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The Concept and Causes of National Human Prosperity

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THE CONCEPT AND CAUSES OF HUMAN PROSPERITY

By

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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

This dissertation represents a comprehensive study of human prosperity. It consists of two main components separated into two essays. The first essay provides a theoretical definition and a measurement of prosperity. The second essay contributes a review of the institutional and cultural factors identified in the first essay, and examines their influence on the economic subset of prosperity. The definitions of the concept in Essay One, and the theoretical propositions of the determinants of prosperity in Essay Two, are found to be supported through a cross-country empirical analysis.

By defining human prosperity as life-satisfaction, Essay One identifies the correlates of prosperity through an analysis of cross-country measures of subjective well-being using raw data from the World Values Survey (1981–2005). The study finds robust evidence that income, freedom, health, religious beliefs, stability, security, and family life are among the factors contributing to human prosperity. The methods consist of a factor analysis of the survey questions combined with an OLS regression. A sensitivity analysis, using three large and distinct samples of the population, validates the findings and enhances the power of the model. The final section in Essay One evaluates existing measures of prosperity and develops a new index based on the findings.

The descriptive statistics and the regression outcomes, as well as the index of prosperity in the first essay, demonstrate evidence that cultural factors play a relatively modest role in defining the causes of prosperity, but a more robust role in generating prosperity. The first essay, therefore, provides the background for analyzing the causes of prosperity. Because of the immensity of such a project, Essay Two concentrates on

the economic aspect of prosperity. The first section in Essay Two evaluates the frameworks used in the academic literature. Reviews of the literature lead to the establishment of a social theory that suggests how the cultural factors identified in the first essay may be incorporated into a framework that analyzes economic prosperity. The final section in Essay Two reviews and proposes a model of economic prosperity that includes cultural mechanisms and tests this theoretical model. The empirical results provide strong support for the importance of cultural factors to economic prosperity. A short summary chapter concludes the dissertation.

ESSAY I: THE CONCEPT OF HUMAN PROSPERITY

Section I: Defining Human Prosperity

1.1 Introduction

This essay is separated into two main sections. The objective of the first section is to identify the components of human prosperity and lay the theoretical foundation for 1) creating an index that measures a nation's quality of life, and 2) determining the causes of prosperity. A prosperity index is developed in section two based on the findings in this section. Such an index has several useful purposes and facilitates an investigation into the different policies, institutions, and underlying cultural factors that influence cross-country variance in prosperity. The determinants of prosperity will be addressed in Essay Two. Prosperity is defined as "Quality of Life" in the literature and these terms are used interchangeably.

Prosperity, originally considered a topic within the tangential vicinity of economics, was seldom directly addressed by 20th century literature.[1] However, the subject matter has unquestionably garnered mounting attention at the outset of this century. Prosperity is a critical concern for individuals and nations. In modern liberal democracies, but also in other political systems, the well-being of the people is an ulterior philosophical and political motive. Prosperity often serves as justification for government intervention. In the "Declaration of Independence" (1776) of the United States, the pursuit of happiness, along with life, and liberty, is stated as a primary

[1] Prosperity was a popular topic among economists in the 18th (Adam Smith, *Wealth of Nations* 1776) and the 19th centuries (Utility Theory).

purpose. Diener (2008) found that college students the world over rated happiness and life-satisfaction as extremely important or very important in all the 41 nations surveyed. On these grounds, there are compelling incentives for society to know and understand human prosperity, and the relevance of national prosperity as a scholarly research question is evident.[2]

This chapter first defines the concepts and discusses the state of the literature by reviewing early and recent work on life-satisfaction and happiness. Second, a theory with six hypotheses is stated. The third step consists of operationalization of the hypotheses and statistical testing, as well as a sensitivity analysis to verify the findings.

At the outset, it is necessary to define and differentiate the related concepts of prosperity, happiness, life-satisfaction, and well-being. Prosperity is generally described as a state of health, happiness, steady good fortune and financial security. In the Merriam Webster dictionary prosperity is defined as the condition of being successful or thriving, especially in regards to economic well-being. Adding human to the concept removes the exclusive focus on economics. Thus, prosperity can be understood as tantamount to life-satisfaction and happiness, which are considered to be the two underlying concepts of the latent variable well-being (Gundelach and Kreiner 2004:363).

According to Christian (Augustine) and Greek philosophers (Aristotle), there are four levels of happiness with an increasing order of completeness.[3] The first is Laetus, which is experienced through a short-term feeling of joy, obtained through instant gratification. The second is Felix, which is the type of happiness obtained when

[2] Prosperity is also part of Thomas Hobbes reasoning for the populace's contract with government.
[3] Spitzer, S.J., Robert. "Four Levels of Happiness," unpublished lecture (1999).

one succeeds relative to others. This form of happiness has been called "the comparison game." The third, Beatitudo, comes from seeing the good in others and doing good deeds through self-sacrifice. A person can stimulate any of the first three levels to the fullest and still remain deeply unhappy. A heroin addict effectively stimulates happiness at level one. Immensely rich and successful people still commit suicide, and extraordinarily giving and self-sacrificing people, like Mother Theresa, still may live unhappy lives.

Only Sublime Beatitudo, the fourth level, which encompasses a fullness and perfection of happiness, reached through completely grasping one's purpose in life by virtuously combining the three other types of happiness, results in true happiness. This final level on the virtuous scale is the idea of Eudemonia. Eudemonia is achieved according to Aristotle, not by honor, or wealth, or power, but by rational activity in accordance with virtue over an individual's life span. Not all Greek philosophers agreed with Aristotle. Competing views on how to achieve Eudemonia is found in Epicureanism and Stoicism. The Epicurean philosophy states that absolute happiness (Eudemonia) only comes from bodily pleasures. Contrarily, Stoicism disseminates that virtue is necessary and sufficient for Eudemonia. This virtue is achieved by living in accord with nature and by rejecting bodily pleasures.

Although the two concepts of life-satisfaction and happiness are very similar and highly correlated, they also have differences that make them unique. The philosophy discussed above held happiness and life-satisfaction to be different levels of the same concept. Complete happiness or "Eudemonia" was the highest level. This level is a more judgmental and long-term state that is in accordance with a modern definition of life-satisfaction. Satisfaction, according to Campell et al. (1976:8), "is a judgmental or cognitive experience, whereas happiness suggests an experience or

feeling of affect." Lane (2000) posited that happiness represents a marginal emotional change. Life-satisfaction, therefore, describes a cognitive judgment and happiness a mode.

Research has shown that the correlation between these two concepts is strong, but that they correlate differently with independent variables (Gundelach and Kreiner, 2004:361). Diener (2006:399) disagreed and maintained that subjective well-being is an adequate umbrella term for the different evaluations people make about their lives. However, a measure of the responses to questions on happiness and life-satisfaction in the World Values Survey (WVS) result in a correlation of only .46 (1995 survey) and .49 (2005).[4] The terms should therefore be treated as distinct concepts like Gundelach and Kreiner suggest. In this dissertation, prosperity is defined in the form of long-term quality of life.[5] This contrasts a temporary feeling of bliss from pleasure or from the more difficult to grasp virtue ethics of Eudemonia.

1.2 Theoretical Foundation

The previous discourse on early theoretical thought serves as a background for evaluating the choices made in modern scholarship. The goal of this chapter is to address a quantitative scientific approach to early theoretical literature. The term life-satisfaction is used as synonymous with prosperity and quality of life for the reminder of this dissertation. The concept of happiness is sometimes referred to when discussing other studies.

[4] Other sources report a higher correlation of .7 (Tov, Diener, Kahneman).
[5] In other words, life-satisfaction is an elevated state of mind due to a feeling of flourishing, not (necessarily) in the moment, but on average over an individual's life span.

Costanza et. al (2007:1) argued that the research has focused on two radically different methods of measuring prosperity. The first is quantifiable social or economic indicators that reflect certain theoretical properties that a good society should have. The second analyzes self-reported levels of "subjective well-being" (SWB). This chapter lays the foundation for combining the two approaches. Based on the analytical outcomes of the subjective measures in this section, an index of objective measurements can be created in the section two of this essay.

Until recently, economists have been skeptical towards direct statements by individuals about their utilities. This has led to a focus on "revealed preferences" as indirect utility indicators.[6] However, Diener (2005) and Kahneman and Kruger (2006) showed that subjective well-being measures are credible. Veenhoven (1991, 1993), perhaps the main authority in the field, studied the primary factors that correlate with his extensive database on happiness and life-satisfaction. His conclusion is that life-satisfaction is not relative (dependent on a subjective attitude) as some theories posit. Life-satisfaction can be accurately predicted on the basis of the objective "liveability" of the society in which the individual resides and on the basis of his or her personal profile. Moreover, the factors that are considered important to people appear to be very much the same across countries and resilient through time.

As a consequence of Veenhoven's, and similar studies, some argue that subjective measures may be used directly to indicate the level of prosperity. However, there are several problems associated with such a course of action; (1) as an individual's life situation improves, expectations also rise, therefore individuals in developed nations might report lower scores for an equivalent life situation compared

[6] This implies that individuals have full information, unlimited computational capabilities and act in a purely rational manner.

to people in a less developed country;[7] (2) there exists some preference discrepancy between individuals and nations along with cultural differences in interpreting the questions asked in a survey and how to respond to them; (3) data is insufficient and are measured in different years and time periods for different countries; (4) an individual's assessment of their well-being may reflect the social desirability of responses (Kahneman, 1999), [8] (5) there is a significant correlation between good weather and positive answers (Hirshleifer and Shumway, 2003). In exploring these "sunshine-effects," as they are called, Smith (1986) and Stevenson and Wolfers (2007) showed that small changes in the ordering of questions, the day of the week the sample is taken, and seasonal cycles can influence responses. Consequently, it might be inaccurate to compare countries on reported levels of life-satisfaction.

On the other hand, although differences between nations based on the subjective answers cannot be accurately compared because of the limitations discussed in the previous paragraph, individual level data can give accurate depictions that are very useful for the study of prosperity. According to Easterlin (2001) it appears that there exist near unanimous universal notions, regardless of national origin, that describe well-being. Not only do different measures of well-being correlate with each other, but across cultures they correlate with emotional responses such as brain activity, heart rate, and regularity of smiles during social interaction (Frey and Stutzer, 2002). In addition, measures of individual life-satisfaction are also linked with independent evaluations by friends, self-reported health, sleep quality, and personality tests (Diener, Lucas and Schollon 2006). Diener and Tov (2008) stated that research now shows strong multicultural correlations, leading to the emergence of a theory of an aggregate, universally-based set of emotions. Together, with access to many new data sets and

[7] Easterlin, Kahneman and Tversky, among others, have documented this idea.
[8] Quality of Life; A report from the global social change research project

methodologies, scholars are now substantially better equipped to understand how prosperity is achieved.

In the following paragraphs, it is hypothesized that the factors of wealth, health, security and stability, freedom, family life, religious beliefs and social participation, are objective measures of prosperity.[9] These factors are included based on theories like Maslow's "Hierarchy of Needs" (1943) and because they have been identified in the literature on happiness and life-satisfaction.

1.2.1 Hypothesis Section

The Easterlin-paradox describes the apparent contradiction that, as income rises in the Western world, life-satisfaction remains stable. The King of Bhutan, and Baron Layard, have been among the strongest proponents for de-linking the relationship between life-satisfaction and income. It is a fact that income has increased dramatically in some developed countries while life-satisfaction has seen a much more moderate increase. However, this dissertation theorizes that this discrepancy can be attributed to counteracting forces such as increased divorce rates, infrequent high-quality social interactions, and less religious participation within these societies. Stevenson and Wolfers (2008) have revisited the data that the Easterlin-paradox was built on and corrected mistakes in the analyses. After the correction, they find a strong and significant relationship between national GDP and life-satisfaction. They conclude that their work falsifies the Easterlin-paradox and that absolute income levels are very important for life-satisfaction, and relative levels are less important. They find no satiation point at any income level.

[9] Stevenson and Wolfers, 2008; Brooks, 2008; Winkelmann and Winkelmann, 1998. Veenhoven, 1996; Diener et al., 1997; Blanchflower and Oswald, 1997; Clark and Oswald, 1994; Wilson, 1967.

Consequently, research in recent years has provided evidence that the main conclusion of the King of Bhutan, and scholars like Baron Layard and Easterlin was misguided. National gross domestic product has both a positive direct and indirect impact on prosperity (Headey and Muffels 2004). There are many obvious reasons why wealth would increase life-satisfaction. Wealth provides for basic fundamental necessities. Wealth also increases freedom, opportunities, and time for leisure that can be spent on family, friends, and other activities. Research also shows that people attain the highest levels of life-satisfaction when they feel a sense of freedom and control of their own destiny (Murray 1994).[10] Falling income in various forms has the opposite effect. Objectively, people are left with fewer opportunities. Subjectively, people feel constrained and controlled.[11] Consequently, ceteris paribus, it is hypothesized that people obtain higher levels of life-satisfaction from increased wealth. This leads to the following:

Hypothesis 1. As an individual's wealth rises, life-satisfaction increases.

Health (emotional, mental or physical) is thought to be an essential part of a person's life-satisfaction. Life-satisfaction "tends to be larger among those that are in good physical and mental health" according to Heylighten (1999:3). Emotional and mental health can be difficult to measure, but are often correlated with physical health that is measurable. It may be apparent that good health causes an increase in life-satisfaction, or that poor health cause's decreased life-satisfaction, however, the direction of causation is a non-recursive system. Research has shown that "feelings of pleasure and well-being proved to be highly predictive of future good

[10] Charles Murray in *The Pursuit of Happiness and Good Government (*1994), discussed a study that compared 'internals' (people who believe they can control their destiny) with 'externals' (people who believe their lives are controlled by external forces). He found 'internals' were happier.
[11] Verme (2007), Brooks (2008), Ben Ami (2003, 2005).

health"(Blakeslee and Grossarth-Maticek, 2000:3). This research focuses on the causational direction from health to life-satisfaction. This leads to:

Hypothesis 2. The level of life-satisfaction increases as an individual's health improves.

Stability and security are other factors that influence human prosperity. Where the perils of war and unrest are threatening, uncertainty protrudes into every sphere of life (Hobbes 1651)). Increased uncertainty generally lowers life-satisfaction. On the other hand, it is important to point out that not all forms of stability and security increase life-satisfaction. In his book *Satisfaction* (2006), Burns presented the counterintuitive finding that humans tend to experience higher levels of satisfaction following occurrences of challenge and novelty. Burns argued that satisfaction comes less from the attainment of a goal, but that the process of achieving the goal drives satisfaction levels. Burns argues that the idea of satisfaction's link with predictability, stability, and security is largely a myth. In contrast, Burns proposes that the greatest satisfaction stems from surprises and rarely experienced events and experiences. Stability and security are therefore defined as a deficiency of war and unrest (political/economical).

Hypothesis 3. A stable and secure environment increases life-satisfaction.

Sen (1999) proposed that freedom is a bundled commodity. Freedom can be grouped into political, economic, civil, and religious categories. Verme (2007) found that freedom and control are the strongest predictors of life-satisfaction. Verme consequently developed a combined variable of freedom and control over one's life as a focal concept explaining individual welfare. The freedom-factor has shown the overall strongest correlations to life-satisfaction in the literature. According to Heylighten (1993:2), "people are more satisfied in societies that minimally restrict their freedom of action. In other words, they are in control rather than being controlled."

According to Brooks (2008) people that felt completely, or very free, were twice as likely to say that they were very happy about their lives as those who felt only a moderate degree of freedom, not much, or none at all. Similarly, Gundelach and Kreiner (2004) found freedom to be the most essential variable in explaining life-satisfaction. This leads to:

Hypothesis 4. Freedom (economic, political, civil) increases life-satisfaction.[12]

Anke Plagnol (2008) found that a good family life is one of the strongest predictors of life-satisfaction among both men and women. As an illustration, ceteris paribus, men are most unsatisfied when they are in early adulthood, from the age of twenty until twenty-nine, which coincides with the highest unmarried single relationship status. The Pew Global Attitudes Survey shows a close global correspondence between satisfaction with personal life and satisfaction with family life (Stokes 2007).[13] This is also supported in the Gross National Happiness survey (Brooks, 2008). Brooks wrote that parenthood offers "meaning" to life, a sort of deep happiness identified earlier as Aristotle's Eudemonia. Similar to other research, Brooks (2008) identified marriage as a prime factor in explaining well-being. Gundelach and Kreiner (2004) found a stable relationship to be a most important variable in explaining happiness. In an ethnographic study by Drummond (2000), marriage turned out to be the strongest explanation for happiness and could not be compensated for with friendship. This relationship is hypothesized to also hold true for the related variable life-satisfaction. This leads to:

Hypothesis 5. A good and stable family life increases individual prosperity.

[12] Religious freedom was left out of the hypothesis because there data does not exist for some countries. Religious freedom where, however, found to be significant for the sub-sample where data were available.
[13] The Pew Survey interviewed 45,000 people in 46 countries.

The Economist's Quality of Life index (2005) found a strong correlation between religious beliefs and happiness. Similarly, Brooks (2008), using the 2004 General Social Survey (GSS), revealed that 43 percent of people who attended a house of worship weekly said they were "very happy" with their lives, versus 23 percent of people who attended seldom or never. Similar findings across the world have been completed by a number of researchers (Helliwell 2008).[14] Most of the positive relations between well-being and religion have been found in predominantly Christian societies. However, Roemer (2006), in a study in Japan, found that "after controlling for socio-demographic and other secular variables, strong associations remain. The link between religion and well-being can be applied to societies that are not predominantly Christian." (Roemer, 2006: abstract). This dissertation hypothesize that the relationship between religion and happiness also holds true for the relationship between religion and life-satisfaction. This leads to:

Hypothesis 6.Strong religious beliefs increase a person's satisfaction with life.

1.3 Methodology

The empirical analysis proceeds in two steps. As discussed earlier, there are problems associated with the use of single-item variables to account for complex concepts. To sort out these issues, the potential that the single-item measures have an underlying construct or attribute is considered. Nunnally and Bernstein (1994), McIver and Carmines (1981), and Spector (1992) delivered three good arguments for using multi-item measures instead of a single item for measuring attributes (Gliem 2003).

[14] Winkelmann and Winkelmann, 1998; Blanchflower and Oswald, 1997;. Diener et Al., 1997; Veenhoven, 1996; Clark and Oswald, 1994;Wilson, 1967.

First, considerable random measurement error is associated with individual items, leading to unreliability in the measurement. When measuring attributes, Nunnally and Bernstein (1994) indicated that measurement error averages out when individual scores are combined. Second, an individual item can only categorize individuals into a relatively small number of groups. An individual item cannot discriminate among fine degrees of an attribute. For example, with a dichotomously-scored item (such as yes/no) one can only distinguish between two levels of the attribute, i.e. they lack precision. Third, individual items lack scope. McIver and Carmines (1981) stated that a single item cannot fully represent a complex theoretical concept or any specific attribute (Gliem 2003).

The first step is a factor analysis of the variables that indicates each latent construct. This is done in an attempt to discover the underlying constructs. The analysis is first performed simultaneously on 62 variables deemed to have a theoretical link with the construct. This identifies factors that are isolated in groups. The factor analysis is reiterated until only high factor loadings are left (MSA guidelines). The factor analysis is estimated using the principal component analysis method. The rotation used for the estimate is Varimax. The resulting factor loadings, and the description of the variables within the factors analysis, are shown in Table 1. These variables are taken directly out of the questions in the WVS.

Following the work of Comrey and Lee (1992), Tabachnick and Fidell (2001), and Gorsuch (1983) a factor loading of at least 0.60 was considered good to very good. Factor loadings below 0.60 are considered "independent" of the construct under consideration. This loading cut-point provides confidence that the loadings provide a convincing basis for interpreting the factors.

Table 1: Final Factor Loadings for the Constructs

Religion	**Factor Loading**
How important is religion in your life? 1-5 scale where 5 = Very important and 1= Not at all important.	0.83
Apart from weddings and funerals, about how often do you attend religious services these days? 1-7 scale where 7 = More than once a week and 1 = Never.	0.73
Independently of whether you attend religious services or not, would you say you are: (1) A religious person, (2) Not a religious, (3) An atheist?	0.79
How important is God in your life? 1-10 scale where 10 = Very important and 1 = Not at all important.	0.86
Do you take some moments of prayer, meditation or contemplation or similar? 1 = Yes 0 = No.	0.74
Income	
How satisfied are you with the financial situation of your household? 1-10 scale where 10 = Completely satisfied and 1 = Completely dissatisfied.	0.73
People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the: (5) Upper class, (4) Upper middle class, (3) Lower middle class, (2) Working class, (1) Lower class.	0.79
On a scale of incomes on which 1 indicates the "lowest income decile" and 10 the "highest income decile" in your country, we would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes.	0.83
Community Life	
Are you (2) active , (1) inactive, or (0) do not belong to: Art, music or educational organization.	0.61
Are you (2) active , (1) inactive, or (0) do not belong to: Labor union.	0.62
Are you (2) active , (1) inactive, or (0) do not belong to: Political party.	0.63
Are you (2) active , (1) inactive, or (0) do not belong to: Environmental organization.	0.75
Are you (2) active , (1) inactive, or (0) do not belong to: Professional association.	0.70
Are you (2) active , (1) inactive, or (0) do not belong to: Humanitarian or charitable organization.	0.69
Are you (2) active , (1) inactive, or (0) do not belong to: Consumer organization.	0.72
Civil Political Liberties	
How democratically is this country being governed today? 1-10 scale where 10 = Completely democratic and 1 = Not at all democratic.	0.85
How much respect is there for individual human rights in this country? There is: (4) A great deal of respect for individual human rights, (3) Fairly much respect, (2) Not much respect, (1) No respect at all.	0.85

The methodological application used in testing the hypotheses is Ordinary Least Squares (OLS). The issues of multicollinearity, and heteroskedasticity are addressed, with the latter being addressed through the use of White's correction (see Greene 2003).

