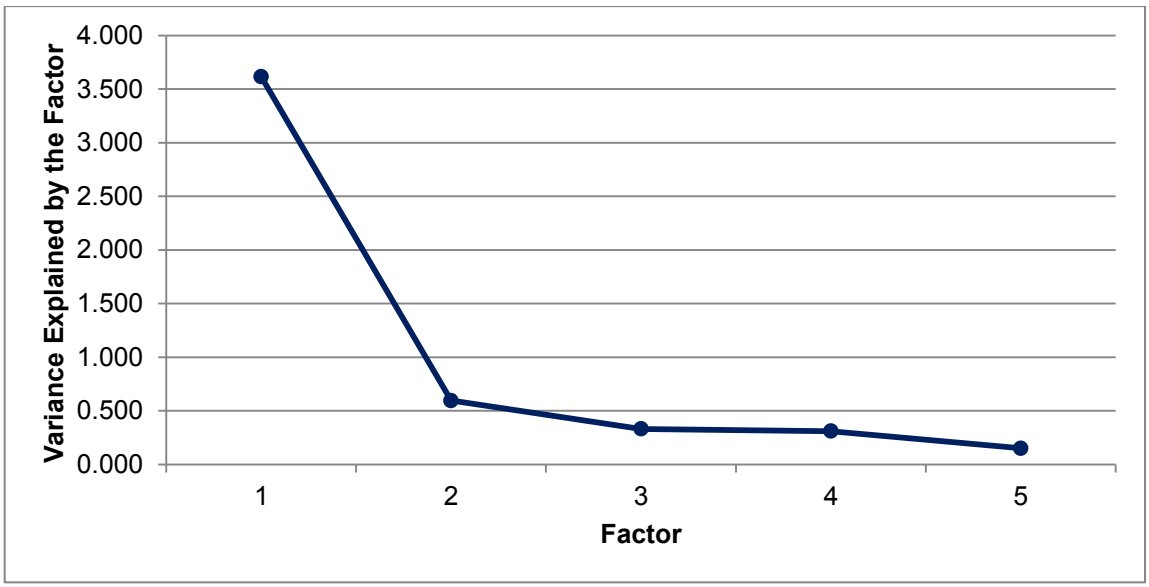


Table 15: Latent Roots Criterion for 5 Economic Freedoms

Factor	Variance Explained
1	3.614
2	0.594
3	0.330
4	0.310
5	0.151

Figure 3: Scree Test for 5 Economic Freedoms



Appendix B