Multicollinearity is addressed by adding Collins parameter to the regression in Stata. The total sample of 24,910 respondents from 53 countries in the World Values Survey, ensures the presence of cultural and other regional or country specific factors in the analysis.

The cultural diversity across countries is an important issue to address in this study. Diener (2008) gave an example of how culture influences responses. He found that in Latin cultures, where there is a belief that positive emotions are mostly beneficial and negative emotions are cast in a bad light, people are slightly happier when controlling for other factors. In contrast, in the Confucian nations, where there is a belief that negative emotions are as beneficial as positive ones, people are less happy than expected. Diener attributes this to the cultural norms governing the society. The variance also differs slightly between countries. Some countries have many happy people and many unhappy. Other countries show less variance between individuals.

The following analysis tests the hypotheses while controlling for a series of potential confounding factors. The variables, a description of the variables, and hypothesized directions are offered in Table 2. The controls used in the analysis are for community life, education, gender, age, and income inequality--potentially confounding variables used in prior work on happiness and life-satisfaction. The role of education, despite having a central positive role in some analyses, such as the Human Development Index, has had mixed results in other analysis. In particular, findings show lower happiness levels with increasing education for females (Stevenson and Wolfers 2007).

Table 2: Variables, Description, and Hypotheses

Variable	Description	Hypothesis	
		Tested	Direction
Dependent			
Life-Satisfaction	All things considered, how satisfied are you with your life as a whole these days? 1-10 scale where 10 = Completely satisfied and 1= Completely dissatisfied.[15]		
Independent			
Income	Factor- See Factor Loadings in Table 1.	H_1	+
Health	How would you describe your state of health these days? Is it: (1) Very good, (2) Good, (3) Fair, (4) Poor.	H_2	+
Stability & Security	*Global Report on Conflict, Governance and State Fragility 2008*. M G. Marshall & B R. Cole at George Mason U.	H_3	+
Freedom & Control	Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Using a scale where 1 means "no choice at all" and 10 means "a great deal of choice" to indicate how much freedom of choice and control you feel you have over the way your life turns out.		
Political and Civil Liberties	Factor- See Factor Loadings in Table 1.	H_4	+
Married	Are you currently: 1= Married or Living together, 0 Otherwise.		
Children	# of children: 0-7 and 8 = 8 children or more.	H_5	+
Religion	Factor- See Factor Loadings in Table 1.	H_6	+
Controls			
Community Life	Factor - See Factor Loadings in Table 1.		
Education	What is the highest educational level that you have attained: Scale 1-9: (1) No formal education, … , (9) University-degree.		
Education*Wealth	Interaction of education and wealth.		
Gender	Male = 0, Female = 1.		
Age	This means you are __ years old (write in age in two digits).		
Gini Coefficient	Measured from 23 to approximately 60 where Sweden with 23 is the lowest. Provided by the United Nations.		

The Economists *Quality of Life Index* (2005:3) reported a similar finding.

Although women's rights have progressed over the last four decades, and virtual

[15] Ferrier and Frijters (2004:655) maintain that "assuming cardinality or ordinality of the answers to general satisfaction questions is relatively unimportant to results when satisfaction is measured and regressed at the individual level." This assessment is supported by Diener (1995:861). Pavot and Diener (1993) found evidence that respondent answers can safely be understood at a cardinal level. There should therefore be few issues with the measurement level of the dependent variable.

gender equality has been reached in many European countries, "Female happiness has declined absolutely and relatively to male happiness. Subjective well-being for females was higher in the 1970's than for males, but has eroded and been replaced by higher subjective well-being for men (Stevenson and Wolfers 2007). Based on this information, it is not necessary to control for gender equality in the model. As stressed by Baron Layard (2005), a Gini-coefficient is used to control for the potential negative effect of high income-inequality on life-satisfaction (UN 2005).

1.4 Results.

Research has shown that around 50 percent of happiness is explained by factors of genetics, personality type, and socialization (Weiss 2008). If this also holds true for life-satisfaction this is a significant decisive factor in evaluating the results. It implies that a model investigating factors exterior to the individual's psyche can only explain half of the variance in life-satisfaction. The results for each of the variables in the analysis are presented in Table 3. To test Hypothesis 4 and Hypothesis 5, an F-test is used. Controversy has surrounded the use of an F-test for a joint test, where some research has shown a preference for χ^2. However, since $\chi^2 = F$ as $N \rightarrow \infty$, and the number of observations in this case is substantial, the two statistics are equivalent. Overall, the model has strong statistical significance and can explain approximately 36 percent of the variance in life-satisfaction (leaving approximately 14 percent unexplained according to Weiss's theory).

The point estimates for the first three hypotheses are in the correct direction and are all strongly statistically significant. To test Hypothesis 4, the joint hypothesis for the two variables of interest, Freedom & Control and Political & Civil Liberties is tested,

resulting in an F statistic of 579.58 which is highly significant, thereby supporting Hypothesis 4. Hypothesis 5 is also tested using an F test for the joint hypothesis of Married and Children. Although Children is not statistically significant at the conventional level ($p < 0.05$), the joint test result is $F = 42.46$, which is statistically significant, leading to support for Hypothesis 5. Hypothesis 6 is tested using the factor Religion. Religion has a point estimate in the correct direction, and is statistically significant as well, leading to support for Hypothesis 6.

Table 3: Regression Results

	Point Estimate	**Stand. Error***	**t- value**	**P>|t|**	**95 percent Conf. Int.**	
Wealth	0.855	0.032	26.96	0.0000	0.793	0.917
Health	0.510	0.017	30.74	0.0000	0.477	0.542
Stability & Security	0.109	0.005	21.55	0.0000	0.100	0.119
Freedom & Control	0.200	0.007	30.11	0.0000	0.187	0.213
Political & Civil Liberties	0.174	0.015	12.01	0.0000	0.146	0.203
Married	0.211	0.033	6.37	0.0000	0.147	0.276
Children	0.013	0.010	1.37	0.1700	-0.006	0.033
Religion	0.129	0.014	9.05	0.0000	0.101	0.157
Controls						
Community Life	0.046	0.013	3.60	0.0000	0.021	0.072
Education	-0.052	0.006	-8.54	0.0000	-0.064	-0.040
Education*Income	-0.027	0.005	-5.24	0.0000	-0.037	-0.017
Gender	0.082	0.023	3.49	0.0000	0.036	0.128
Age	0.003	0.001	3.15	0.0010	0.001	0.005
Gini Coefficient	0.011	0.003	3.70	0.0000	0.005	0.016
Country fixed effects are controlled for, but not presented here. *Standard Errors are corrected for heteroskedasticity. Collins parameter found no problems with multicollinearity. VIF score is 1.56 for the full model. Number of Observations = 24910 F = 321.78; Probability > F = 0.0000 R-squared = 35.92 percent						

Focusing on the point estimates, the following examples are helpful as a description of the results. For all examples a person with average life-satisfaction (6.67)

is used. For Hypothesis 4, freedom & control over one's life, if an individual's score increased from the lowest (1) to the top-score (10), the person will increase his life-satisfaction score to 8.47 resulting in a change from the mean to the top 15 percent of respondents. The result for Hypothesis 6, the factor Religion, indicates that the average person's life-satisfaction will increase to 7.31 if an individual moves from the lowest to the highest score. A person that marries will increase their life-satisfaction score to 6.89. Having children is significantly correlated with life-satisfaction only at the 90th percentile CI. The strongest relationships, in addition to control over one's life, are for wealth and health. On the four-scale health measure, a one-interval improvement leads to an increase in life-satisfaction to 7.18. Looking at the controls, individuals are slightly more satisfied with life as they age. The relationships of age and life-satisfaction shows a steady slow monotonic increase from age 25 to 98 years old (the oldest survey respondent). Increased education has a surprisingly strong negative influence on life-satisfaction. This is also true for the interaction between education and income. A person with no education who decides to complete a college degree can expect their score to fall from the mean of 6.67 to 6.21 resulting in a reduction of life-satisfaction to the 35th percentile.

A sensitivity analysis is used to address potential issues in generalizing the results. This is done by repeating the analysis with a new set of observations from prior surveys in 1995 and 2000. The 1995 data set contained more than 80,000 distinct observations from countries that partly differ from the ones used in the 2005 analysis. The variables loaded on the same factors as the 2005 analysis. The regression output was even stronger for the 1995 survey, with an explained variance, as measured by R^2, of 46 percent. The resulting point estimates were also within the confidence interval of this analysis. The data from the 2000 survey indicates similar relationships with an R^2 of 38 percent. The sensitivity analyses provide a strong indication that the population

means and the sample means are very similar. These outcomes offer robust support to the estimated model in this analysis.

1.4.1 Some Descriptive Statistics

Descriptive statistics of the data-sets and a closer look at the regression outcomes reveal important pieces of information that help to qualify and interpret the model. In general, the data indicates that the model is a good approximation and has good applicability to all countries and cultures. This section describes similarities and discrepancies when it comes to the mean and the standard deviation of the dependent and independent variables for each country. This section also takes a closer look at the model's explanatory and predictive power for different countries and investigates the differences.

1.4.1.1 Model Outcomes

Firstly, there are some substantial outliers from the model's predicted average scores on life-satisfaction for each country. Controlling for country-specific factors, the t-scores reveal that of the 53 countries measured in the sample (the 2005 wave) about half differ significantly from the scores predicted by the model (See Appendix). Of the 37 countries where data is available for all variables, there are thirteen countries that score higher and ten countries that score below the model's prediction of life-satisfaction. A notable detail is that all countries in the South-Western Hemisphere score higher than the model's prediction and some of them significantly higher (at the .95 C.I.). This is best exemplified by Peru, the largest outlier. Peruvians are on average 1.3 points (on the 10 point scale) more satisfied with life than predicted. Peru's citizens report a mean score of 7.02, which is above the worldwide average of 6.67. However,

according to the model, Peru should only have a mean life-satisfaction level of 5.7. In Africa, all countries except Morocco (-1.1 points) are more satisfied than the model predicts. In Asia, the countries of Japan, Vietnam, Iran, Turkey, and Indonesia score significantly above the average model predictions, while China and Taiwan are significantly less satisfied than the model's prediction. In Europe and North America, many countries also score slightly lower than the model's predication. Among the OECD countries, Finland and Spain are the only countries that score significantly better than the model predicts.

1.4.1.2 Mean and Standard Deviation of the Variables

Since the model is built on survey data, life-satisfaction, as well as the other variables, represent subjective results, and cannot determine a variable's objective level in a country. The mean score on life-satisfaction varies from 4.46 in Iraq and Rwanda, to 8.3 in Colombia. The worldwide average is 6.67 and the standard deviation is 2.3. The difference in standard deviation of life-satisfaction within countries varies between 1.4 in the Netherlands to 2.79 in Jordan. Ninety percent of the countries have a standard deviation between 1.6 and 2.4 points from their respective means. Countries with higher life-satisfaction are significantly less dispersed around the mean in satisfaction scores relative to countries with lower life-satisfaction. South American countries score highest on life-satisfaction while African countries score lowest. However, both African and South American countries score higher than the model predicts, while Asian, European, and North American countries score lower. The Nederland (1.4), Spain (1.6) and the USA (1.7) have the lowest standard deviation in life-satisfaction scores. African countries (2.3-2.6) have the highest standard deviation.

The mean worldwide score of the independent variable health is 2.84 on a scale from 1 (poor) to 4 (very good). Malaysia, Ghana, Switzerland, and New Zealand score

highest at 3.16, Rwanda score at 2.13 and Eastern European countries (at an average around 2.5) score lowest. African countries have the highest regional score on health (all except Rwanda score over 3). Since health includes both physical and mental health, high African health levels might indicate objective truth as well as a subjective. The worldwide standard deviation of health is 0.85. South Korea has the lowest standard deviation of health at 0.58. Asian countries have lower standard deviations than other countries and African countries have higher standard deviation of health at between .92 and .96. On the scale of Freedom and Control (from 1-10), the worldwide average is 6.99 and the standard deviation is 2.33. Morocco (5.29), Iraq (5.4), Burkina Faso (5.7) and Bulgaria (5.8) score the lowest, and Mexico (8.38), Colombia (8.04), New Zealand 7.91, Argentina (7.87) and the USA (7.7) score the highest. The highest standard deviation is found in India (2.8) and Mali (2.7). The lowest square root of the variance of Freedom and Control is found in Argentina (1.68), Spain (1.72), and the USA (1.74).

The mean number of children reported by the respondents is 4.2 in Jordan and 1.95 in Italy. For Income, which is a factor score and a combination of four variables, the range runs from -2.2 to 2.8. The average score is 0 and the standard deviation of the world sample is 1. Switzerland, Sweden and New Zealand score the highest on Income with an average of 0.8. Rwanda, Burkina Faso and Bulgaria score the lowest with a mean of -0.8. The standard deviation is highest in South Africa and Romania at 1.1. The lowest standard deviation is in Spain and Vietnam (0.63). For Religion, which is a factor combined from seven variables the range is from -2.8 to 0.9, and the mean score is -0.0299. East Germany (-1.54), Vietnam (-1.33), and Sweden (-1.32) score lowest, and Jordan (0.92) scores highest. Middle-Eastern countries appear with the highest religiosity, followed by African and South American countries. Please see Appendix for data from each country.

1.4.1.3 Cultural Influence on Outcomes

Similarities within regions and differences between regions suggest that cultural factors can explain some of the country-specific differences in the model's applicability to life-satisfaction. A good measure to discern cultural differences is Hofstede's (1981, 2005) five dimensional scale of cultural identity. Hofstede identified five cultural dimensions that can be used to categorize differences between countries. These differences influence the way people behave, interact and interpret their surroundings. The five dimensions are Collectivism-Individualism, Power Distance, Masculinity, Uncertainty-Avoidance, and Long-term Short-term Dynamism.

The next paragraphs define these dimensions. The first dimension distinguishes between collective and individual cultural traits. Collectivism is, according to Hofstede (1994:260), "manifested as a close long-term commitment to the member group (family, extended family, or extended relationships). These societies foster strong relationships where everyone takes responsibility for each other." Economically, the group functions like an insurance pool for its members. On the other hand, individualistic societies are cultures in which "the ties between individuals are loose: everyone is expected to look after him/herself and his/her immediate family (1994:261)."

Hofstede defined the second dimension, Power Distance, as the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally (Hofstede 1991: 28). A main reflection of Power Distance is that some societies are more hierarchically organized than others. This hierarchy is expected and supported among all layers of the population.

In the third dimension, Masculinity, cultures can be categorized according to the differences in male and female behavior. In masculine societies men are very assertive and competitive, and very different from women's values of caring and modesty. In less

masculine societies men are more modest and caring, and have values similar to women. “The women in “feminine” countries have the same modest, caring values as the men; in the masculine countries they are somewhat assertive and competitive, but not as much as the men“ (Hofstede 2004:81). The difference between male and female is therefore larger in masculine societies.

The fourth dimension, Uncertainty Avoidance, is concerned with society's tolerance for uncertainty and ambiguity. Uncertainty avoiding cultures try to minimize the possibility of ambiguity through strict laws and rules, safety and security measures, and by a belief in absolute truth. “People in uncertainty avoiding countries are also more emotional and motivated by an inner nervous energy” (Hofstede 2003). The opposite type, uncertainty accepting cultures, is more tolerant of differences, has as few rules as possible, and appears more relativistic by allowing many beliefs and value-systems operating within society. People within uncertainty accepting cultures are more phlegmatic and contemplative, and not expected by their environment to express emotions (Hofstede 2003).

The final dimension, Long-Term Orientation (LTO) versus Short-Term Orientation “deals with Virtue regardless of Truth. “Values associated with Long-Term Orientation are thrift and perseverance; values associated with Short-Term Orientation are respect for tradition, fulfilling social obligations, and protecting one's ‘face’” (Hofstede 2005). Countries are separated based on their scores on these values. As illustrated below and in the Appendix, the inclusion of these values can explain part of the differences in the explanatory power of the model between countries. If these cultural variables where to be included they would also enhance the explanatory power of the overall model by 14 percent from the current 36 percent.

Cultures can also be usefully separated based on a one-dimensional scale of Low-Context vs. High-Context cultures (Hall 1976). Cultures that score high in Individualism, low in Uncertainty Avoidance and Power Distance, medium to low in Masculinity and Long-term Short-term Orientation are considered to be low-context cultures. Other cultures are higher context. "High context refers to societies or groups where people have close connections over a long period of time. Many aspects of cultural behavior are not made explicit because most members know what to do and what to think from years of interaction with each other" (Bear 2008). [16] High-context cultures have fewer verbally explicit communications, less written/formal information, more internalized understandings of what is communicated, multiple cross-cutting ties and intersections with others, long-term relationships, strong boundaries- (who is accepted as belonging vs. who is considered an "outsider"); knowledge is situational, relational. Decisions and activities focus around personal face-to-face relationships, often around a central person who has authority.

"Low-Context refers to societies where people tend to have many connections, but of shorter duration or for some specific reason. In these societies, cultural behavior and beliefs may need to be spelled out explicitly so that those coming into the cultural environment know how to behave" (Bear 2008). Low Context societies are rule oriented, people play by external rules, more knowledge is codified, public, external, and accessible. There is sequencing, separation--of time, of space, of activities, of relationships, and there are more interpersonal connections of shorter duration. Knowledge is more often transferable, and task-centered, decisions and activities focus around what needs to be done with a division of responsibilities.

[16] Culture at Work Jennifer E. Bear (2003)

When it comes to Hofstede's cultural dimensions, Individualism is not correlated to life-satisfaction outside the very high range. However, there is a statistically significant (0.9 C.I) tendency for countries with a highly individualistic culture to score lower than the model's prediction (See Table 4 below). This suggests a non-linear relationship between Individualism and life-satisfaction. High individualism is determined as having a higher score than 65 on Hofstede's Individualism-Collectivism dimension. A reason that highly individualistic cultures are less happy, ceteris paribus, might be that some collectivist traits supply human needs that are absent in highly individualistic cultures. The second dimension, Power Distance, was found to be positively correlated to life-satisfaction, but the relationship is not significant at the conventional level (.05 p-level). Hofstede's third dimension, Uncertainty Avoidance, is positively, but also not significantly correlated to life-satisfaction. On the other hand, the countries with high Masculinity score significantly better than the models prediction (0.9 C.I).

The second most significant finding came for countries with a high score on Long-term Short-term Orientation. Except Japan and Vietnam, these countries were less satisfied with life relative to cultures with a low score on this dimension, many of them significantly less satisfied. Confucian countries are in a league of their own on Long-Term Short-Term Orientation and for this reason the dimension is also called Confucian Dynamism. West Africa scored very low on Long-Term Orientation, while East African, European, and North Africa score medium to low.

Hofstede's cultural factors can explain approximately 88 percent of the variation in standard deviation of life-satisfaction among countries (not pictured in the table). Among the notable findings is the fact that Masculine cultures, and cultures with a higher Power Distance, have a significantly higher standard deviation than average.

The standard deviation is falling for countries high on Uncertainty Avoidance, Individualism, and Long-Term Short-Term dimensions. The exception is for the extremely individualistic countries, these countries have a non-significant higher standard deviation.

Table 4: Cultural Impact on Average Life-Satisfaction

Dependent: Average Life-Satisfaction	**Point Estimate**	**Stand. Error***	**t- value**	**P>|t|**	**95 percent Conf. Int.**	
Collectivism Individualism	.0195039	.0899025	0.22	0.831	.208382	-.169374
Power Distance	.1916592	.1396821	1.37	0.187	.4851205	-.101802
Masculinity	.0898607	.0518612	1.73	0.100	.0190956	.198817
Uncertainty Avoidance	.0870773	.0726181	1.20	0.246	-.0654877	.239642
Long-term Short-term Orientation	.18372	.0784279	2.34	0.031	.348491	.018949
High Individualism	9.795956	2.545907	3.85	0.001	15.14471	4.44720
Constant	11.82916	9.93857	1.19	0.249	-9.051006	32.7093

*Standard Errors are corrected for heteroskedasticity. Collins parameter found no problems with multi collinearity. The VIF score is 1.98 for the full model.
Number of Observations = 25
F = 4.55; Probability > F = 0.0056
R-squared = 36.00 percent

1.4.1.4 Explanatory Power (R^2) of the Model

The amount of variance explained by the model in this chapter is significantly larger for masculine countries and significantly lower for cultures that prefer to avoid uncertainty (See table 5). This is a finding that corresponds to Hofstede's theory. Masculine cultures are more concerned with achievement and relate their well-being to material circumstances. As examples of countries with high Uncertainty Avoidance, the model shows a markedly lower explanatory power for Latin-American countries. All variables load significantly also for these countries, but the R-square is from 15-30 percent as opposed to 30-55 percent for other countries. In Latin countries it seems that people have deeper internal cultural and perhaps personal attributes that ensure that their life-satisfaction is more independent of material factors. For all other cultural

dimensions, the influence on the R-Square is negligible. Table 5 below illustrates the regression output.

Table 5: Cultural Impact on Percent Explained Variance

Dependent: % Explained variance for each country	**Point Estimate**	**Stand. Error***	**t- value**	**P>|t|**	**95 percent Conf. Int.**	
Collectivism Individualism	.0573577	.1067894	0.54	0.595	-.275450	.160735
Power Distance	-.0573577	.1067894	0.54	0.595	-.275450	.160735
Masculinity	.1552239	.0820181	1.89	0.068	-.012279	.322727
Uncertainty Avoidance	.1362776	.0580201	2.35	0.026	-.254770	-.01778
Long-term Short-term Orientation	.037159	.0677739	0.55	0.588	-.101253	.175571
High Individualism	3.826232	4.792366	0.80	0.431	-5.96108	13.6135
Constant	33.19644	11.42537	2.91	0.007	9.862719	56.5301

*Standard Errors are corrected for heteroskedasticity. Collins parameter found no problems with multi collinearity. The VIF score is 1.98 for the full model.
Number of Observations = 37
F = 2.24; Probability > F = 0.0666
R-squared = 16.49 percent

1.4.1.5 Independent Variables Impact on Prosperity in Different Cultural Dimensions

Health and Freedom. Health and the variable Freedom and control over one's life are significant positive factors in life-satisfaction throughout all countries and do not depend on cultural attributes. Health and Freedom seem to be uniformly appreciated with strong magnitude in every culture.

Marriage. In cultures where Uncertainty Avoidance is high, marriage is a significant positive contributor to life-satisfaction. In countries where the Power Distance is higher, the positive effect of marriage on life-satisfaction is still significant, but significantly lower than in countries where Uncertainty Avoidance is high. Marriage only scored negative (non-significant) in Egypt, Indonesia, Malaysia, Zambia and Ghana.

Education. In cultures where Uncertainty Avoidance is high, increased education has a significantly stronger magnitude of negative contribution to life-satisfaction than in

countries that are less risk adverse. This same relationship is also found between masculine cultures and education.

Children. In countries that are more individualistic and masculine oriented, people are more satisfied when they get children, although the difference is never significant.

Sex. Women are happier in countries where the Power Distance is higher, and less happy relative to men in countries which are more risk adverse. Women could be expected to be less happy in masculine societies, but this expectation did not materialize.

Age. In risk adverse countries, increased age has a significantly less positive effect on life-satisfaction than in more risk-taking cultures. Age is positive for life-satisfaction in individualistic and masculine countries.

Religion. Religion has a relative significant positive effect in countries with a high Long-term Short-term Orientation. Religion also has a significantly more positive effect on life-satisfaction in cultures where Uncertainty Avoidance is higher. For the other dimensions there is no difference in the positive influence of religion. One interesting finding for religion, however, is that although religion is a significantly positive factor for life-satisfaction, this is not true for countries where animistic religions are dominating, like in most African countries. Although not significant, religion has a weak negative influence in many African countries.

Income. An interesting finding for income is that although every country, except Poland, shows a significant positive correlation between life-satisfaction and income, this relationship diminishes with increasing income levels. People in high income countries value income less than people in low income countries. Another interesting finding is that in countries where the dimension of Masculinity is strongly present, income is significantly higher valued than in countries with feminine values. Also, in countries where risk aversion and Power Distance is higher, income is less valued.

Political and Civil Liberties. In countries where masculine values are stronger, Political and Civil Liberties are valued higher than in other cultures.
Community Life. The only significant finding here is that community life is valued lower in more individualistic countries. This might be because there is already high organizational activity in these countries and there are diminishing returns to organizational memberships. Although not significant, community memberships are also less valued in masculine and hierarchical cultures.

1. 5 Discussion of the Findings

So far, this research has added to the evidence that wealth is important to individual prosperity. The status of income as a significant contributor to life-satisfaction, has been questioned by Lane (2000), Layard (most of his work), and Easterlin (various papers 1973-2008), among others. The results in this study have provided evidence that the failure to find income significant, or at low significance, is due to the absence of variables like religious beliefs and family life that are often operating in a negative relationship with income. The positive coefficient on the GINI-measure supports the evidence by Stevenson and Wolfers (2007) that absolute rather than relative values of income are important. However, contrary to Stevenson and Wolfers, the results here indicate that there are diminishing returns to income at high income levels.

This research has provided some very notable evidence that is absent from other measures of Quality of Life. These other measures will be discussed in more detail in Chapter 2. First, the robust results of this analysis provide further evidence that freedom and control over one's life are important factors in an individual's life-satisfaction, and for one's prosperity and well-being. Family life and religious beliefs

are also positive contributors to life-satisfaction. These factors are usually not included in any of the established prosperity indexes. Although community interaction has positive effects on life-satisfaction, it appears to be less than some scholars suggests (Putnam 2004). A considerable surprise is that education has a relatively strong negative impact on life-satisfaction. Education is included as a positive component in many prosperity indexes. Also, analyzing the country-specific factors, support for Diener's theory (2008) that Confucian countries are less happy than Latin countries is indicated, ceteris paribus. The only exception is Vietnam and Japan.

The results presented in this chapter imply that a population's life-satisfaction may improve or decline based on variation of the variables estimated in this analysis. This is particularly true when one considers other research that uses instrumental variables to determine the direction of the relationships (Stevenson and Wolfers 2007). Although it cannot be concluded that these factors are exclusive, nor can one be absolute about their relative weights, the results of this analysis establish that multiple factors contribute to prosperity. This is an indication that traditional measures like the GDP and the HDI are insufficient to categorize human prosperity.

By replacing the subjective survey variables with objective replacements, the life-satisfaction outcome substantiates the creation of an index of prosperity. This index may give valuable feedback to policy-makers. It may also be useful in strengthening competition between political units at international, and if disaggregated, potentially at local levels. Another consequence of the outcome of this research is that it implies that countries like China, that enjoy economic growth and increased wealth, cannot reach high life-satisfaction as they oppress the freedoms of their populations. This is also applicable to the Kingdom of Bhutan, where the King was among the first to reject that increased income leads to increased prosperity. The King cannot claim that his

totalitarian reign makes people more satisfied. In fact, his limitation of freedoms decreases life-satisfaction in the population. Comparing the results from the first surveys (1990-1995), with the 2005 survey, one can also reject the "set-point" theory of life-satisfaction, in which every person is presumed to have a satisfaction level that he or she goes back to over time (Easterlin 2003). The World Values Survey illustrates that of the 40 countries that have been followed for three decades, 35 of them have experienced increased life-satisfaction levels, five show falling levels, and Australia stayed constant.

Based on the evidence, there appears to be ample grounds for governments to study the outcomes of this and similar research. From a political perspective, it is natural to perceive that an un-weighted sum of interval level welfare could be created with the purpose of comparing policies numerically by using the index in evaluation of policies.[17] This might be useful, but there are some objections to this reasoning.[18] Based on the uncertainties in the statistical model, the possibilities of unintended consequences, and the difficulty in predicting secondary effects, more research is needed before such a procedure could have a successful outcome.

As an example, by using standardized coefficients, one could determine an optimal size of government taxation with the purpose of providing high-quality healthcare to individuals. As a negative, this intervention would reduce GDP and personal freedoms. The optimal solution to this inherent trade-off could be found by using the model. However, there are also secondary effects that are not addressed by the model. From the demand side, people who receive “free” health care would face reduced incentives to avoid high health care costs. Without competition among

[17] Using the Beta coefficients to determine optimal policies.
[18] Many of these objections with examples can be found in Frey and Stutzer (2007).

suppliers, on the other hand, health care quality would also fall. The model cannot calculate these secondary effects and might therefore give the wrong policy advice.

Another example is that the results indicate that governments should reduce their investments in education. However, education has positive effects on economic growth and health levels. Secondary effects taken into account, direct policy interventions to reduce investment in education might result in negative outcomes. Accordingly, it is not possible to calculate the exact social optimal investment in education, health-care or other policy areas based solely on the model in this dissertation.

Another problem associated with life-satisfaction maximization by government is that people themselves have different utilities. Some people adapt easier to physical difficulties while some adapt better to economic difficulties and so forth. Consequently, the ones who strongly object to taxation are in a worse position than people who do not have these objections. By life-satisfaction maximization, the tax-burden should be carried by people who are not concerned about material values, but the determination of which individuals is an insur3mountable task. Frey and Stutzer (2007:15-16) showed that when individuals know that the life-satisfaction level they report influences the actions of politicians, they have an incentive to "play the system." Research illustrates that the "observation of a system fundamentally disturbs it."[19] "Individuals will misrepresent their life-satisfaction levels in order to influence government policy in their favor." Theoretically, Arrow's theorem (1951) provided evidence that it is not possible to organize in a democratic society an optimal social welfare structure.

[19] The Heisenberg Uncertainty Principle.

The theory associated with government failure--in particular problems associated with direct and indirect democracy and bureaucratic theory--conclude that there are many more obstacles to favorable outcomes. The idea that government is a benevolent dictator (assumed in most macroeconomic models) is too simplistic. Politicians have to cater to their own re-election, interest group pressures, ideologies, and their constituents' interests. This mixture of incentives and obligations is hardly ideal for maximizing social welfare. Adam Smith warned against the problems of bureaucracy in improving welfare. In *The Theory of Moral Sentiments* (1759), "The man of systems… imagines that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board; he does not consider…that in the great chess board of human society, every single piece has a principle of motion of its own." Care is therefore needed in assessing individual life-satisfaction within the society. This is exemplified in the social theory of Friedrich Hayek in "*The Use of Knowledge in Society*" (1945), where he asked the question "are we more likely to succeed in putting at the disposal of a single central authority all the knowledge which ought to be used but which is essentially dispersed among many different individuals, or in conveying to the individuals such additional information as they need in order to enable them to fit their plans with those of others." Within its limitations, the results of this chapter support the latter.

A conclusion to the above discussion may be that government cannot easily maximize social welfare, but can provide better opportunities for citizens to optimize their own welfare by limiting government interventions to situations where secondary effects can reasonably be calculated. This would also increase freedom in society. Governments should therefore focus on improving governance structures and institutions as well as policies. In the *Nicomachean Ethics* (350 B.C), Aristotle said that, "Lawgivers make the citizen good by inculcating habits in them, and this is the aim of

every lawgiver; if he does not succeed in doing that, his legislation is a failure. It is in this that a good constitution differs from a bad one." This suggests institutional structures that are of high quality and allows for the diversity that is present in individual preferences. The next section attempts to build an index of national human prosperity based on the results in this section. The work on this index will help to further illustrate country-specific differences to the concept of prosperity and its causes.

Section II: A Human Prosperity Index

2.1 Theoretical Review

Before starting to construct and assemble an index, it is necessary to review the literature and to critique the different measures of prosperity used in the world today. The analysis in the first section has built a solid foundation for this evaluation.

A range of measures of prosperity have been proposed and utilized in the past decades. These include GDP, the Human Development Index (HDI), the ISEW index, The Gross National Happiness Indicator, the Quality of Life Index and the Legatum Prosperity Index. This section discusses the most significant contributions. The indexes rank in complexity and have various strengths and weaknesses.

2.2.1 Gross Domestic Product (GDP)

A crude early measure of prosperity was income, often measured as the gross domestic product of a country. This was a natural choice as economic growth had long

been considered an important goal of economic policy. Yet, a few decades ago some segments in academia and beyond started to argue against raising the material standard of living, claiming that it would do little to raise well-being (Stevenson and Wolfers 2008). The King of Bhutan was quoted saying: ”my country does not score very high on the living standard index, but few countries have happier people.” The King decreed that “gross national happiness,” rather than economic growth, should be the guiding principle of his nation.[20]

This statement got much publicity in the West. The fact that Bhutan appeared to be as happy as many Western countries was, in certain academic circles and political strata, taken as proof that free-markets had failed in creating happiness for its citizens and that dictatorships could do equally well. The former president of India A. P. J. Abdul Kalam held that "a country's economic growth should always be guided by a 'national prosperity index' that includes components like improvement of quality of life and adoption of a value system derived from our ancient civilization besides GDP."[21] Theoretically, these arguments are based on the so-called Easterlin-Pardox. Richard Easterlin (1974) explicated that despite the existence of a relationship between income and well-being in individual data and across countries, “there was little evidence that their populations got happier.” Easterlin concluded that happiness at a national level does not increase with wealth once basic needs are fulfilled.

There are also more substantive problems with the precision of the use of GDP. A product like a personal computer, costs less today than it did 30 years ago, and

[20] GNH was coined by Bhutan's King Jigme Singye Wangchuck in 1972 in response to criticism that his economy was growing poorly. This is noted in Eric Ezechieli, "Beyond Sustainable Development: Education for Gross National Happiness in Bhutan" http://suse-ice.stanford.edu/monographs/Ezechieli.pdf, Stanford University, 2003.
[21] As noted in the magazine Rediff India http://www.rediff.com/money/2007/dec/19kalam.htm.

therefore reflects a lower value in GDP data. Nevertheless, the usefulness and satisfaction one receives from the same product has proliferated. GDP in this regard underestimates well-being in a society. On the other hand, components of GDP are also non-relevant or detrimental to prosperity. When GDP is used as a measure, resources spent on fighting crime, environmental pollution, obesity or family malfunctioning would propose that prosperity is enhanced in a country whereas the reverse is true. GDP in these instances overrates the actual well-being in a society.

One of the foremost critics of GDP as a measure is University of Oxford professor Sir Richard Layard. Baron Layard says that people measure income in relative terms more than in absolute terms, turning wealth maximization into a zero-sum game. Baron Layard's perception of happiness fits into the Felix category of happiness that was defined in the introduction. Layard also says that bounded rationality prevents individuals from calculating their optimal labor-leisure preference resulting in overwork. In addition, he says that possessions have diminishing value over time. Layard therefore encourages governments to tax people to alleviate the negative focus on income. Deaton (2008) argued that science has not settled the issue of happiness and increased income in developed countries.

Similar to Baron Layard, Clark, Frijters, and Shields, (2008:96) maintained that, as people are able to satisfy basic needs, the relationship between income and happiness is basically a flat curve with additional income only buying small amounts of happiness. Kahneman and Tersky (1979) also provided evidence for a more complex preference function then the traditional "Homo Economicus." In experiments they have found that fairness and altruism can be even more important than self-regarding maximization. As the previous chapter provided evidence for, the concept of prosperity is much more complex then what GDP can account for through acquisition and utilization.

Nonetheless, the evidence supports wealth as an important factor for life-satisfaction both in relative and absolute terms.

2.2.2 The Human Development Index (HDI)

Based on some of the above assessments, and in order to build an enhanced index to measure progress in developing countries, the United Nations created the Human Development Index (HDI). The index was developed in 1990 by Pakistani economist Mahbub Ul Haq, Indian economist Amartya Sen and Sir Richard Jolly. The HDI is a composite measure based on the indicators income (as measured by gross domestic product), education (as measured by primary and secondary enrollment), and longevity (as measured at life expectancy at birth). This combines into a tripartite measure of human prosperity. The Human Development Index's strength rests in its simplicity, but this minimalism is also its main weakness. Because of its limitations, Amarty Sen, one of the developers of the index, described it as a "vulgar measure."

The HDI can measure the difference between developing and developed nations relatively well. However, to developed nations the index does not provide much essential information. The challenges that Europe, North America and increasingly some Asian and South American nations face are not illuminated by the HDI. These countries already have high literacy rates; longevity is growing with relative stability and the HDI operates with strong diminishing returns to income levels above the threshold of $5000. The evidence from the previous chapter indicate that the HDI does not qualify as a measure of life-satisfaction because of its focus on education, lack of recognition of variables like freedom, religion, family life and because income is not valued above $5000. Furthermore, the high correlation between GDP and HDI shows that not much new information is really added with the HDI measure relative to GDP.

The weakness of the HDI primarily comes to the fore when the UN and other organizations use it for purposes it was not originally intended to.

2.2.3 The Gross National Happiness Metric

Following the earlier mentioned "Genuine Progress Indicator," which spun off from Bhutan, a more developed second-generation "Gross National Happiness" (GNH) concept was instigated in 2006 by Med Yones, the President of the International Institute of Management. This measure treats happiness as a socioeconomic development metric. By tracking seven areas, this subjective metric measures social and economic development (White 2007).[22] The first metric is Economic Wellness, indicated via direct survey and statistical measurement of economic metrics such as consumer debt, average income to consumer price index ratio and income distribution. The second is Environmental Wellness, indicated via direct survey and statistical measurement of environmental metrics such as pollution, noise, and traffic. The third is Physical Wellness, indicated via statistical measurement of physical health metrics such as severe illnesses.

The fourth metric is Mental Wellness, indicated via direct survey and statistical measurement of mental health metrics such as usage of antidepressants and rise or decline of psychotherapy patients. The fifth is Workplace Wellness, indicated via direct survey and statistical measurement of labor metrics such as jobless claims, job change, workplace complaints and lawsuits. The sixth is Social Wellness, indicated via direct survey and statistical measurement of social metrics such as discrimination, safety, divorce rates, complaints of domestic conflicts and family lawsuits, public lawsuits and

[22] http://www.le.ac.uk/users/aw57/world/sample.html *A Global Projection of Subjective Well-Being: A Challenge to Positive Psychology*?

crime rates. The final metric is Political Wellness indicated via direct survey and statistical measurement of political metrics such as the quality of local democracy, individual freedom, and foreign conflicts. The GNH metric is prone to subjectivity and manipulation by government. One example of manipulation comes from Bhutan:

> "*Critics allege that because GNH depends on a series of subjective judgments about well-being, governments may be able to define GNH in a way that suits their interests. In the case of Bhutan, for instance, they say that the government expelled about one hundred thousand people and stripped them of their Bhutanese citizenship on the grounds that the deportees were ethnic Nepalese who had settled in the country illegally. While this would reduce Bhutan's wealth by most traditional measures such as GDP, the Bhutan government claims it has not reduced Bhutan's GNH*."[23]

Many of the categories are impossible to compare across nations as countries have different procedures of recording these statistics. In many countries these statistics are also underreported or entirely missing.

2.2.4 The Quality of Life Index

The Economist's *Quality of Life Index* was published once in 2005. The Economist rejects subjective well-being because it is conceptually vague and difficult to operationalize. The index is composed of nine determinants of quality of life. The first is material well-being measured by GDP per person. The second is health measured as life expectancy at birth. The third is political stability and security. The fourth is family life measured as the national divorce rate converted into an index of 1 (lowest divorce rate)

[23] http://en.wikipedia.org/wiki/Gross_national_happiness.

to 5 (highest).[24] The fifth is community life in the form of a dummy variable taking the value of one if a country has either a high rate of church attendance or trade union membership and zero otherwise. The sixth is climate and geography measured at latitude to distinguish between warmer and colder climates. The seventh is job security measured as the percentage unemployment rate. The eighth is political freedom measured as an average of indices of political and civil liberties. The ninth is gender equality measured as the ratio of average male and female earnings.

The Economist states that they make their assumptions on what indicators to include in the index based on answers to world-wide surveys in 1999 and 2000. Unfortunately there exists no reference to which data or to what surveys they used in the four page article published in 2005.[25] On the face of it, the Economist index is among the most theoretically sound of all the measures and it avoids some of the ideological bias present in other indexes. Despite this, the index is not entirely without problems.

Analysis of the World Values Survey shows that valuation of job-security, job-accomplishment or job-income constitutes a principal component. However, people that valued job accomplishment did not value job security. Job-security is correlated with traditional values and risk aversion. Since job security is antithetic to job income and job accomplishment, job-security cannot be considered an objective variable measuring life-satisfaction. Job security satisfies only the part of the population that value security over income or accomplishment. The Economist Index also adds gender equality as a measure of life-satisfaction. However, ceteris paribus, as gender equality has increased in the western world, happiness has fallen for women (Stevenson and Wolfers 2007).

[24] This dissertation questions why the Economists reduce the measurement level in all of their variables. This makes the model loose valuable information. It is best to keep the highest measurement level possibly.
[25] The Economist Intelligence Unit's *Quality-of-Life Index* (2005).

People are also relatively speaking happier in countries which do not score very high on gender equality. Gender equality is a cultural variable and appear as one of Hofstede's five dimensions that will be discussed in the fourth chapter.

2.2.5 The Legatum Prosperity Index

The Legatum Index was first published in 2007. It addresses a broad set of objective variables. For 2008 it includes 22 key indicators for 100 countries. The index ascertained a Material-Wealth sub-index and a Life-Satisfaction sub-index that is combined into a single score of a nation's prosperity level. Included in the material wealth index is growth in invested capital, growth in years of secondary education per worker, a governance index, natural resource exports as a percentage of GDP, foreign aid as a percentage of GDP, the competitiveness of local markets, high technology exports as a percentage of GDP and the efficiency of the bureaucracy.