This section has been referred to in Chapter 5.1 Objective 1

Figure 4: Scatterplot for dGDP and NEW EFI

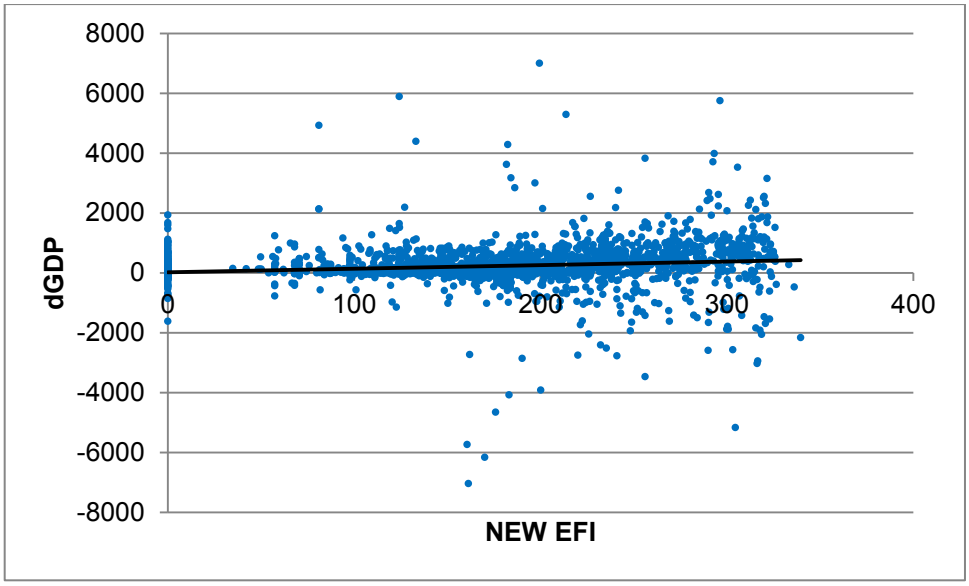


Figure 5: Scatterplot for dGDP and CL

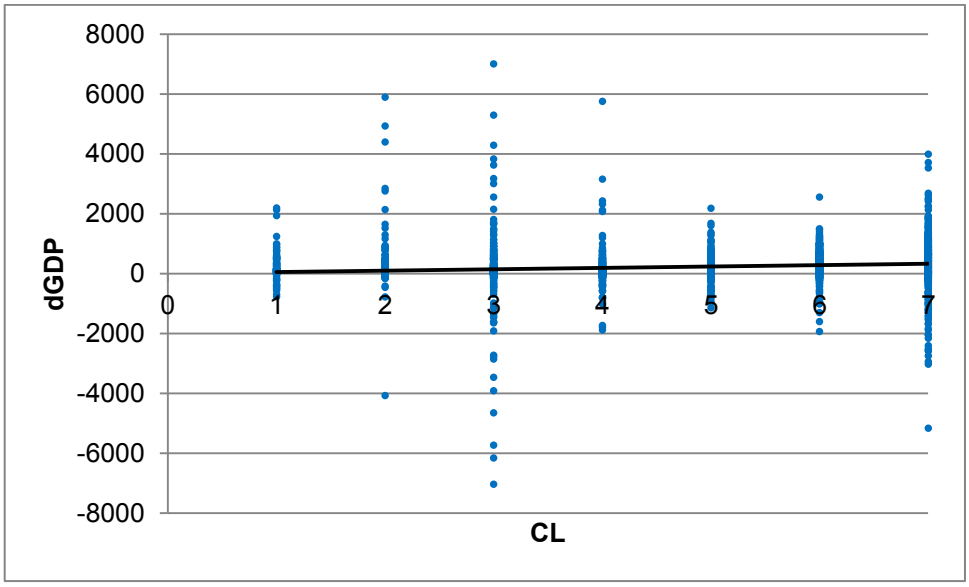


Figure 6: Scatterplot for dGDP and PR