The Legatum Index inhabits soundness in its choice of objective variables rather than subjectivity. Improvements in many of these variables undoubtedly prosper the citizens. Notwithstanding, most of these variables are indirect causes and outcomes of prosperity and do no measure the prosperity aspect directly. A good example of the inherent confusion is the variable 'natural resource exports as a percentage of GDP.' Some historical evidence illustrates that a reliance on raw materials has not always been a vehicle for prosperity. The Middle Eastern reliance on oil, African reliance on coffee, gold, diamonds and timber, and Spain's medieval hoarding of gold and silver comes to mind. These are all relevant examples of how raw material reliance can end with an economic phenomenon called the Dutch-disease. Increased tax revenue leads to a bloated public sector and a small non-competitive private sector entangled in the large public sphere.

However, there are also counterexamples; Australia is a very successful agricultural nation and Norway is a successful oil exporter. Therefore, with good governance, natural resource reliance does not have to be an Achilles heel--quite the contrary. Raw-material reliance is usually a problem in countries with weak political and economic institutions as it gives easy access for corruption leaving poor governments in power. Economically it can be a problem even for rich countries as they become too dependent on the export earnings and the economy becomes stagnant. The Dutch disease as a phenomenon should rather be attributed to a large influx of foreign currency increasing the real exchange rate rather than attributed specifically to the size of the natural resource endowment.

A country should not focus all its resources on high technology products when it has a natural comparative advantage in food production, minerals or energy resources (David Riccardo 1844). This is not to disregard the benefits of diversification, but comparative advantage must not be sacrificed as long as this is a nation's best long term path to prosperity. Raw materials might correlate to prosperity, but is in any case not a measure of prosperity. Similarly, the variable growth in invested capital is rather an outcome of prosperity and not a direct measure of prosperity. From a theoretical perspective, the Legatum index, therefore, makes for a problematic approach to the topic of prosperity. Although not to the extent of the the ISEW and the GNI, the Legatum index sometimes appears to be too ideologically biased to be considered an objective measurement of prosperity. However, as a cumulative discussion on issues related to prosperity--in particular economic ones--the Legatum index represents a useful contribution.

2.2.6 The ISEW Index

The ISEW index incorporates factors such as: (1) equity and fairness of income distribution; (2) net durable capital growth; (3) national economic self-reliance (how much a nation is dependent on exports such as “cash crops” or imports such as foreign oil); (4) natural resource depletion; (5) environmental damage; (6) nonmarket transactions (including household work and the “informal” sector, such as gifts, reciprocal exchange, the "black market," and barter); (7) the amount and quality of leisure; (8) the extent of preventive public health measures (such as sanitation, inoculation, and disinfection); (9) “human capital” (especially education and training); (10) infrastructure (such as mass transit, telecommunications networks, and scientific R & D facilities); (11) energy efficiency (meaning productivity per KWh of energy used); and (12) the level of public safety and services. These are all considered positive factors.

Subtracted from the ISEW are various negative “externalities” and hidden costs that are often invisible within the formal economy. These include: (1) costs of advertising (if you spend money to advertise it, then it is not worth buying); (2) pollution; (3) land loss (desertification, loss of wetlands, soil erosion, and loss of croplands); (4) uncontrolled urbanization (so-called “suburban sprawl” also); (5) unnecessary commuting (no matter how 'smart' roads are in routing traffic and reducing congestion); (6) "defensive" or responsive/reactive health spending; (7) conspicuous consumption (especially of non-durable, non-recyclable, “junk” goods); (8) the costs of controlling crime (including the expenses of police and prisons); (9) military production (no armaments ever increase anybody's welfare); (10) "sin" production (of goods such as addictive drugs, alcohol, cigarettes, unhealthy food, and other things that lower productivity); and (11) "non-services" where someone is paying somebody else to

do something that they are fully capable of doing themselves, such as buying their groceries, simply because they do not have the time.

Indexes like the ISEW, although sophisticated and addressing important issues raise serious concerns because of their subjectivity and near impossibility of effectively measuring. There are problems with nearly all of the indicators. First, advertising serves information purposes and is therefore not only a negative factor. Pollution is very difficult to measure. Even agreeing on a definition of pollution is contentious (global warming debate). Uncontrolled urbanization is a very subjective term. The definition of defensive health spending is changing continuously as researchers determine whether diseases are genetically determined or the results of life choices. The high cost of controlling crime can be determined to be positive if this implies that government takes this issue seriously. In Venezuela the cost of controlling crime is low, but it is among the most unlawful countries in the world. The question of military production is also very contentious. A strong army helps prevent foreign aggression and therefore aid its citizens in feeling safe. Section One provided evidences that security from war and conflict is a very important factor in well-being. Investment in military technology also creates spillover effects in product and process innovations to other industries. The category Non-services are held to be negative because people should not pay others to do something they can do themselves.

However, there is no doubt that many people are happy to outsource their laundry, cleaning, roof repair or plumbing. This could therefore be considered a result of prosperity not a detriment to prosperity. This fact is just a result of the specialization of the economy and creates increased employment. A high level of public safety and services could be counterproductive in the long run as public choice theorists held that a great level of government influence would be ineffective and counterproductive by

crowding out more efficient private investment and non-profit initiatives.[26] In effect, the index suffers in that it struggles to define prosperity and includes variables that are impossible to measure and sometimes have the opposite effect of the assumptions made by the ISEW.

To conclude, Eric Neumayer (2001:2), at the London School of Economics, argued that:

> *ISEW lacks a sound theoretical foundation... their conclusions are highly dependent on certain key and rather arbitrary assumptions about the weighting of income distribution, the valuing of the depletion of non-renewable resources and long-term environmental damage and the neglect of technical progress and increases in human capital. Third, the ISEW and their authors in criticizing GNP for its deficiencies as an indicator of welfare miss the point since GNP was never thought of as providing this function by its founders. Finally, the ISEW rests on a methodological inconsistency; the ISEW meshes together the measurement of two entities, current welfare and sustainability, that should be kept separate. This is because an indicator of current welfare ideally consists of items that are not relevant for questions of sustainability.*

The above discussion of indexes and measures provided examples of the difficulties in this field, but also the opportunities to improve on previous failings and limitations and create a better more objective measure. The following section constructs a new index of national human prosperity.

[25] Gordon Tullock, Murray Rothbard, James Buchanan.

2.3 A New Index of National Human Prosperity

The regression result in the previous chapter creates a solid theoretical foundation for the components of an index of human prosperity. Such an index is developed in this section. In addition to some of the control variables, the six hypotheses all appeared strongly correlated to Human Prosperity. In order of magnitude of influence these are Freedom (political, civil and economic), Wealth, Health, Security & Stability, Religion and Family Life. When combining these into an index, a measure of prosperity that is more comprehensive than the current GDP or Human Development Index (HDI) and more theoretically sound and realistic than the Legatum and the ISEW-Index, takes form. The weights for each variable in the index are determined by standardizing the coefficients in the regression output from the previous chapter.

For each variable one objective indicator is chosen. For Wealth, median GDP per capita from the CIA's *The World Factbook* is used. GDP is weighted 19 percent in the model. For Health, life expectancy at birth is used. Median GDP as opposed to mean GDP is used to get a more accurate picture from countries where the gini-coefficient on income is high. The infant mortality and the new HALE measures from the WHO are highly correlated with longevity (HALE correlation = .97) and as such do not add any valuable information.[27] Longevity is weighted 20 percent in the model. For Stability and Security the data from *Global Report on Conflict, Governance and State Fragility 2008* by Monty G. Marshall and Benjamin R. Cole at George Mason University is used. Stability & Security is weighted 14 percent in the model.

[27] http://web.uvic.ca/~econ520/Readings/Masters%20Paper,%20Sari%20Fink.pdf

For Freedom & Control, the index from Freedom House (for civil and political liberties) and the *Economic Freedom of the World Index,* by Gwartney and Lawson is used. The weight for economic freedom is 15 percent and for political freedom and civil liberties the weight is 11 percent. For Religion the variable v192 that measures the importance of God in an individual's life (on a scale from 1-10) from the World Values Survey is used. The ranking of the top ten and the bottom ten is listed in the figure below.

Table 6: Rankings of National Prosperity.

	Score	Country	HDI - Prosperity	Life Sat. - Prosperity	Score	Bottom Rank
1	0.897	Luxembourg	8		0.426	Nepal
2	0.820	Ireland	3		0.416	Niger
3	0.805	Canada	-		0.411	Libyan Arab J.
4	0.803	United States	11		0.410	Nigeria
5	0.792	Switzerland	5		0.406	Madagascar
6	0.791	Singapore	22		0.403	Sierra Leone
7	0.783	Iceland	-6		0.394	Congo
8	0.777	Austria	6		0.389	Guinea-Bissau
9	0.775	Hong Kong	13		0.388	Cameroon
10	0.766	Italy	9		0.385	Ethiopia
11	0.765	Netherlands	-5		0.374	Burundi
12	0.764	Australia	-8		0.369	C. African Rep.
13	0.764	United Kingdom	8		0.358	Malawi
14	0.761	Finland	-2		0.354	Equatorial Guinea
15	0.761	Denmark	-2		0.348	Rwanda
16	0.760	Kuwait	13		0.347	Chad
17	0.760	Emirates	14		0.342	Congo (D.Rep.)
18	0.757	Greece	-		0.320	Cambodia
19	0.752	Spain	-3		0.288	Zimbabwe
20	0.748	Germany	3		0.280	Myanmar

For countries that are not present in the World Values Survey, regional averages are used. The religious component is weighted at 10 percent. For Family Life divorce

rates (UN) are used. For some countries divorce rates are not present in the UN data and approximate numbers from other sources is used as a replacement. Family life is weighted 9 percent.

2.4 Discussion of Findings

Based on these data and methodology, the table above pictures the most prosperous and least prosperous countries (see Appendix 1 for a full list). Disregarding Luxembourg, really not much more than a small city, Ireland is at the top of the rankings. Ireland has reached a high level of material development and freedom while still adhering to traditionalist values according to Inglehart (2005). There appears to be quite a substantial difference between the Human Prosperity Index and the HDI for some countries. In particular, the positive difference for Singapore, the United Arab Emirates, Hong Kong, Kuwait, the United States and Italy are noticeable.

Because the Human Prosperity Index, as opposed to the HDI, takes wealth, and the various forms of freedom into account, Singapore, Hong Kong and the United States score higher. Italy, Kuwait, and the Emirates, score particularly high on religion and family values and averages well on many of the other indicators.[28] While the top of the HDI index is mostly populated by Northern European countries, the Prosperity Index is populated by a wide variety of countries with very different characteristics. In the bottom of the ranking one finds countries with failed formal and informal institutions. Many of these countries are war-torn, military or communist dictatorships. Zimbabwe scores very low in almost every category (even family life). The list in the bottom half is

[28] Italy is really two countries in many regards. The differences between the north and the south are vast. Whereas the North's GDP is 25% higher than the EU average, the South's is 25% lower.

not complete as some less developed countries have been excluded from the index because of missing data.

2.5 Conclusion

The first two chapters have provided evidence that there are regional differences in prosperity levels. Based on the definition of prosperity established here, uniformly high levels of prosperity are found in Northwestern Europe, North America, Australia, New Zealand and some Asian countries. African and South American countries, as well as most Middle Eastern and Asian countries, have lower levels of prosperity. The divergence between these regions is not a recent phenomenon, but has persisted for centuries. The variance in the factor of wealth combined with health, a factor that is strongly correlated to wealth, can explain, directly or indirectly, almost fifty percent of the variance in prosperity that is not explained by attitudes, genetics, or factors of socialization. The lower levels of religious beliefs and family life reduce prosperity in most of the high-income countries. Less prosperous countries score better on these factors and make up for some of the gap in quality of life caused by lower income levels and less freedom. Modernization theory suggests that there exists an adverse relationship between wealth as a phenomenon of modernity on the one hand, and traditional values represented by religion and family life on the other (Inglehart 1997). Strengths and weaknesses of this theory will be discussed in more detail in Chapter Four, but it provides a theoretical foundation for continuing the discussion of prosperity by focusing on the economic subset of prosperity.

The fourth chapter of this dissertation attempts to determine the cause of the dominance and success of the North-Atlantic civilizations from the high Medieval Age to the 21st Century. The third chapter reviews the theoretical frameworks in the

literature that are used to examine the divergence in prosperity. After evaluating the assumptions that these competing frameworks established, an improved set of assumptions is determined through a social analysis (Williamson 2000) of how different components of a society interact and how society develops. The social analysis results in a new framework and is the foundation for a theory in Section 4.5 that attempts to explain and test the differences in economic prosperity found in the previous chapters.

ESSAY II: DETERMINANTS OF ECONOMIC PROSPERITY

Section I: Theoretical Frameworks of Economic Prosperity

An abundance of endeavors have been undertaken in the academic literature attempting to explain how successful societies come about and persist (Smith 1776, Weber 1905, Solow 1956, North 1970, Romer 1990, Diamond 1997, Landes 1998). Notwithstanding, there exists little agreement and established knowledge between the social science disciplines. This disparity is evidenced by the often non-commensurable theories reviewed later in this chapter. Diverging answers appear even within disciplines. From this background, this chapter first attempts to evaluate the ideas possessing the strongest academic dissemination and then proceeds to suggest a new framework for studying economic prosperity.

In the dominant paradigm of economics, the Neoclassical framework, the explanation for economic prosperity has been sought in different types of factor allocations of capital and labor (originating with Solow in 1956). The modified New Growth Models focus on increasing returns to human capital (Lucas 1988, Romer 1990). Scholars from several disciplines also have suggested that geographic location plays an important part through the argument that a tropical location is detrimental to health and economic prosperity. Some historians and political scientists have advocated that the close proximity and competition between major powers in Northern Europe was beneficial to the rise of Europe. Neo-Marxist scholars suggest that slavery and colonial exploitation are the main culprits for divergences in prosperity levels (Thacker 2008). Economic sociologists, such as Max Weber and Talcott Parsons, have suggested that culture and religious beliefs are essential drivers of prosperity. This section begins

with a review of the Neoclassical framework in economics, which is the most widely used framework for understanding economic prosperity.

3.1 Neoclassical Economics

Economics at most universities is taught under the paradigm of Neoclassical Economics (Sears 1991). Neoclassical theories largely build on the assumptions found in 19th century Walrasian economics, founded on Leon Walras's *Elements of Pure Economics* (1877), as discussed below. In addition to Walras, Paul Samuelson is a primary later contributor to this paradigm. In his tremendously influential book *Economics* (1948), Samuelson solidified the Neoclassical framework by emphasizing that economics should be studied based on the principles of physics and applying the tool-set of mathematics.[29] Walrasian economics is a static system within a stable general equilibrium framework. Several explicit theoretical assumptions regarding human behavior, collective action, and social relations sustain the paradigm. Walras's (1877) and Samuelsson's (1948) assumptions will be discussed in the following paragraphs.

In the Neoclassical economy, human agents and organizational actors are self-interested and have only one goal: to maximize their own utility. Agents' preferences are transitive and complete. Agents do not face constraints such as borrowing limits or wealth limitations. The self interest of the actors does not conflict. All actors in the economy are forward looking with complete knowledge and computational capabilities. Consequently, they are not constrained by the availability, or their ability, to gather information and logically deduce accurate suppositions for action. Another consequence of perfect foresight is that there is no room for *ex-ante* opportunism in

[29] The end-result was theoretical models reminiscent of early 19th century geometry, according to Nadeau (2008).

contractual relationships. Since enforcement of contracts is frictionless, *ex-post* opportunism does not occur. Contracts are assumed to be costless, complete (flawless), and fully enforceable.

The firms in a Walrasian economy are treated as exogenous production functions with identical cost curves, no increasing returns to scale, and no coordination problems. Markets are well-functioning and the government is benevolent, omnipotent, and omniscient. In this system, perfect institutional and governance systems arise effortlessly, constrained only by technological limitations. There is no uncertainty in the market and decision makers can assign mathematical probabilities to the scenarios with which they are faced. Therefore, they can calculate risk and adjust behavior. Resources in the economy are allocated by prices, which is the only institutional constraint. The study of the aggregate system is focused on these micro-foundations and is defined as Methodological Individualism by Josef Schumpeter (1908).

Walras and Alfred Marshall, another early foundational theorist, were concerned first and foremost with the logical and mathematical adequacy of the economic model. Marshall's approach (1890) said that "anything that can be varied in the given amount of time must yield to the "Principle of Substitution"; that is, can be explained as a matter of optimizing choice" (Boland 1979:960). Marshall eliminated changes in variables that were impossible to control, such as weather, or variables that changed gradually, such as cultural traditions. These variables cannot be explained with his "Principle of Substitution" and remain unexplained givens or exogenous variables (Boland 1979:959–961).

Early Neoclassical economists, including Ricardo and Keynes, constructed conceptual models whereby they held all but a few variables constant. They argued that

one caused the other in simple monotonic fashions. This led to the belief that decision makers could deduce policy conclusions directly from a highly abstract theoretical model. Economic growth under this paradigm often became a purely technical allocation problem. On long-term growth, Neoclassical economics, represented by Lucas (1988) and Romer (1990), built on Solow's capital/labor model (1953) and suggested that human capital is the source of changes in the economy. Their models left no room for institutional, cultural, or other dynamics. As an example, according to Lucas (1988), South Korea became successful because it invested in human capital, while the Philippines did not. [30]

Central planning led by a benevolent dictator became an obvious solution for achieving optimized outcomes in the Walrasian economy. In his 1928 presidential address to the American Economic Association, F. M.Taylor (Taylor 1929:1) said: "In the case of a socialist state, the proper method of determining what commodities shall be produced would be in outline the same as … under the present economic order of free competitive enterprise" (Bowles 2005). Taylor's assessment is based on the assumptions of the Neoclassical paradigm that ensures that optimal organizational forms and institutions, including prices, always are selected by the planner (government).

The Neoclassical assumptions are logical deductions based on the core and fundamental belief of perfect instrumental rationality.[31] The greatest advantage to the host of assumptions in the Neoclassical framework is the possibility of creating sophisticated mathematical models with closed form solutions (like the general

[30] Contrary to Lucas, the World Bank says that "One partly redeeming facet of Philippine development is the relatively good record in human capital investment, particularly education." http://siteresources.worldbank.org/INTPHILIPPINES/Resources/DB17-Population-June23.pdf

[31] Some scholars make the case that one doesn't need to assume perfect rationality only those economic actors on average make the right decision.

equilibrium models). However, the inflexible assumptions have their drawbacks. Searle (2005:1) illustrates the detachment of the economy from social life under this paradigm; "At no point was it ever suggested that the reality described by economic theory was dependent on human beliefs and other attitudes in a way that was totally unlike the reality described by physics or chemistry." Heterodox economists, including the Old and New Institutional Schools, hold that the assumptions in the Walrasian framework lead to conclusions that are not verified empirically. Friedrich Hayek (1945) suggested that one fundamental problem with a centralized solution is that the information needed by the planner is privately held by millions of agents. These agents have no possibility or even an interest in revealing their preferences to the planner.

Decentralized market structures, however, reveal this information because each actor is responding to his own preferences creating the market price based on these preferences relative to the actor's means and the scarcity of the good. Although private agents are boundedly rational, they are able to set the optimal price of a product. The complete information, and complete contracting assumptions of Walrasian economics, also is unwarranted. Similar to Hayek, John Stuart Mill identified reasons that a centrally planned economy would struggle to achieve optimal economic outcomes. He said that the lack of property rights would reduce worker motivation, innovation, and entrepreneurship.

The Neoclassical framework has been applied to both centrally planned and market economies. However, although more successful than centrally planned economies, newly created market economies also have failed to achieve rapid prosperity and stability in many cases. The problem of the Walrasian framework is illustrated through failed World Bank and IMF policies toward third world countries in the 1970s–1980s. Extensive policy interventions and aid programs were implemented.

Most sub-Saharan African countries ended up with negative GDP growth in this period. The problems of the transformation to market systems in the former communist countries in the early 1990s are another indication that Neoclassical economics offers a limited tool-set for growth creation in developing economies. In a Nobel Prize lecture, Ronald Coase (1992:714) stated (about the former Soviet Republics and Eastern Europe) that "without the appropriate institutions, no market economy of any significance is possible. If we knew more about our own economy, we would be in a better position to advise them."

At least five stylized facts about economic growth generally are accepted in the literature:[32] Stylized Fact 1: Factor accumulation does not account for most of the cross-country differences in the level or growth rate of GDP per capita. (Productivity accounts for much of the unexplained portion.) Stylized Fact 2: Divergence is preferable to convergence (as predicted by the models). There are growing differences in GDP per capita. Stylized Fact 3: Growth is not persistent over time (as predicted by endogenous growth models). Some countries report sustained explosive growth; others vacillate between high growth and stagnation; some grow steadily and some never grow. In contrast, capital accumulation is much more persistent than overall growth. In other words, return to capital has a high variance. Stylized Fact 4: All factors of production flow to the same places, suggesting important externalities. Stylized Fact 5: National policies influence long-term growth. Two more stylized facts have been put forward by institutional economists (North 1970): Stylized Fact 6: A higher standard of the rule of law increases economic growth. Stylized Fact 7: Protection of property rights increases economic growth.

[32] These are the stylized facts declare by Easterly and Levine (2001) that also appear in Lucas (1988).

Despite the Neoclassical paradigm's failure to account properly for these findings, it still is the dominant paradigm in the field of economic development. There are structural and cultural reasons for this dominance. The low-context Western cultures in which most research is produced emphasize classification and specifics at the expense of contextual information and big ideas, according to Hall (1976).[33] This is a tradition that can be traced back to Lineaus. Hall (1976:123) says that there is little focus on overview and high-context integrative systems. "Scientific institutions and committees that referee research grants are set up to deal with and evaluate past research and are miserably equipped to evaluate future research or anything that does not fit the linear paradigms already established."The pathologist Rene Dubos (1962) saw through the fallacy of Apollonian procedures. He said that context should be more emphasized in science. He demonstrated that "micro-organisms raised in sterile, replicable laboratory environments were not the same organisms, but were totally different from those having to meet the challenges of a normal, complex environment" (Hall 1976: 125).

Hall (1976: 125) argued that "the Heisenberg's principle of uncertainty demonstrates that even in the world of molecular physics, the act of observation alters everything." When context matters to micro-organisms, there are grounds to believe that context is important to human action in a complex environment as well. The failure within the Neoclassical paradigm to account properly for empirical findings, as well as institutional and other elements that have been shown to influence long-term growth,

[33] According to a Wikipedia summary of Hall's classification, low-context and high-context refers to a culture's tendency to use high context messages over low context messages in routine communication. In a high context culture, many things are left unsaid, letting the culture explain. Words and word choice become very important in higher context communication, since a few words can communicate a complex message very effectively to an in-group (but less effectively outside that group), while in a lower context culture, the communicator needs to be much more explicit and the value of a single word is less important.

has led to alternative hypotheses on economic development, although some of them still operate largely within the Neoclassical framework. Two of these are geography and trade. In particular, the geographical or natural resource view (another term used), has found adherence by many scholars within the social sciences.

3.2 Alternative Theories: Geography, Trade, Conflict, Exploitation

The geographical proposition argues that the location, including climate and ecology, affect technology and the incentive-structure in a society. The theory emphasizes coincidence and the forces of nature as fundamental factors in the prosperity of nations. Rodrik (2003) says that,

> "*… there is a long and distinguished line of theorizing that assigns a preeminent role to geography. Geography is the key determinant of climate and of natural resource endowments, and it can also play a fundamental role in the disease burden, transport costs, and extent of diffusion of technology from more advanced areas, that societies experience. It therefore exerts a strong influence on agricultural productivity and the quality of human resources*."[34]

In *Guns, Germs, and Steel,* Jared Diamond (1997) presented a biologist's application to development. This theory also is advanced by Jeffrey Sachs (2001). The two are the foremost proponents of the geographical hypothesis among academic scholars. For many reasons, these theories also are entrenched in the general population.[35] Eyeballing a world map leads credibility to the geographical view. Almost

[34] The primacy of institutions (and what this does and does not mean). 01-JUN-03: Finance & Development, Rodrik, Dani ; Subramanian, Arvind Publication: Finance & Development Sunday, June 1 2003

[35] These reasons include the fact that it justifies aid programs, it is culturally relativistic and therefore less contentious to advance, and it fits Marxist doctrine and Darwin's theory of evolution.

all rich countries are located in the Northern hemisphere and most poor countries are clustered around or just south of the equator. Nonetheless, association does not prove causation and the geographical explanation has little empirical support (Subramanian 2003). When controlling for other variables, geography loses its significance.[36] The reversal of fortune principle probably is the strongest argument against geography (Acemoglu et al. 2002), along with the fact that many countries with the highest income and growth rates are not in the Northern hemisphere and also are close to the equator (Singapore, Hong Kong, Taiwan, The Emirates, Botswana, Australia, New Zealand).

A second alternative theory emphasizes the role of international trade as a driver of productivity and income levels. This view stresses that reduced trade barriers create spiraling positive effects like knowledge spillovers, better quality products due to competition, increased markets, learning by doing, clustering benefits, and economies of scale. This represents an integrative view whereby partaking in the global economy is predicted to result ultimately in the convergence of high income levels. Many economies that opened for trade indeed climbed the ladder of technological production. Examples include Taiwan, Hong Kong, South Korea, and lately China and India. Manfred Stadler (1999) explains how the Schumpeterian idea of growth fits the trade hypothesis. Yih-Chyi Chuang (1998) presents a growth theory of trade-induced learning in which both import and export are central to development. It can be hard to measure the independent impact of trade policies. Reduced trade barriers often are correlated with other beneficial economic policies and also are highly correlated with the quality of institutions. Without empirical testing, it cannot be excluded that there is reverse causation and that increased openness to trade is a result of economic growth. An increase of the middle class has been held to increase the demand for imported goods,

[36] Some of these variables are institutions, economic policies (like tax levels and trade), maturity of the nation state, and cultural and religious background.

and with economic growth, there are more exporting companies that lobby for reduced tariffs as well.

A third alternative is suggested by scholars who hold that historically close proximity of powers in Northern Europe created conflict, and that economic development was spurred by this conflict. Nugent and Robinson (2002) argue that conflict between elites is the driving force of institutional development. Conflict theory fits fairly well in South America. However, North (2005) recalled that Switzerland and the U.S. did not have territorial conflicts and still progressed. The theory does not apply to Africa, either, where competing elites often solve conflicts with civil war rather than institutional compromises.

A fourth alternative appeared in the 1960s and stresses exploitation through colonization and slavery as grounds for later divergences in prosperity. This school of thought was promoted most strongly by neo-Marxists. It held that the American economy was built on the backs of slaves, and the European economy was founded on colonization. However, the institutions of slavery and resource exploitation have not created long-term economic growth. In many North African countries, slavery is present even today. Many Arab countries allowed slavery until very recently. The resource exploitation of Portugal and Spain made those countries the poorest in Europe, while trading nations like the Netherlands and England prospered. Tocqueville (1848) stated that wherever slavery was permitted, there was comparatively less economic progress. Sailing the Ohio River with Kentucky on one side, and Ohio on the other, Tocqueville described what he saw ([1835–40] 1945, 1:376–77), as referred in Swedberg 2005:7):

"Upon the left bank of the stream the population is sparse; from time to time one descries a troop of slaves moving slowly in the half-desert fields; the primeval forest reappears at every turn; society seems to be asleep, man to be idle, and nature alone offers a scene of activity and life. From the right bank, on the contrary, a confused hum is heard, which proclaims afar the presence of industry; the fields are covered with abundant harvests; the elegance of the dwellings announces the taste and activity of laborers; and man appears to be in the enjoyment of that wealth and contentment which is the reward of labor…. Upon the left bank of the Ohio labor is confounded with the idea of slavery; while upon the right bank it is identified with that of prosperity and improvement; on the one side it is degraded, on the other it is honored."

The academic works discussed so far have shortcomings that create a need for alternative theoretical frameworks. Many of these shortcomings are due to the frameworks' assumptions of human action and social relations. The next section starts with a discussion on human action, followed by a section on social relations and collective action. This discussion is required in order to develop a more adequate theoretical framework. The social analysis in this chapter culminates in a model in section 4.6 that tests if this new theoretical framework can better explain long-term political and economic outcomes.

3.3 Social Theory

Before a social science theory is stated, it is indispensable to spell out the basic anthropology upon which it is constructed. Identifying anthropological assumptions helps with logical consistency, the clarity and understanding of the theory, and makes it more falsifiable. However, a theoretical framework on a broad concept like human prosperity is insufficient without a theory on social relations and collective action. After

introducing the theory on human action and social relations below, Section 3.5 will conclude in a conjecture on the progression of society that may explain political and economic outcomes.

3.3.1 Human Action

Although there is disagreement about the degree to which human action is rational, most economists and sociologists can agree that humans are rational under a redefined concept of rationality. According to Greif (2006: 426): "Experimental evidence lends support to the claim that individuals are rational, in the sense of having stable preferences and being motivated by the consequences of their actions. … They behave strategically, trying to anticipate others' actions, and using backward induction." Lindbeck (1997) gave evidence that individuals act rationally, but only given the values they have internalized. From institutional sociology, DiMaggio and Powell (1991: 17) held that, "The experimental evidence reinforces the view of the great sociologist, Talcott Parsons, that 'action remains rational in the sense that it comprises the quasi-intentional pursuit of gratification by reasoning humans who balance complex and multifaceted evaluative criteria'." DiMaggio and Powell noted that "individuals actively seek to improve their lot" and that "early adopters of organizational innovations are commonly driven by a desire to improve performance" (1991: 65).

The Old Institutional School assumed that humans have free will and the capacity to alter their surroundings accordingly. This research supports that view and also holds that human action is constrained by available resources, conflicting interests, contractual relations, formal and informal institutions, individual beliefs, and values. When humans make decisions, they are understood to be rational, but not in the traditional understanding of rationality used in Neoclassical economics. From

Economic Sociology, Max Weber (1922) provided a framework for understanding human action. Weber separated human rationality into four categories. He named the first type instrumental rationality. These are the calculative decisions made with the purpose of maximizing utility. The information used in the decision making process is based on expectations about the behavior of other human beings, or objects in the environment. The second category, which he considered just as influential, is based on the beliefs and values of the individual. This type of action is undertaken on the basis of ethical, aesthetic, religious, or other motives intrinsic to the actor. Successful outcomes in a material sense are not a primary objective of this rationality. The third category is affective rationality, or actions based on emotions. The fourth category represents decisions based on habits and traditions.

Many scholars question whether important decisions are based on emotions. However, research on financial markets (McKinsey Quarterly, April 2005) provided evidence that the short-run wild gyrations in the stock market are driven by emotions even if the long-term outcome is more efficient. There may be evidence that there exist elements of greed in a stock market bubble, and an element of fear in a stock market bust as well.

Included in Weber's fourth category of habits and traditions is the importance of mimetic behavior. Institutions (formal and informal rules) generate behavior and individuals mimic the behavior of others when constrained by institutions. Individuals may act with instrumental or value-based rationality when facing a new situation, but once an institutionalized equilibrium behavior has been established, individuals often are limited to mimetic behavior (Bowles 2005). There are many good reasons for mimicking; among them are saved resources and reduced risk. When individuals are guided by habit and routine, they rely less on cognitive evaluation. Since attention is a

scarce resource (Simon 1955), mimicking enables people to set aside insufficient cognitive resources to other tasks. Institutional economist Avner Greif argued that institutionalized rules provide coordination, and aggregate and disseminate knowledge and information (2006:134). Individuals seek to generate positive social responses by people in their social circle. They act to elevate their social status and esteem in the broader society that provide them with an identity that is consistent with internalized norms (2006:143). As a consequence, institutionalized rules and rules of thumb often are used in human decision making.

When it comes to instrumental or value-based incentives to human action, Avner Greif (2005:432) maintained that "the basic theoretical insight from moral hazard studies highlight the importance of increasing the reward for honesty and decreasing the payoff following dishonest behavior." However, as the following example illustrates, rewarding good behavior does not always lead to beneficial conduct. The complexity associated with human action is portrayed by an experiment that was undertaken at several kindergartens in Israel. A recurring problem was that parents arrived late to pick up their children. To increase the incentives to arrive on time, the kindergarten started to fine parents arriving late. To their surprise, in every kindergarten where these experiments took place, the late arrivals increased. One plausible theory is that parents became increasingly late because they were under the impression that paying the fine was a satisfactory remedy and that by paying the fine, it was acceptable to be late. However, when the kindergartens concluded the experiments, and removed the fines for being late, the number of late arrivals stayed high and never subsided to their pre-experiment levels. The parents seem to be motivated by social norms to be on time before the policy was implemented. However, the final outcome of the experiment illustrates that formal institutions may influence long-term behavior and unintentionally change or sever cultural norms by the feedback the changed incentive

structure provides. This feedback is an example of secondary and long-term consequences to policies and institutions. It illustrates that human psychology is more complicated than simple cost-benefit analyses and that institutional change produces outcomes that are hard to calculate in advance.

Corresponding with the example above, if a child always is rewarded for positive action; the long-term consequence sometimes is a failure to act properly when the reward is not offered. This represents another example that a focus on utility-maximizing incentives can lead to unintended consequences. It is important to have a good incentive structure, but individuals should not be encouraged to make decisions based only on rational self-interest. When good behavior is intrinsic – that is, it comes from within the person's psyche (beliefs and values) and not only from utility maximizing motives – the action is more cemented and therefore more stable, predictable, and beneficial to society (Akerlof 1980).

As Weber emphasized, to a large extent, people are guided by socially transmitted rules of behavior. Greif (2005:143) says that people seek to act in a manner that generates positive social responses by those in their inner social circle or whom they revere. Through socially condoned behavior, individuals receive feedback that elevates their social status and esteem in the broader society and provides them with an identity that is consistent with their internalized norms. There are two aspects of obeying a norm, according to Akerlof (1980). The first is the intrinsic belief in the values underlying the norm. The second is the one emphasized by Greif: a cost of not following the norm based on lost reputation and social retribution and ostracism. The motive for following norms therefore can be based on maximizing utility, as well as altruism and doing "the right thing" without regard for optimizing material outcomes. An abundance of real-world experiments provides evidence that people act

altruistically, with a sense of fairness and for doing what is right, often at the cost of personal material gain. One example is the "Ultimatum Game" in which a proposer suggests a potential division of a sum of money. The second player either can agree or refuse; if he refuses, both receive nothing. Most results show the proposer offering 30–50 percent on average (in some cultures even 70 percent) to the other player. A strictly self-regarding equilibrium without norms of fairness would imply much lower offers.

Similarly, experimental game theory demonstrates the importance of the social and normative functions of behavior (Bowles 2005). Greif (2005:143) recited Talcott Parsons (1951) and emphasized, "The importance of norms in motivating behavior by influencing the intrinsic utility from it. Internalization of norms, or the incorporation of behavioral standards into one's superego, essentially means the development of an internal system of sanctions, one that supports the same behavior as the external system" (Frey 1997:13–14). The economic sociologist Scott (1995:40) held that "values and norms are regarded as the basis of a stable social order." Sympathy for others greatly influences behavior and in sum has a tremendous positive effect on the economy. For example, leaving an inheritance increases the savings rate. Furthermore, when people are trusted because they are perceived to have good intentions, transaction costs fall.

The simple discussion of anthropology in this section reveals how a change in underlying assumptions necessarily alters a theoretical framework. Based on the discussion, it can be concluded that Walrasian economics is too limited a framework to apply to issues like national prosperity, economic growth, or other contextual inquiries. The Walrasian framework is more suited to look at mechanisms in isolation. The Neoclassical utility-based assumption that limits human action to instrumental rationality leaves no room for culture or informal institutions to influence society.

Mancur Olson (1965) has coined the Neoclassical assumptions the "logic of consequence." On the other hand, many sociologists hardly recognize instrumental rationality in decision making. These scholars hold that humans make decisions based on the last three categories stated by Weber. DiMaggio and Powell (1989) labeled this sociological theory of human action the "logic of appropriateness." As such, Duesenberry (1960, p. 233) described the difference between sociology and economics as follows: "Economics is all about how people make choices. Sociology is all about why they don't have any choices to make." Although Dusenberry's characteristics only serve to illustrate differences in the extreme, Granovetter (1985) maintained that economists under-socialize reality and sociologists over-socialize reality.

The discussion here concludes that humans are rational in that within the limitations noted above, they seek to influence their surroundings and to optimize their outcome in both a self-interested as well as an altruistic manner. To various degrees, individuals are both strategic- and conformist-oriented. In an economic sense, conformist implies that individuals passively obey social norms, creating inertia and a stable equilibrium despite possibilities for Pareto improvements. Strategic means they are motivated by outcomes and seek to optimize institutional rules and obtain Pareto improvements.

3.3.2 Institutions and Social Relations

> *The institutional matrix defines the opportunity set, be it one that makes the highest pay-offs in an economy income redistribution or one that provides the highest pay-offs to productive activity.… the relative weights (as between redistributive and productive incentives) are crucial factors in the performance of economies.*
>
> Douglas North, *Five Propositions about Institutional Change* (1993)

Macro aggregates do not equate to the sum of individual preferences and actions, as held in Neoclassical theory, because social relations, including organizational and institutional factors, come into play and affect the aggregate outcome. Consequently, economic or political outcomes do not appear in an autonomous vacuum, but are embedded in the social system. Research on the aggregate level therefore should be non-reductionist in its methods. However, foregoing methodological individualism is not a free lunch. The negative side-effects of eliminating the Neoclassical assumptions that institutions merely mirror material and technological particulars in the society are theoretical models that struggle to achieve analytical solutions. Nevertheless, as the evidence in the discussion so far indicates, this may be a necessary trade-off. Moving from the micro to the macro level, this section describes how institutions play a part in governing society by constraining individual and organizational behavior.

There is an emerging consensus that institutions matter to political, social, and economic development (Aoki 2005). Institutions are structures and mechanisms of social order and cooperation governing the behavior of two or more individuals, according to the World Bank.[37] Institutional scholars like Douglas North (1970) define institutions to be rules with a social purpose of regulating individual and collective action. North's introduction of institutions as rules transformed the way many economists understands economic history and the development of market institutions (Everding 1993). Institutions are shaped, interpreted, and to various degrees obeyed by humans; therefore, there is a strong link between the individual limitations noted in the previous section and institutional change.

[37] http://siteresources.worldbank.org/INTWDR2010/Resources/5287678-1226014527953/Glossary.pdf

Institutions determine the costs and benefits associated with certain types of activities. This impacts the incentive structure in a society and the types of activities that are undertaken. To the extent that people are motivated by instrumental rationality, the likelihood of an action being taken is increased when the benefits of this action are perceived to increase. Institutions therefore bring forth human action by changing the cost structure of that action, and by permitting or mandating actions. However, institutions function sufficiently only when there is effective enforcement. This enforcement is the result of three different mechanisms, the state (courts, police, military), the community (reputation, social retribution) and individual consciousness (moral compass, guilt).

An important reason for the disagreement on theories about how to achieve national prosperity comes from the diverse views of the workings of the human mind and of human action. Scottish "Critical Rationalism" held that men were too limited intellectually, and the social process too complex for the social structure, including meta-institutions like bureaucracy, money, and markets, to be the execution of individual design. David Hume (1740) held that most social institutions are not a result of deliberate human intention. Rather, they are a result of trial and error by a few individuals where positive outcomes are subsequently adopted by others. Gradually, regularities of conduct, conventions, and norms of social behavior are established. The *Theory of Moral Sentiments* by Smith (1759) understood social organization as the outcome of human action, but often not of intentional design. The unplanned social order was far more complex and functional than anything humans could reason out for themselves, according to most classical economists. Human reason could not have designed such complicated institutions as property rights and money that govern society today. Contrary to this view is Cartesian Rationalism or Rationalist Constructivism, upon which Neoclassical economics builds. This social theory says that

humans can understand, design, and implement optimal social institutions.[38] This inference is a direct result of society being analyzed as a set of simple cause-effect relationships between a limited numbers of stable elements. Game theory has been used to illustrate the possibility of institutions evolving in a manner that supports both of these theories (Greif 2004, Bowles 2005).

When institutions appear as codified law or in another type of written form, they are defined as formal institutions. Formal institutions are constraints on individual and collective action defined by government bodies and enforced by governmental organizations. Examples of formal institutions are state constitutions, legal systems, statutory rules, taxation, insurance, and market regulations. However, formal institutions are not the only institutional form. Hume (2000: 526, as cited by Boettke, 2009) argued that "the rules of a good society are written on the hearts and minds of its citizens well before they are written down on parchment." Hume is alluding to the informal component of institutions. For example, the informal norm of promise keeping underlies the formal law of contract (Boettke 2009). Informal institutions are private institutions emerging from culture (beliefs and values). These institutions are not enforced by the state, but by the social community and individual consciousness. Informal institutions appear in the form of norms, traditions, mores, customs, habits and conventions.

If obtaining an official registration of property or other assets is a slow and cumbersome process, acquiring capital for investment becomes difficult and the economy will perform substantially below its potential. Similarly, if business permits

[38] To Hayek, competition is less about equilibrium and more about a "discovery procedure," an ongoing, open-ended process that coordinates and generates knowledge in a decentralized manner to adapt to uncertainty and environmental flux.

are difficult to obtain, the local economy becomes less competitive. Likewise, "if employing workers, obtaining credit, and engaging in trade across borders are prohibitively costly, there will be an adverse impact on productive entrepreneurship" (Djankov et al. 2002). However, as will be described in examples from Brazil, Russia, and Argentina in Section 3.4, it very often is the informal structures accepting corruption and bribery that are responsible for these conditions in developing countries. Unless strongly enforced by authorities, formal institutions are effective only when embedded in informal constraints. Intuitions cannot be transplanted easily in an attempt to create prosperity.