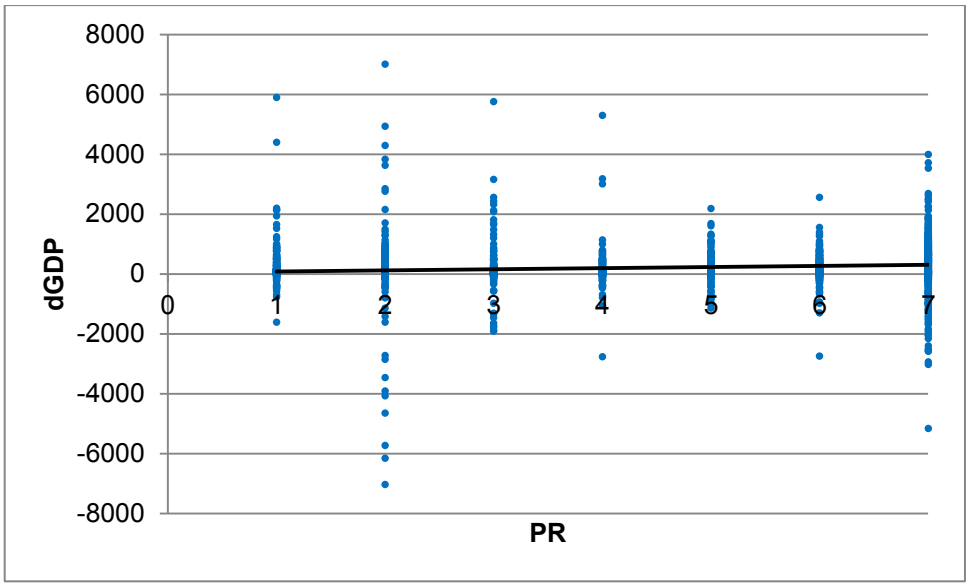


Figure 7: Scatterplot for NEW EFI and PR

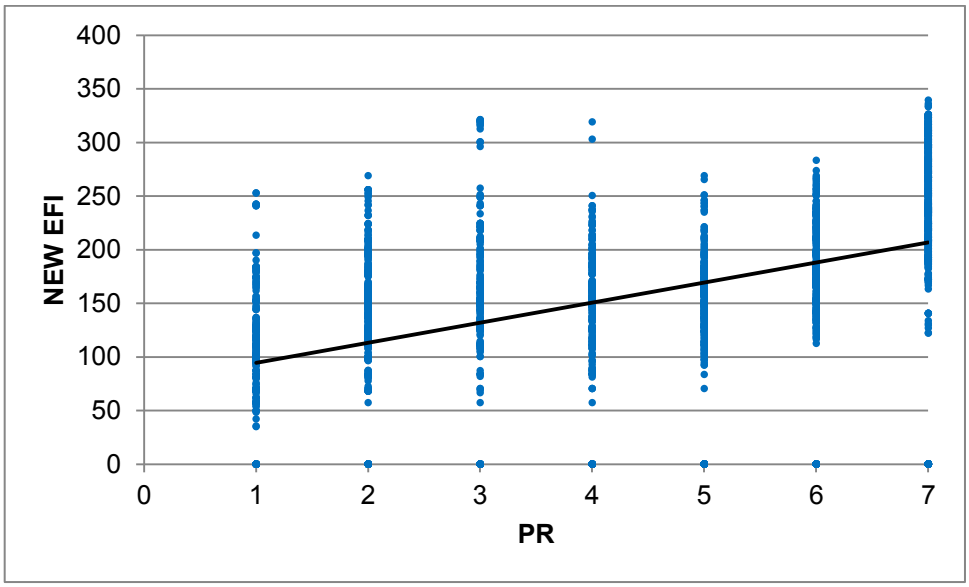


Figure 8: Scatterplot for NEW EFI and CL

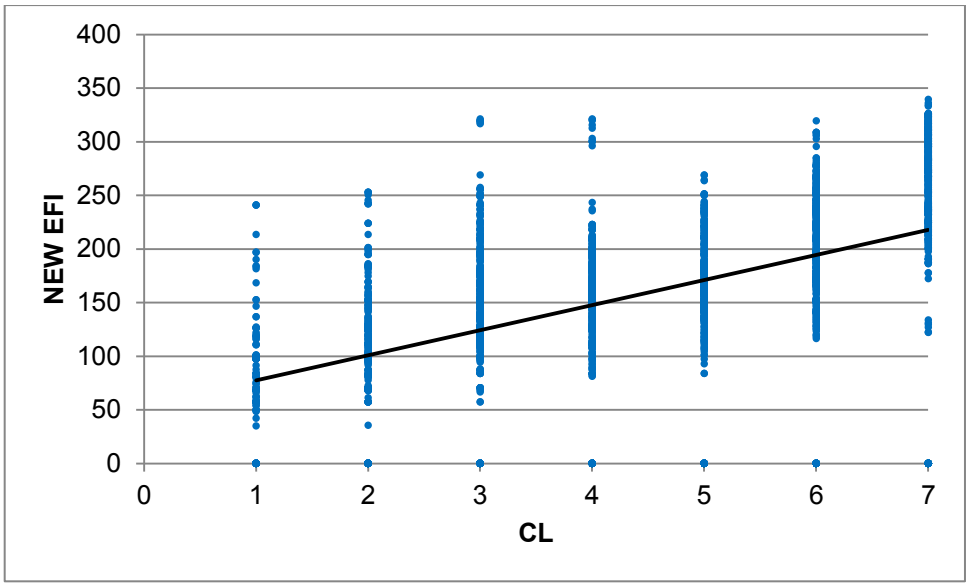


Figure 9: Scatterplot for CL and PR