3.3.3 Institutional Evolution

Empirical evidence gives support for both the Cartesian view as well as the evolutionary view of institutions. There is evidence of at least three major sources for the design of formal institutions. First, formal institutions are a result of robust informal institutions that become codified law. Second, formal institutions are a result of conscious efforts by political entrepreneurs. Third, formal institutions (constitutional rules) can arise based on the consensus of a perceived need in society. The first example illustrates the Old Institutional Schools view of institutions as based on unconscious evolution. The second example represents a supremacy argument of political and sociological theory whereby institutional form is designed according to the interest of powerful actors. The third example represents the New Institutional Economics' focus on institutions as a result of intentional human design based on a need to minimize transaction costs. As there are examples of all three theories having some responsibility of the shape of formal institutions, it can be deduced that human action originating in self-interest, technological feedback (political and economic outcomes), as well as beliefs and values, contribute to various degrees to the formal institutional makeup.

Until the early 1990s, New Institutional scholar Douglas North primarily was interested in the designed aspects of institutional evolution. He concluded his research to date by naming five key features of his theoretical framework of institutional change (1993). His most central argument was that the economic setting of scarcity and competition is the key to institutional change through the continuous interaction between institutions and organizations. Further, he held that competition forced organizations to invest continually in knowledge to survive. North thought that individuals have the ability to be forward-looking. Therefore, the institutional framework would dictate the kind of knowledge perceived to have the maximum payoff. However, he also has focused strongly on the mental constructs of the players and their limitations. In a similar argument used in the discussion in Section 3.3 on human action, North (1993:22) held that "given the complexity of the environment, the limited information feedback on the consequences of actions, and the inherited cultural conditioning of the individuals, perceptions would not always be correct."

Relative to other New Institutional Economists, North's last major assertion showed a strong tilt toward the evolutionary perspective of the Old Institutionalists. North emphasized the gradual change of institutions and the strong degree of path dependency in institutional change. Path Dependency represents a concept similar to Incrementalism in political science (Lindblohm 1959) or Inertia in organization science (Hannan and Freeman 1984). North held that economies of scope, complementarities, sunk costs, coordination costs, and network externalities severely influenced the institutional matrix and created a strong degree of path-dependency (1990). Added to North's costs, the expense of overcoming the benefactors of the current institutions and co-opting potential losers should be added (Olsen 1982). In other words, there are structural costs, transaction costs, and costs associated with the bounded rationality of humans, preventing Pareto optimal institutions to materialize.

A formal law may not change the expectations of individuals and the effectiveness of formal institutions unless a collective mindset exists or arises in support of the actual intent of the law. Without this support, the law will not be upheld without costly enforcement. Sociologists generally regard these cognitive mind-sets as the essential elements of institutions. North refers to them as mental models that are shared through formal institutions, ideologies, and culture. North holds that "the mental models are the internal representations that individual cognitive systems create to interpret the environment; the institutions are the external (to the mind) mechanisms individual create to structure and order the environment." (1994: 4). Formal institutions can be seen as the external to the mind objective mechanisms and the informal institutions existing as more subjective internally shared mental models (see Aoki 2005).

3.3.3.2 Examples of Institutional Evolution

As the following examples from Brazil and Argentina illustrate, the importance of informal institutions can hardly be overemphasized. Brinks (2003) explained that Brazil strongly maintained human rights in its constitution (1988), and Argentina gave international human rights treaties a status above that of domestic legislation in constitutional reforms in 1994. "Yet, despite these formal protections, the police forces in both these countries continue to violate basic human rights on a daily basis and the courts do little to curb or punish this behavior" (Brinks 2003:1). Brinks showed that informal institutions condoning brutality against violent criminals ensured almost no police officers were charged or punished despite strong evidence of their misconduct.

Putnam (1994) has sought to show how good informal institutions complement formal institutions. However, Timothy Frye (2006), in a study of Russian institutions, found that good courts (formal institutions) and reputation (informal) are best seen as substitutes rather than complements. Frye posited, "When business people in the

private sector can overcome the problems that plague trade using private means, like reputation or trust, they express less demand for capable state institutions." Rather than devoting resources to develop the state, business people will invest in the creation of powerful private organizations to support trade." Even in a country with a good institutional structure like the United States, Bernstein (1992) found that Orthodox Jewish diamond traders in New York City opposed state regulation and preferred to rely on informal means to resolve disputes. A reason for this choice might be that this particular industry is dominated by traders in a closely related community. This closeness makes informal institutions much more efficient even with access to good formal institutions. Similarly, Ellickson (1991) argued that ranchers and farmers in Shasta County California used informal means to resolve disputes.

These examples are abundant, and they do show that strong social networks reduce the demand for strengthening state institutions because even high-quality state institutions have higher transaction costs and are considered less amicable and socially correct institutional forms in close networks. Williamson (1985) argued that "private firms have considerable scope in designing bilateral private institutions to support trade without recourse to state institutions" (Frye 2006). It therefore can be deduced that the relationship between formal and informal institutions is complex and sometimes competing rather than complementary. This is particularly true in countries where formal institutions are of poor quality and weakly enforced.

There are examples of institutional forms coming about that support both a design and an evolutionary view. One example is the formal institution of right-hand or left-hand side driving. An old Roman quarry in Swindon, England, has tracks that are much deeper on the left side. This suggests that Romans drove on the left since carts would exit the quarry heavily loaded, and enter it empty. Left-hand side driving often

prevailed before the 19th century because a right-handed person found it easier to mount a horse from the left side as the sword was worn on the left. It was also safer to mount and dismount toward the edge of the road, rather than in the middle of traffic. The favored right hand also was free to greet onlookers and draw the sword if necessary.

However, there also is evidence that Middle Eastern civilizations drove on the right as they held the whip in the right hand when driving chariots and had to avoid hitting passersby with the whip. With the development of more sophisticated wagons at the end of the Middle Ages, it became advantageous to shift to the right hand side. People also naturally keep to the right on average. This happened gradually in some countries. On the other hand, Napoleon Bonaparte is an example of a "political entrepreneur" who decided to enforce right-hand side driving and thereby design an institution of right-hand side driving. He forcefully applied this policy in all countries he occupied (Wright 2007). Approximately 70 percent of countries in the world now have legalized right hand-side driving, much to the credit of Bonaparte's heavy hand.

Formal institutions often are a result of social norms or conventions that with time take on such a strong form that they become written down. These institutions are a result of decentralized actions evolving into institutions in a spontaneous manner. Kingston (2007) explained how, in the early 1700s, individual merchants and underwriters started meeting at Lloyd's Coffee-House in London with the purpose of transacting marine insurance. Over a 150-year time period, Lloyd's had evolved into a "highly structured marketplace for marine insurance and the dominant force in the world marine insurance industry" (Kingston, 2007:9). The creation of this institution occurred slowly and appears to be relatively unconscious in the same manner as markets, money, and other institutions have emerged in the past. For the first half-

century of its existence, Lloyd's had no formal structure. An official structure eventually was created, but official rules were adopted mainly "to systematize a practice which had already been adopted to meet the requirements of commerce as they arose" (Wright and Fayle 1928:2, as found in Kingston 2007:10).

This example illustrates that unconscious evolution often is the main form of change and progress when it comes to the most sophisticated institutions in society. Flourishing institutions can be copied successfully at times, but they are too complex for boundedly rational beings to invent consciously. Watershed constitutional documents like the Magna Carta and the Glorious Revolution were created based on the efforts of resourceful agents like the barons, but they were rooted in a belief change in the general population that rested on more egalitarian values and the rejection of the idea that unlimited power should reside in any one person's hand, even a king.

Despite different technological and cultural foundations, free societies drift toward a particular set of institutional structures. The permanence of these social provisions makes them tantamount to social laws. Sociologist Talcott Parsons (1964) coined these social provisions "evolutionary universals." According to Bowles (2002:403) these are "the ways of ordering society that crop up with sufficient frequency in a variety of circumstances to suggest their general evolutionary viability." Parsons recognized democracy, bureaucracy, stratification, markets, and money. If Parsons was correct, these social laws must be supported by cognitive and behavioral psychology to be the best responses (socially efficient) to the workings of the human mind and its preferences.

The Scottish philosopher David Hume said that human society depends on the institutions of property, contract, and consent. Private property rights are a strong

characteristic of free societies and should be added to Parsons' conjecture. On the other hand, Parsons' recognition of democracy may be questioned. Democracy may be a regional but not a universal law. Although individualized cultures gravitate towards democracy, cultures that are more hierarchical and collectivist in nature do not seem to have the same inclination. Stratification is necessary for bureaucracy to work and it also is a direct result of private property rights and market decision making.[39] Even highly egalitarian cultures, like the Scandinavian, accept the need for stratification. The institution of money emerges because it is an efficient medium of exchange. Money, first in the form of metals and then advancing to paper money, always is evident when civilization advances from more primitive stages.

3.4 Model of Society

This chapter has criticized Neoclassical economics as a naturalistic fallacy and has suggested the need for a behavioral approach to human action rather than simple assumptions of utility in economic behavior. Other main theories in the academic literature also have been criticized as inadequate. In their place, this chapter has underlined that expectations, motivations, habits, and tastes are constrained and shaped by economic, political, and sociological institutions. Consequently, economic choice is embedded in the society where it occurs. Even though reasoning, foresight, calculations, and planning are influential human attributes, social change often happens through experiments and modifications and as a result of unplanned events and factors outside human control. This need for trial and error and the lack of unconscious design is a product of a complex world and limited human capacity. The table below represents a

[39] 'Stratification is a term used to characterize a structure of inequality where (*a*) individuals occupy differentiated structural positions and (*b*) the positions are situated in layers that are ranked hierarchically according to broadly recognized standards.

model of society based on the theoretical discussion in this chapter. It combines components of Economic Sociology and Institutional Economics.

Table 7: Transformation of Society

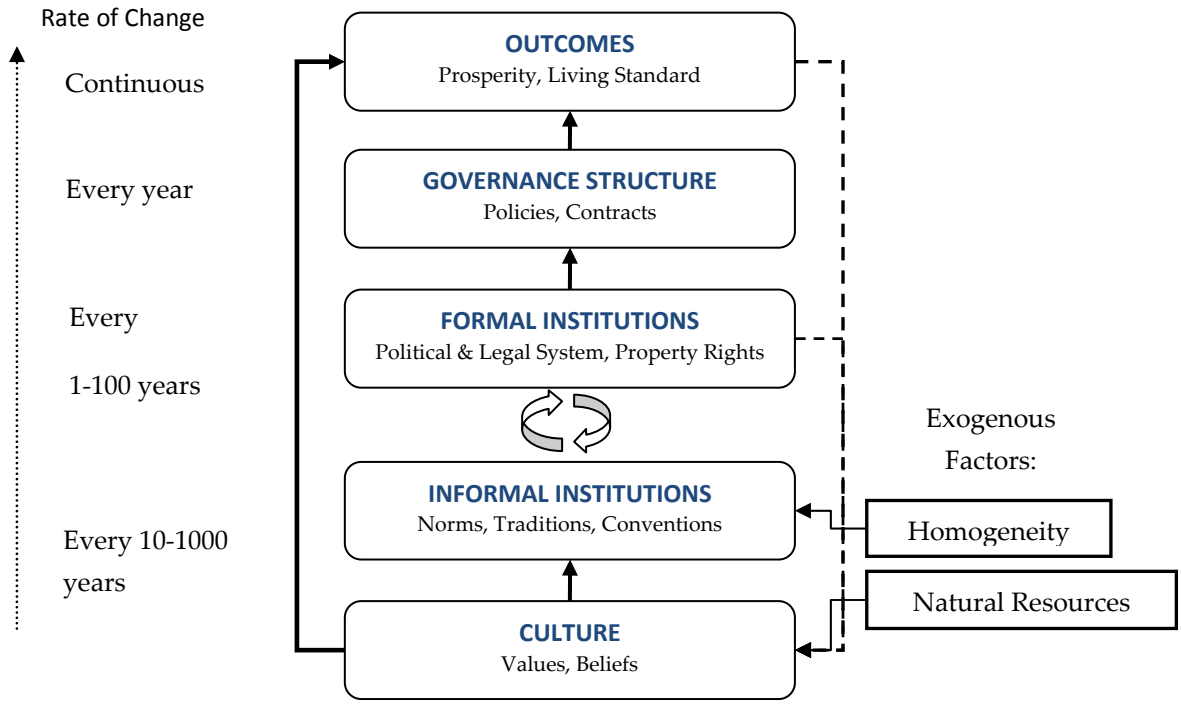


Table 7: Model of the transformation of society: Solid arrows indicate constraints by a lower level. Stippled arrow illustrates feedback. The two boxes are exogenous variables.

Table 7 describes the relationship between the major components of a society as interpreted in this dissertation. The causal direction in the model is similar to Max Weber in *Economy and Society* (1922), and the model's design draws on Williamson (2000). The diagram illustrates that culture, not the economy, is the foundation of society. As defined in Section 4.1, a national culture is the combined sum of beliefs (priors) and values (preferences) in society. Culture represents the foundation for the informal institutions (norms, traditions, and conventions) of society. The figure identifies culture as changing very slowly, on about a scale of a hundred years (three generations) or more on average. However, there are faster-moving components of

beliefs that can change quicker based on technological feedback and leading to norm change over a period of just a few years. The view of an overall slow change of culture is maintained in most of the literature and is supported by empirical evidence. Coyne and Sobel (forthcoming: 16) in a panel data analysis provide evidence that culture and informal institutions are largely stationary in the short and medium run. Additional empirical evidence for this assertion is discussed in Section 4.6.4.

As illustrated earlier in this chapter, the informal institutions work in a complex relationship with formal institutions, at times reciprocal, but occasionally competing. The efficiency of formal institutions is strongly dependent on enforcement, either by a strong government or synchronization with beliefs and values whereby the informal institutions privately enforce the formal institutions. The day-to-day governance structure (public policies, private contracts) is confined by the institutions. This entails that policies produced by the political system, and contracts created in the private sphere, are subject to the criteria set by the constitution and the legal system. In addition, the norms, traditions, and conventions of society exert a strong pressure toward conformity. As illustrated in the examples from Brazil and Argentina, the courts will not follow the law of the formal institutions if the informal institutions exert a greater pressure of compliance. The political and economic outcomes, in turn, are subject to policies and contractual agreements.

The outcomes experienced by individuals result in feedback that updates the belief system. These updates can reinforce the system or gradually change culture and informal institutions and create pressure for institutional change and a different policy-set. Consequently, in the very long run, both institutions and culture are endogenous in this model. This model, therefore, corresponds with Weber's theory that culture is a determinant of the progression of society. However, the diagram allows for joint

correlation by culture being open to feedback from the economic and political outcomes.[40] Consequently, historical progress is driven by ideas, unconscious evolution, and available technology. On the background that culture plays an important role in the study of political, social, and economic outcomes in this model, the next chapter addresses the cultural impact on economic prosperity and proposes a model that combines governance, institutional, and cultural variables. This new model is tested empirically in Section 4.6–4.7.

Section II: Culture as a Foundation for Prosperity

> *"In the social production of their existence, men inevitably enter into definite relations, which are independent of their will, namely relations of production appropriate to a given stage in the development of their material forces of production. The totality of these relations of production constitutes the economic structure of society, the real foundation, on which arises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness."*
>
> Karl Marx *On Political Economy* (1859).
>
> *We are cultural beings, endowed with the capacity and the will to take a deliberate attitude toward the world and to lend it significance.*
>
> Max Weber *Objectivity in Social Science and Social Policy* (1904)

[40] Weber states in the concluding paragraph of *The Protestant Ethic*; "it is, of course, not my aim to substitute for a one-sided materialistic an equally one-sided spiritualistic causal interpretation of culture and history. Each is equally possible, but each if it does not serve as the preparation, but as the conclusion of an investigation, accomplishes equally little in the interest of historical truth."

4.1. Introduction

In 20th century social sciences, human capital, economic policies, political systems, geographic location, and historical coincidence were among the factors advanced as the main causes for national differences in economic fortune. This chapter explores the role of culture in the level of economic prosperity in a society while controlling for the other dynamics. Classical economists like Adam Smith and Institutionalists like Torstein Veblen regarded culture as instrumental in shaping economic outcomes. However, in the 20th century, cultural research became mostly a domain of sociologists, anthropologists and organization studies. As illuminated in the previous section of this essay, many economists now have an understanding of the causational direction between economics and culture similar to the introductory quote of Karl Marx, where the economy is not embedded in the social system, but governs it. In contrast to economics, in subfields of business administration, like strategy, management, and organization theory, the idea of cultural importance to economic performance is commonly accepted. Culture is held as a central component in research models, and has a strong effect on business strategy and organizational decision-making according to Papamarcos and Watson (2006).

Although many scholars see culture, like institutions, as a vague concept, successful operationalization can only be achieved with a clear definition. Based on the previous section, culture in this research is understood as a distinctive concept that must be separated from the notion of institutions to provide for a meaningful analysis. How culture is defined is partly influenced by one's view of social action. The previous chapter identified four ways that humans rationalize in decision-making (Weber 1922). These four basic types were instrumental rationality, value and belief-based rationality, emotions, habits, and traditions. This typology accepted additional sources in addition

to instrumental rationality as influential in human action. Consequently, culture has to be acknowledged as an influential social phenomenon regarding economic matters since it is either a component or an outcome of these others standards for human action and decision-making.

Management and organization theorists House and Javidan (2004) define culture as "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations." This definition is quite similar to the definition of culture in the tradition of scholars from the fields of Institutional Economics and Economic Sociology (Veblen 2003). In section 3.3, beliefs (priors) and preferences (values) where identified as primary factors in human decision-making. In an often cited definition, cross-cultural psychologist Triandis (1996:408) held that attitudes (beliefs) and preferences are culturally transmitted and

> *provide the standards for perceiving, believing, evaluating, communicating, and acting among those who share a language, a historic period, and a geographic location. The shared elements are transmitted from generation to generation with modifications and updates based on experience. The transmitted elements include unexamined assumptions and standard operating procedures that reflect 'what has worked' at one point in the history of a cultural group.*

Institutional economists, like Avner Greif (1994, 2006), defined culture to be the social norms and individual beliefs that sustain Nash equilibrium as focal points in repeated social interactions. This definition portends culture as the sum of the norms resulting from the preferred individual strategies in social exchanges over time. In Greif's models, the concepts of institutions and culture are not distinct notions, but

culture plays a role in shaping individual action. Culture as defined by Greif is merely an extension of broadly-defined institutions. Akerlof and Kranton (2000), and Rabin (1993), held that culture influences individual behavior directly through values and preferences. In theory, culture can therefore influence the economy both through the direct mechanism of beliefs, values, and traditions that influence human action, and indirectly through formal and informal institutional structures.

Culture is defined here as "*those customary beliefs and values that ethnic, religious, and social groups transmit unchanged between generations.*" This definition is taken from Guiso et al. (2006:3), and a similar definition is used by Tabellini (2005, 2007). It concentrates on those dimensions of culture that can impact outcomes related to economic prosperity and serve to identify the causal effects. A belief is defined as the acceptance by the mind that something is true or real, often underpinned by an emotional or spiritual sense of certainty. A value is the worth, importance, or usefulness of something to somebody or the accepted principles or standards of a person or a group. Beliefs and values define culture, while norms, traditions, and habits are outcomes of culture. Tabellini (2005) held that scholars like Bernheim (1994), and Benabou and Tirole (2006) argued that social norms and individual values interacts in a systematic fashion. By restricting the potential channels of influence to two standard ones--beliefs (priors) and values (preferences)--this conceptual choice provides an easier approach from culture to economic outcomes according to Guiso (2006:3). This is also evident based on section 3.3 of this dissertation as two of the four categories in the typology of human action became cultural categories using this definition of culture. Since beliefs and values can be studied and quantified though survey data, culture as a determinant of human action therefore becomes an empirically-measurable link between culture and economic outcomes.

4.2 Historical Examples

There exist quite a few good empirical cases where culture is thought to explain economic performance. This section discusses a few cases that may provide evidence that beliefs and value systems and their oucomes in informal institutions and in individual choices can affect economic prosperity and the speed of economic development.

Case-studies from Italy, like Banfield (1958) and Putnam (1993) are abundant in the literature. Northern and Southern Italy have had the same formal institutional structures, and have been ruled by the same governments and policy frameworks over the last 150 years. Still, Northern Italy has a GDP per capita that is 25 percent higher than the EU average, while Southern Italy's GDP is 25 percent lower than the EU average. Similarly, the judicial system in Southern Italy, despite the same incentive structure, takes much longer to complete investigations and rule on civil cases (Tabellini 2008:1). India, with the same formal institutions and technology as the UK, has peristently lower productivity levels. Belgium is another example; the Flemish Protestant areas in the north have traditionally been more productive than the French and Catholic Valonia in the south. Argentina, with the same climate and natural resources as Australia, has experienced dramatically different paths regarding economic prosperity over the last century.

These examples should not be understood as an attempt to explain any economic difference as an outcome of cultural attributes. There exist geographical differences in prosperity that cannot be explained by culture. North Korea had a largely similar cultural foundation as South Korea 60 years ago. However, economic growth in the South is vastly outperforming the North. According to the theory in section one of this

essay, this cannot be explained by culture, but by policies and formal institutional structures.

4.2.1 Africa

Examples that illustrate cultural importance are abundant in Africa. In Africa, large segments of the economy are informal and GDP numbers do not reveal the factual reality about the economy. Traditionally, family and tribe are vastly more important in most African countries than the government. A distinct characteristic is that surplus income is consumed immediately. The level of saving in the economy is low. Unless it is a period of starvation, people often do not store bread and other foods overnight, but throw them away.[41] These cultural factors have many causes and some may be technological. The stability of the weather and the existence of four planting and harvesting seasons are factors that have been suggested as making saving less precarious. More importantly, however, there are also fewer incentives to save since the surplus is distributed among family members, the extended family and the tribe. Mamadou Dia (1991:5) described the lack of frugality:

> *there is a social and mystical need for what westerners may call wastefulness. For example, among the Diola of Senegal, L.V. Thomas observed the massacre of 750 head of cattle to celebrate a circumcision ceremony, and it is not uncommon for poor, malnourished farmers to give away vast quantities of foods on the occasion of marriages, circumcisions, or burials*.

[41] I experienced firsthand how cultural differences and belief systems matter to economic progress in Africa while living in Congo-Brazzaville.

Excess income, according to Dia's research, only serves to extend or widen the circle of beneficiaries. Economic success achieved outside of the group often leads to ostracism. Economic progress is therefore not related to upward social mobility like it is in the Western World. Dia (1991:4) again explains the particular African experience very well:

> *African economic psychology is generally characterized by powerful connections between objects, humans and the supernatural. Although the emphasis put on each of these elements, and the interrelationships among them, can vary from one ethnic group or tribe to another, the quest for equilibrium with other human beings and with the supernatural is generally the dominant guiding principle. The frontiers separating collective preferences from individual ones are often non-existent or quite vague. Typically, a higher value is placed on interpersonal relations and the timely execution of certain social and religious or mystic activities than on individual achievements. The circumstances, and sometimes the ritual surrounding the economic transactions, are often more important than the principles governing these transactions. The value of economic acts is measured in terms of their capacity to reinforce the bonds of the group.*

These African cultural traits that Dia reported, have been supported by the work of French scholar Jacques Binet (1970) on economic psychology in fifty-six African tribes.[42] Differences between the African tribal culture and the Protestant ethic is distinctly represented almost 300 years ago by Benjamin Franklin in *Advice to a Young Tradesman* (1748):

[42] *Psychologie Economique Africaine*, Jacques Binet, Payot, Paris, 1970. (While African culture values the cohesiveness of the group, it has nearly been eliminated the multicultural Western World.)

> *Remember, that time is money. He that can earn ten shillings a day by his labor, and goes abroad, or sits idle, one half of that day, though he spends but sixpence during his diversion or idleness, ought not to reckon that the only expense; he has really spent, or rather thrown away, five shillings besides. ... Remember, that money is the prolific, generating nature. Money can beget money, and its offspring can beget more, and so on. Five shillings turned is six, turned again is seven and threepence, and so on, till it becomes a hundred pounds. The more there is of it, the more it produces every turning, so that the profits rise quicker and quicker. He that kills a breeding sow, destroys all her offspring to the thousandth generation. He that murders a crown, destroys all that it might have produced, even scores of pounds.*

Since the field of Psychology, like in Maslow's *Motivation and Personality* (1954:66) has provided evidence that motivation is very important to human action, the cultural traits that Franklin represented must play an important role in social life and the economy.

In African society, the leading tribe often extracts most of the country's resources, and benefits their own tribe with extravagant palaces, luxury cars, jewelry, indulgences, and great parties. These exploits, considered corrupt in most developed countries, are a natural consequence of the cultural realities in much of Africa. Insecurities and conflict over resources increase the need and the power of the tribes. Over a longer period, the embezzlement and resulting mismanagement of the economy command powerful vested interests. Any reform that threatens these interests will be resisted.

The great personal and tribal benefits to governmental power are one of the main reasons for much of the unrest and civil wars occurring in Africa. Zimbabwe and Kenya in Spring 2008 are prime examples. The Ghanaian economist and President of the Free

Africa Foundation, George Ayittey, held a guest lecture at Florida State University February 2009. At this presentation, he stated that the richest people make their wealth by productive undertakings in the private sector in Western societies. In Africa and Communist countries, however, the richest people make their fortune from the government's treasury. This statement fits well with North's thesis about successful economies' larger share of productive relative to redistributive undertakings. Interestingly, this is also a thesis of one of the first sociologists, Ibn Khaldun. Khaldun [Muqaddimah (1377 2:272-73) quoted in Weiss (1995: 30)] wrote that "Economies where businesses are owned by responsible and organized merchants shall eventually surpass those economies dominated by wealthy rulers."

4.2.2 Norway

Norway is a country that until very recently has been characterized by a high level of trust and low levels of corruption. The following example may serve to illustrate how this high level of trust reduces transaction costs. When I returned to Norway after several years abroad, I frequently had to go to a lumberyard for materials as I was in the process of remodeling an apartment. The first time I entered the lumberyard, I did not spot any employees, so I asked a fellow customer how to proceed. The customer told me to head to the storage area, choose the lumber I needed, load it onto my truck, and drive to the main building to pay for the transaction. It struck me that it would not be a problem for me, or anyone else, to take the wood and leave the area without paying for the materials. There was no supervisor in the lumberyard, or anyone controlling neither the exits, nor what was in my truck. I asked the clerk in the main building about this, his explanation was that the store had very few losses due to theft and that the company was able to cut cost substantially by trusting its customers.

Punishment for theft, and similar crimes, are low in Norway and law enforcement resolve only around 25 percent of the cases they follow up (70 percent are not followed up).[43] From a strictly materialist perspective there are therefore strong incentives to act against the law. The incentive to behave honestly must therefore have come from the culture, in the form of beliefs and values, and not from the economic or technological foundations. The system would be an impossibility if the great majority of customers where not honest. This example illustrates how beneficial it is to an economy when resources can be channeled into productive work instead of being spent on monitoring. The relationship between parties in an exchange is more efficient when mutual trust necessitates fewer resources to stipulate a contract.

One of the factors that characterized the social democratic welfare states in Scandinavia was the strong degree of social cohesion, homogeneity and feeling of unity in pursuing national goals. This homogeneity increased the obtainable level of stable informal institutional equilibrium. Combined with the strong cultural factors of honesty, and the protestant work ethic, this created an atmosphere of very little opportunism and shirks in the system. Large governmental bureaucracies and generous welfare programs could therefore work relatively efficiently for a prolonged period of time. After several successful decades the system recently started diminishing when it came to quality and efficiency.

At least two factors contribute to the relative decline: first, the reduction of the Protestant Work Ethic and second, increased opportunism and shirking in the system. The decline in the average level of morality in the population allowed these factors to occur. A decline in morality is supported by the fact that overall crime rates increased

[43] Tupmann (1993) *Policing in Europe.*

more than 700 percent from 1960-2005.[44] Another indication is that sick leave from work in Norway became the highest in the world with an average of eight percent of the working population absent every day, and eleven percent of the working age population declared permanently unable to work.[45] This implies that the average worker called in sick every twelve days. This increase happened despite a 50 percent reduction in working hours over the last decades, strong improvements in working conditions, and an overall safer work environment. Similarly, the number of people on social welfare also increased significantly. The immigration of populations with a different value system, as well as long-term feedback effects with high incentives to cheat on the system have been suggested as reasons for the lower morality. Economic theory says that when one increases the payoff of taking a certain action, the likelihood of this action being taken increases. Following these examples, Section Three introduces the main scholarly literature that deals with the interaction between culture and the economy.

4.3 Scholarly Theory on the Cultural Impact of the Economy

The most dominant paradigm in the 20th century social sciences has been Karl Marx's dialectical process between man and nature. Marx's theory held that technological change determined the cultural foundation and the religion of a society. In *Socialism -- Utopian and Scientific,* Marx and Engels (1880:54) stated: "The final causes of all social change and political revolution are to be sought, not in men's brains, not in man's insight into internal truth and justice but in the economies of each epoch." Marx's account has been given the name historical materialism. However, the question of

[44] http://www.aftenposten.no/english/local/article1661877.ece and The Statistical Central Bureau.
[45] http://www.newsinenglish.no/News/sickleavecosts.html

culture and economic growth did not start with Karl Marx. The classical economists frequently touched upon this topic.

4.3.1 Adam Smith

Adam Smith provided a scholarly introduction to culture and economics. Smith is recognized as an economist, but his Ph.D. was in moral philosophy. In *The Wealth of Nations* (1776), Smith focused on situations where self-regarding behavior plays a larger role and human morality a less prominent role. This is the book that has come to define Smith. However, the interests of one person often conflict with the interests of another person. Consequently, self-interest is often conceptualized, expressed, and realized through social relations. This is seldom discussed in modern economics. In the *Theory on Moral Sentiments* (1759), Smith on the other hand focused on morality in personal exchanges that he declared the basis for human interaction.

Adam Smith, in the "*Theories on Moral Sentiment*s," advanced the idea that successful societies needed a strong moral basis and that free markets would not work well without moral citizens. In the opening line of the *Theory of Moral Sentiments,* Smith noted that "However selfish so ever man may be, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it" [1759 (1976:47)]. Smith intended his first book to be integral to his second book. Vernon Smith (1998:3) argued that the *Theory of Moral Sentiments* and the *Wealth of Nations* together encompassed:

…one behavioral axiom, "the propensity to truck, barter, and exchange one thing for another," where the objects of trade I will interpret to include not only goods, but also gifts,

assistance, and favors out of sympathy ... whether it is goods or favors that are exchanged, they bestow gains from trade that humans seek relentlessly in all social transactions. Thus, Adam Smith's single axiom, broadly interpreted ... is sufficient to characterize a major portion of the human social and cultural enterprise. It explains why human nature appears to be simultaneously self-regarding and other-regarding.

Regarding individual achievement motivation, Smith touched on some of the issues, including thrift, around which Max Weber later built a sophisticated cultural theory around. In part IV (1759) Smith declared that,

> *…the qualities most useful to ourselves are, first of all, superior reason and understanding, by which we are capable of discerning the remote consequences of all our actions, and foreseeing the advantage or detriment which is likely to result from them; and, secondly, self-command, by which we are enabled to abstain from present pleasure or to endure present pain, in order to obtain a greater pleasure or to avoid a greater pain in some future time.*

Similarly, Hayek (1960: 71 and 76) held that responsibility in behavior was an indispensable factor for freedom and prosperity in society. One could never have freedom without responsibility:

> *Liberty and responsibility are inseparable. A free society probably demands more than any other that people be guided in their actions by a sense of responsibility which extends beyond the duties exacted by the law and that general opinion approve of the individuals' being held responsible for both the success and the failure of their endeavors. When men are allowed to act as they see fit, they must also be held responsible for the results of their efforts.*

Smith and Hayek made a case for cultural factors as important to economic prosperity. Smith, as a classical economist, also postulated that people are born with a moral sense, just as they have inborn ideas of beauty or harmony. The conscience, which can be molded, tells people what is right and wrong. The conscience is innate, not given by lawmakers or by rational analysis. Smith reasoned that the natural senses of conscience and sympathy enable human beings to live as a community in orderly and beneficial social organizations. As such, Smith laid a foundation for the modern understanding of trust and social capital in terms of their great importance to human prosperity. As the first section of this essay ascertained, the classical understanding was temporarily lost with the emergence of the Neoclassical paradigm.

4.3.2 Max Weber

The most renowned advocate for culture's influence on economic prosperity is Max Weber. His theory is particularly prominent in *The Protestant Work Ethic* (1905). In this classic work, Weber defines the rise of capitalism as the ideas and "*esprit*" that favors the rational pursuit of economic gain. Weber held that certain types of Protestantism strongly supported a rational pursuit of economic gain and those worldly activities were given positive spiritual and moral meaning around the time of the Reformation (1517). The pursuit of economic gain was a byproduct of religious doctrines that directly and indirectly encouraged a more stoic approach to life including planning and self-denial. Leaders of the Protestant revolution like Erasmus and Martin Luther introduced a focus on the individual and on independence in religious matters that had strong repercussions in social life.

According to the new Protestant denominations, an individual was religiously compelled to follow a secular vocation with as much zeal as possible. This vocation was

explained as one's calling in life and led to a focus on a standard of excellence in one's livelihood. Success in life provided evidence of God's approval and further stimulated the believer's efforts. Indulgence in the wealth that hard work and excellence brought forth was strongly discouraged. Saving and investment became the outlet for the wealth.

These religious changes and their social outcomes gave room for the "heroic entrepreneur" that sustains capitalism (Weber 1905: 23). Weber (1905: 32-33) saw the fulfillment of the Protestant ethic most strongly in Calvinistic forms of Christianity. The movement was further developed in Pietism (1905: 90). The Baptists diluted the concept of the calling relative to Calvinists, but other aspects, like the lack of paralyzing ascetics, made its congregants fertile soil for the development of capitalism since it increased demand for goods. Similarly, the refusal to accept state office and thereby focus efforts outside the political system, and the doctrine of control by conscience, which caused rigorous honesty, induced capitalistic traits (1905: 102-104) and increased the number of potential trading partners.

Weber also posited that at the moment capitalism was established, a cruder form of the economic system could survive infinitely without the religious underpinnings that founded it. Weber's thesis that ideas influence historical developments turns Marx's historical determinism on its head by implying that a religious movement cultivated capitalism. Weber's analysis has received much criticism, but it has seen a renaissance with modern econometric techniques that have substantiated his cultural claims. Examples of this research are Granato (1996), Marini (2004), and Minkov and Blagoev (2009).

The Protestant religion was not the only belief-system providing fertile soil for capitalism. In *The Jews and Modern Capitalism,* Werner Sombart (1911) proposed that Jews were in possession of cultural characteristics equally favorable to capitalism. However, the fact that the Japanese capitalist system is supported through a religious foundation as well is little known. Robert Bellah (1957) has described how the work ethic in Japan was promoted by the Buddhist and Shinto writings of Ishida Baigan (1685-1744), a central figure within the Tokugawa religion. Ishida's philosophy of Shingaku, or practical ethics, explained that the human goal was to unite its individual spirit (Kokoro) with the universal spirit. To achieve this goal an individual's spiritual and mental capacity had to be utilized to the fullest extent to overcome individual desires. Only by overcoming the ego the individual would be able to fulfill his or her duty in life. This duty included a spirit of self-sacrifice toward the sovereign, parents, and towards a proper vocation in life. Baigan formulated an ethic that valued the merchant profession and strongly emphasized that profits where a just reward for excellence (Ooms 1985). Robert Bellah (Year) concluded that the motivation that makes the Japanese thrust, body and soul, into their vocation, has a strong religious origin.

Another important religious figure in pre-industrial Japan was the Buddhist monk Suzuki Shosan (1579-1655). He taught that the vocation itself was a religious activity. Followers were encouraged to leave everything to Providence, to be honest, and not to arouse personal desires (Ooms 1985). Similar to Baigan, Shosan believed that "Salvation was found through everyday work, through an asceticism and a total devotion to the task assigned by the authorities; a devotion so complete that it should not leave psychological space for desires, and would inexorable lead to the elimination of the self"(Ooms 1985:63). Religious worship outside one's vocation was rendered superfluous. Braverman (1989: 14-15) quotes the Zen Master Bassui: "A believer's body is the Buddha body, his mind the Buddha mind, and he performs the work of the

Buddha. When cultivating the land, reciting Namu Aminda Butsu with every movement of the hoe, he will surely reach Buddhahood."

Other researchers that have promoted a similar Weberian thesis include Yamamoto Shichihei, *The Spirit of Japanese Capitalism* (1991), Japanologist Frank Gibney, *Miracle by Design: the Real Reasons behind Japan's Economic Success* (1982). Shichihei focused on the particulars flavor of the Japanese enterprise. Ooms (1985:62) wrote that "

> *He stressed the communal spirit of the Japanese and the familial character of the enterprise and the consensus that replaced the formal contract. the secret of Japan's economic success would be no other than a religious motivation. In effect, we accept the undeniable existence in Japan, of a cultural ideal of abnegation, of suffering silently, of asceticism – there are no melodramas in television without their hero, nearly always a heroine, who represents this ideal.*

4.3.3 Banfield and McClelland

Banfield (1958) and McClelland (1961) are other classical authors that have focused on individual cultural virtues as paramount in the emergence of capitalism and subsequent economic growth. McClelland theorized that the ethic of capitalism could be summarized through attitudes like the "*need for achievement*" and defined as "*wanting to do well, with respect to standards of excellence*." McClelland found that the need for achievement was positively correlated with the need for individual independence, and with teachings in elementary school education. One of McClelland methods was to study whether the heroes and villains in children's stories were hard working and thrifty or had attributes more detrimental to economic growth. McClelland found that in cultures where the need for achievement was high, as operationalized by the

children's stories, countries had a high rate of economic growth. Countries that focused on the importance for affiliation through social relationships, and similar values, had no positive correlation to economic growth. McClelland's studies were criticized for their methodological approach with regard to his use of children's stories as instrumental variables. Nonetheless, starting with Greif (1994), and Granato (1996), a current renaissance of studies that supports McClelland's thesis (not his methods) has taken place.

Thus far the theoretical discussion has focused on individual values relative to personal achievement. Some researchers emphasize that not only individual values, but also collective ones, are important to economic prosperity. McClelland (1961: 192, 197, 201) stated that other-directedness is an essential feature of rapid economic development, even in the early stages of growth. Weber had also touched upon this by noting the Protestant doctrine of control by conscience, which caused rigorous honesty (1905: 102-104).

In 1958, Harvard Professor Edward Banfield wrote *The Moral Basis of a Backward Society*. The backward society was the village of Montegrano in Southern Italy. Banfield traveled there for an in-depth case study. He used the term "amoral familism" to explain the backwardness of the inhabitants he found in Southern Italy. The villagers rarely cooperated with one another outside the boundaries of their immediate families. Banfield wrote that "the Montegranesi act as if they are following the rule: Maximize the material, short-run advantage of the nuclear family; assume that all others will do so likewise…no one will further the interest of the group or community except as it is to his private advantage to do so"(1958:85). Banfield held that "the amoral familist who is an office-holder will take bribes when he can get away with it; but whether he takes bribes or not, it will be assumed by the society of amoral familists that he does"(87-103).

Banfield's findings can be generalized to most of Southern Italy. In contrast, in a town in a remote isolated part of Southern Utah, he found that the residents showed a high level of cooperation and well functioning collective action procedures sustaining a remarkable variety of associations. More honest behavior created higher trust levels that led to reduced transaction costs and ensured dramatically-higher levels of economic interaction. Alexis de Tocqueville elaborated in depth on the civic associations of America in the 1800s providing evidence that the example of the Utah town may be generalized to many communities and states in the USA.

In Southern Italy, people did not cooperate; in Southern Utah collective action in various forms was the foundation of their society. A large body of work now exists on the theme of social capital that buttresses Banfield's original findings. Using similar logic, sociologist Talcott Parsons, concluded that culture is underdeveloped in poor countries. He held that dramatic cultural change was needed in order for these societies to succeed economically. Parsons saw the European Reformation as the most important event in "modern" world history. The impact of Calvinism reached its most radical form in England during the seventeenth century and gave birth to the cultural that characterizes the American value-system according to Parsons.

Francis Fukuyama (1995) emphasized that social virtues that create trust are required in the exchange stage of the economy, while "the achievement syndrome" is important in the production stage. Fukuyama hypothesized that 80 percent of prosperity is due to individual virtues and 20 percent is due to social virtues. Recently, work following in Elinor Ostrom's framework (1990), has provided evidence that the "Tragedy of the Commons" is often better solved without government intervention or the creation of artificial markets. Her work on institutional collective action offers more evidence for the importance of individual cooperation built on trust to the economy.

McClelland stated that this second factor of other-directedness was as important as the achievement aspect. Also, McClelland specified other-directedness as "market morality." He said that "Since 'n' achievement and other-directedness are both related to economic development and unrelated to each other, they should, taken together, have a very marked effect on the rate of economic development."[46]

In *The Achieving Society*, David McClelland (1961:194-196) pointed out that economists concur that the growth of the market is at the center of modern economic society. The level of restriction of economic markets by social institutions defines how near the market is to efficient allocation of economic resources. He cited Hozelitz (1958) and said "one can measure the maturity of an economy by the absence of 'imperfections' in the market mechanisms, by the degree of openness, freedom, and absence of other obstacles to the smooth allocation of resources among competing uses'' (1961:195). The restriction of the economy comes from traditional values or norms that explicate how one should behave towards 'particular groups of others,' including superiors, inferiors, relatives, friends, and strangers. McClelland writes that "The most generalized solution, then, to the problem of particularistic commitments is to transfer the individual's loyalties to the 'generalized other.' Reliance on public opinion is the social mechanism which tends to supply and enforce *market morality*, and market morality is essential to removing market imperfections that slow economic progress" 1961:196).

Because other methods rarely were available, the above theories were only supported empirically by case studies and doubts about their generalizability lingered. By the time quantitative methods came to the forefront, cultural explanations had lost

[46]Marini (2004:775) cited: David McClelland, *The Achieving Society*, see references, pp. 197, 192 and 201 abridged.

esteem in favor of more mechanical approaches in economics, and as Paterson (2006:13) concluded, “the rejection of any explanation that invokes a group’s cultural attributes, its distinct attitudes, values and predispositions, and the resulting behavior of its members in other social sciences.”

4.4 Contemporary Theory

Cultural explanations have seen a renaissance over the last decade. In *Wealth and Poverty of Nations (1998),* David Landes’ thesis maintained that culture is a determinant of prosperity. Landes stated, "If we learn anything from the history of economic development it is that culture makes all the difference . . . what counts is work, thrift, honesty, patience, tenacity" (1998: 516, 523). Sociologist Rodney Stark (2005) held a similar position as Landes. Stark provided evidence that the concepts of freedom and capitalism were natural outgrowths of Jewish and Christian theology as well as favorable economic conditions. Stark said that the “Dark Ages” were more progressive and enlightened than the Classical World. He criticized the geographical determinism of Jeffrey Sachs and Jared Diamonds, by asking why the Chinese were in possession of gunpowder, but did not develop guns or cannons? Why they acquired paper, but not the printing press, nor books and a system of libraries? Stark rationalized that these differences could be explained by culture. Stark also modified Weber and illustrated how significant elements of Catholicism were focused on thrift and entrepreneurship. He did this by an elaborate analysis of the rapidly growing Northern-Italian City-states (800-1400 AD).

Roover (1958) gave a good illustration of the existence of Catholic capitalism. He discussed the original merchant documents from the medieval period of 1200 - 1400. One example is the approximately 150,000 letters written by the Merchant of Prato,

Francesco Datini, from 1340 to 1410. Datini usually ended his letters "In the name of God and of Profit." However, he kept to the ideals of this period by claiming not to seek profit for profits sake. He left most of his immense wealth to the poor of the city.[47] The uses of formulas like "In the name of God and of profit," for instance, go even further back and many examples have recently been found in thirteenth-century account books. Examples of these are the Castellani, ed., Nuovi testi (AD 1253: 207, AD 1263: 210, AD 1262: 213, AD 1277: 291, and AD 1280: 303).

According to Roover (1958: 46-49), the true thought of the medieval merchants is clearly revealed in the longer invocations on the first page of account books. "They pray the Lord to bless them with profits and to shield them against losses. At the same time they often ask God to preserve them in good health and to protect them against illness. Usually they end up by beseeching the Lord to save their souls." Thomas Aquinas supported trade and similar economic activity on the background that humans are not self-sufficient, "it is God's will that they should barter or trade with each other. Trade, therefore, is not in itself an evil occupation provided that its prime purpose does not consist in indefinite accumulation of wealth" Roover (1958:39). Thomas Aquinas's (1226-1274) scholastic philosophy and Christian ethics dominated social life in this period. Consequently, Stark and Roover modified Weber's hypothesis and provided evidence that the same ideas that appeared in the Protestant Ethic were also present in certain strains of Catholicism.

[47] *The Story of the Alberti Company of Florence*, (1302 – 1348), as revealed in its account books.

4.4.2 New Institutional Economics

Compared to the Neoclassical paradigm, the scholarship in New Institutional Economics is more responsive to the notion that culture is influential in determining historical progress. Douglass North posed the query, "What is it about informal constraints that gives them such a pervasive influence upon the long-run character of economies?"(1991: 111). Notable exceptions include Darron Acemoglu (2001) who, similarly to Marx's theory, maintained that economic growth is mainly a technological and institutional question minimally influenced by culture.

As noted above, not many of the authors discussed have applied a rigorous quantitative analysis to provide evidence for their theories. Their arguments have, for the most part, been founded on theoretical elaborations, empirical evidence, and qualitative methods. Recently, however, several researchers have attempted quantitative analysis of cultural variables. Guiso et al. (2006) tested and supported through instrumental variable analysis three channels by which culture affects economics. The first is through political preferences by favoring either redistributive or productive policies. A second mechanism is that culture can affect economic preferences, which, in turn, affect economic outcomes. A third mechanism provided by Guiso et al. is the effect of culture on prior beliefs, which, in turn, affect human action and economic outcomes.

Guiso et al. found that religion and ethnic origin influence the level of savings among individuals. They found that culture, as defined by religion and ethnicity, affects beliefs about trust. Regularly attending religious services increases trust towards others by 22 percent relative to non-religious people. Evidence of cultural influence using ethnic origin as a proxy is the strong positive correlation between the average trust level

in an immigrant's country of origin and trust in his new environment. This relationship was tested on second and third generation immigrants.

In a study of the United States, Tabellini (2007) also found strong support for this thesis. By researching second or third generation immigrants to the United States he found that they keep the same trust levels as the average level in their grandparents' native country. Analysis of many different data-sets reveals that trust has a positive and statistically-significant impact on the probability of becoming an entrepreneur. In the *World Values Survey* (1995) the correlation between variables measuring trust and entrepreneurial values is very high. Cultural factors may, therefore, be drivers of economic growth through the mechanism of increased trust that allows for an environment and a belief in the value of entrepreneurship described in Josef Schumpeter's creative destruction.

4.4.3 Egalitarian Norms

Platteau (2000: 196-198) describes some central structural characteristics of tribal societies that generate a subpar economic equilibrium that prevents Weber's "heroic entrepreneurs" from emerging. These cultural characteristics are described as the 'real societies' which exist 'behind the market stage' (Corbridge 2001).

The first characteristic is that relative position in these cultures is much more important than absolute position. Age, gender, and family lineage represent the thresholds for social status. People are not encouraged to work to improve their social position. If someone appears to be successful, he is met with jealousy, and seen as a threat to the social order. He risks ostracism unless he shares his wealth with his tribe. Consequently, there are very strong disincentives to invest resources in the future.

There is an inherent logic to this system that comprises a subpar Pareto equilibrium of productive undertakings. If one member of the society were to be allowed to succeed there is a fear that this individual would break loose from the group or "solidarity pool" that is part of securing the income for the whole group. This abandonment would reduce the total amount of income in the insurance pool and the tribe would be less able to spread risk. Private accumulation of wealth is therefore perceived as anti-social behavior. Success is attributed to luck and fool play, and not persistence and hard work. Combined with the fact that the economy is understood as a zero-sum game, a successful person is therefore judged as having gained an unfair advantage. Successful people are thought to have used witchcraft to cast a spell on other people turning them into zombies that work for them at night resulting in tired and lazy behavior during the day.

During sporadic periods of economic growth the use of witchcraft and human sacrifice has increased.[48] Social pressure and coercion are used to force successful individuals to share their wealth. Corbridge (2001:85) said that "an understanding of the rational and disinterested norms which are supposed to inform the practices of the state … are missing at the ground level in these cultures." The economic psychology in these tribal societies is called the resource-monotonic principle in social choice theory. This principle holds that everyone should benefit equally from growth not only the maker of the growth.

In addition to the resource monotonicity principle, Platteau emphasizes the differences in trade and the market system. Platteau argued, according to Grabowski (1999:4) that "if market exchange and specialization is to expand beyond small group

[48] Uganda: "Battling the Witch Doctors" screened on BBC2 at 10.30pm January 7 2010.

situations, an impersonal market mechanism must replace the personalized reputation-based market." This is an indirect critique of Granovetter's sociology. Like Parson's, Granovetter (1985:490), emphasized that economic action is embedded in structures of social relations. His theory underlines that personal relations and networks generated trust and discourage malfeasance. Granovetter "…thinks that such mechanisms are at work to the same degree in modern industrial societies as well as in traditional agricultural societies" (Grambowski 1999:4).

The term that Platteau used to describe societies governed by norms beneficial to prosperity is "generalized morality."[49] In societies where generalized morality is incorporated, a majority of the citizens believe that all individuals are entitled to specific rights. Loyalty and honesty is bestowed upon people outside the social circle to include society as a whole. The consequence of society internalizing this belief is the development of social capital that sustains order in the marketplace. The environment of trust reduces transaction costs and is conducive to both economic growth and life-satisfaction in a society.

Despite improvement in policies and formal institutions, market relations have not been embedded in some African, South American, and Middle Eastern countries. This is precisely because they lack the 'generalized morality' necessary to sustain trust in contracts over time and space. In the African societies described earlier, as well as the Southern-Italian villages, "limited morality," where codes of good conduct and honest behavior are confined to small circles of related people, dominate. Good formal institutions that actually become "rules in use" appear in societies with generalized morality. Good formal institutional structures can be exogenously imposed (like in

[49] This term was coined by Harvard political scientist Banfield (1958) and used by Platteu (2000).

many former colonies of European powers), but will not become "rules in use" since they are not compatible with the informal institutions that lack features of generalized morality.

In regards to the basis for economic interaction, Avner Greif (1994) has investigated the collectivist Maghreb institutions and compared them to the more individualistic city-state of Genoa. He explained that "the interactions between institutions, exogenous changes, and the process of organizational innovation govern the historical development of society and the related economic, political, legal, and social constructs" (941). Greif defined culture as part of the institutional framework. The two systems generated by the two cultures were efficient in independent fashions. The collectivist culture had lower intra-trade transaction costs whereas the individualist culture had lower inter-trade transaction costs. Individualist cultures are more supportive to specialization and innovations and this has contributed to the rise of the West according to Greif.

Weber's theory on the Protestant Work Ethic has clear parallels to the story of the Genoese and the Maghreb. Tabellini (2008) built on Greif's research and illustrated, with language as an instrumental variable, how culture determines institutional evolution. The Maghreb culture represented a clear advance relative to amoral familism because the circle of trust was larger, but still inferior economically to the social system of "generalized morality" and the individualist culture that emerged in the Italian City-states at the same time.

A far-reaching effect of generalized morality, or market morality as McClelland called it, is that individuals better internalize the social optimum through other-regarding behavior. This has virtuous effects on society. The necessity of creating

artificial markets where they would otherwise be missing is lessened. People possessing sympathy, or cultural codes of good conduct, have an interest in honest behavior that might be costly to them in strictly monetary or material terms, but good for society. These effects are not captured in simple Neoclassical utility maximization models. Transaction costs are greatly reduced in a society where opportunistic behavior is limited. Criminal activity also diminishes when people are guided by intrinsic values that condemn this behavior. This leads to lower enforcement costs. The presence of a system of generalized morality may explain why the social democratic welfare states in Northern Europe had such long periods of economic growth until the 1980s, despite a sometimes less than optimal incentive structure created by economic policy-making.

4.4.4 Post-Materialism and the Secularization Hypothesis

Inglehart (1997) advocated a cultural theory maintaining that mature economies experience a diminished focus on economic growth in favor of environmentalism and equality for minorities. Inglehart called these "post material" values. He also promoted an idea that first appeared with John Wesley in the 1700s, and Max Weber (1930, published posthumously), that economic development causes individuals to become less religious as measured by church attendance and religious beliefs like God and the afterlife (heaven, hell). This hypothesis illustrates how the economy may give feedback that gradually changes culture. Inglehart's model of linear advancement of culture is similar to Habermas's life-system theories and also influenced by Darwin's theory of evolution.

However, the idea of a progressive evolution of social systems did not originate in the natural sciences. Habermas's model recycles August Comte's (1822) "law of three phases," the theological, the metaphysical, and the scientific phase. In the secularization

theory, society follows a progression from primitive societies to traditional societies, followed by modernity and finally post-modernity. The secularization hypothesis contains the idea that economic development causes organized religion to play a lesser role in political decision-making and in social and legal processes. Turkey was an example of this theory. But, there has been a strong resurgence of religion in Turkey in the 21st century reversing the previous hundred years of secularization.

Scholars like Stark (2005) and Inglehart (1997) held that the decline in church attendance in Western European countries is not a result of a reduction in religious beliefs, but a privatization of religious beliefs and an increasingly individualistic culture that follow as a consequence of the removal of responsibility for education from the family and community to the state. Consequently, the collective conscience, the shared beliefs and moral attitudes that operate as a unifying force within society, as defined by Emil Durkheim (1893), is diminished and through the fragmentation of communal activities, religion has lost its position as an observed social obligation and has become a matter of individual choice.

The fall of religious attendance in Europe has not been mirrored in the United States. Robert A. Wortham (2004) maintains that by offering a high selection of religions and religious products, as opposed to the state-sponsored religious monopolies in Western European countries, a competitive religious economy stimulates activity in the marketplace. Wortham's argument is in accordance with the economic theory of Say's law, that supply creates its own demand. Because the totality of empirical evidence is indefinite, the empirical standing of the Post Materialism and the Secularization hypothesis is currently ambiguous.

4.5 A Testable Theory on Culture

When measuring culture it is important to avoid spurious correlations and cultural explanations becoming after-the-fact rationalizations. An example can be gathered from Granato et. al (1996). He used religious beliefs as a measure of a limited good syndrome. His reasoning was that religion is strongly present in traditional societies and these societies have less economic growth. However, in treating religions as singular his model loses theoretical coherence. This section tests the hypothesis that a higher presence of advantageous cultural traits increases economic prosperity. As discussed in section 4.3.2, Max Weber's theory posited that religions had different proclivities for productivity and economic growth. A singular variable measuring religious adherence is not useful in explaining economic growth in this background. Religion may be used as an independent variable according to Weber's theory only if one controls for the religious type. A similar critique of Granato et. Al's work appears in Marini (2004).

To examine the independent cultural impact on economic prosperity, cultural traits are divided into three sub-groups. The following hypothesis explains that culture influences economic growth through achievement motivation represented by cultural traits like independence, thrift, entrepreneurial values, a standard of excellence in ones vocation, and traits that build generalized morality like honesty, and unselfishness. Achievement-related values induce: 1) increased productivity, and 2) economic and political stability. The values related to generalized morality leads to trust, which again leads to 1) a reduction in transaction costs, 2) enlarged markets, and 3) surrogates for the missing markets that appear in a purely self-regarding environment. The regression model does not measure the intermediate mechanisms; it only investigates the relationship between cultural attributes and economic growth.

4.5.1 Hypotheses for Measuring Culture

Hypotheses 1 and 2 relate to the achievement orientation identified by Weber, and are based on the theoretical discussion built in the last two chapters. The concept of achievement orientation is here designed to encompass both the values that serve as a motivation for accomplishment and the beliefs that work as a catalyst for these cultural traits of accomplishment. Remember that a Belief was defined as the emotional or spiritual sense of certainty by the mind about a particular truth, while a Value is the accepted principles or standards based on these beliefs. The intrinsic motivation for acting according to these cultural traits can be based on national and religious interests as well as a struggle for personal success. The achievement-oriented beliefs and values are theorized to be important in the production stage of the economy. Weber defines achievement as "wanting to do well, with respect to standards of excellence" according to McClelland (1961).

4.5.1.1 Values of the Achievement motivation

The achievement motivation is separated into two categories. The first category is concerned with values and the second is concerned with beliefs. The first category contains values that parents teach their children, like thrift and independence. Max Weber was the first to point to the high correlation between need for achievement and independence. Josef Schumpeter (1934) listed the need for independence as one of the four motivations that drive entrepreneurs. Independence is a strong trait in individualistic cultures and fosters the ability and the acceptance of 'thinking outside the box' and challenging the status quo. This cultural trait is important to the rate of invention, and in particular for innovation. Innovation is the process of introducing an invention into the marketplace and is the fundamental essence of entrepreneurship.

Independent thinking also increases the acceptance in the population for new and different solutions.

Obedience and unquestionable respect for authority, on the other hand, represent values that are a sign of a limited good syndrome in the culture according to Granato (1996) and Marini (2004:782) because it suggests "…accept the present distribution of income (obedience)… and suggests the persisting belief that resources are limited and not expandable—even in times of technological progress." The limited goods syndrome is the underlying worldview of the concept of amoral familism introduced by Banfield (1958). Obedience and respect for authority is antithetic to individualism, independence and the entrepreneurial spirit. In countries where respect for authority in the general population is high, and obedience is an emphasized value in children's upbringing, the economy is therefore expected to be more stagnant.

Thrift is another achievement-oriented cultural trait emphasized by Weber. Higher savings rate is thought to be good for economic growth for several reasons. Firstly, it induces a general penchant towards efficiency with reciprocal effects for the individual as well as the collective. Secondly, saving increases the availability of funds for investment in the economy. Investment drives resources into inventive and innovative undertakings. Thrift is one of the characteristics of the early Protestant movement and is a strong characteristic of Confucian culture as well through its long-term attitude towards life described in Hofstede's fifth cultural dimension. Max Weber (1905) said it was a byproduct of religious doctrines that directly and indirectly encouraged a more stoic approach to life, including planning and self-denial. This leads to the following hypothesis measuring achievement-oriented values:

> **Hypotheses 1:** *On average, cultures with a higher concentration of values identified as an achievement orientation, relative to a concentration of values supported with a limited*

good belief, experience more rapid growth in economic prosperity.

This hypothesis is tested as two sub-hypotheses:

Hypothesis 1 a) *In countries where independence is emphasized in children's upbringing, the economy will grow faster.*

Hypothesis 1 b) *In countries where parents emphasize thrift, and saving, the economy will grow faster than in countries where thrift is not emphasized.*

A second sub-category is the belief system and existential mind-set that serves as a rationale for the achievement motivation. These beliefs consist of some of the central tenants in Weber's "Protestant Work Ethic" and give rise to the "Spirit of Capitalism." This factor is therefore named the Spirit of Capitalism in this dissertation. Achievement in the Protestant belief system emphasizes the social status gained through personal merit rather than as a result of the circumstances into which someone is born. Weber said it is particularly advantageous in technical occupations for workers to be extremely devoted to their craft. To view the craft as a "calling," and as an end itself, increases quality and efficiency in workmanship and results in long-term prosperity. This attitude is obvious in places where individuals have endured religious education, especially in a Pietistic background, according to Weber (1905).

Weber maintained that this spirit is not limited to Protestant cultures if one considers it an attitude of individuals. However, these "heroic entrepreneurs" could not by themselves establish a new economic order. Only the new religious influence of Protestantism could promote a societal shift towards a new economic system. Weber shows that certain types of Protestantism favored a rational pursuit of economic gain and that worldly activities had been given positive spiritual and moral meaning

because they showed approval from God. Profit was not the goal of those religious ideas, but rather a by-product. The inherent logic of the doctrines, and the advice based upon them both directly and indirectly encouraged planning and self-denial in the pursuit of economic gain. This leads to:

> **Hypothesis 2: Beliefs of the Achievement motivation**. *On average, where a larger percentage of the population believes that individuals should strive for a standard of excellence, prosperity levels are higher.*

4.5.1.2 Generalized morality

"Where there is no trust, there can be no contract" according to Thomas Hobbes in *De Cive* (1651). This third group of hypotheses builds on Platteau's (2000) concept of generalized morality. Generalized morality creates social capital that enhances collective action processes. The mechanism is as follows: the cultural emphasis on honesty, unselfishness, and sympathy for others reduces opportunistic behavior and creates trust; trust reduces transaction costs and enlarges the market. The larger the social circle, the more social capital and the larger the economic market. A larger market makes a higher division of labor possible. A more specialized economy increases in productivity. Productivity increase is the most important long-term source of economic growth (Jorgenson and Griliches 1967).

Putnam (1993:167) defines social capital as "features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated action." In this work generalized morality is defined as the degree of honesty and unselfishness. Trust is an outcome of these two attributes. The definition does not include interpersonal networks (Granovetter 1973, Putnam 1993). One of the main effects of generalized morality is that it reduces opportunistic behavior in society. By adding cultural traits to the framework of Transaction Cost Economics (TCE)

(Williamson 1975, 1985), the lower transaction costs that can be achieved through generalized morality can be illustrated. Because the social and individual enforcement mechanisms reduce opportunism, fewer resources are spent on contract writing, and ex-post monitoring.

The effect of social capital was illustrated through the materials factory discussed in Section 4.1, where precaution and enforcement costs fell because people were law-abiding and less opportunistic. Wallis and North (1986) calculated that 45 percent of U.S. GDP in 1970 consisted of transaction costs. If this assessment is even remotely correct, transaction costs play a very significant role in the economy. Consequently, when opportunistic behavior is reduced because citizens have higher moral standards, as theorized by McClelland's "market morality" society will sustain a higher number of productive undertakings. This leads to:

Hypothesis 3: *On average, higher levels of generalized morality increase economic growth.*

Hypothesis 3 is tested as three sub-hypotheses.

Hypothesis 3a) *Countries with a higher level of honesty in the population will experience higher economic growth.*

Hypothesis 3b) *Countries with a higher level of trust in the population will experience higher economic growth.*

Hypothesis 3c) *Countries where there is a higher proportion of parents who emphasize teaching children unselfishness, will experience higher economic growth.*

4.6 Methodology

The empirical analysis proceeds in two steps. The first step is a factor analysis of the variables that indicate each latent construct. The second step is a regression analysis including the factors identified in the first step. The factor analysis attempts to discover the underlying constructs of achievement orientation, and generalized morality in the hypotheses. There are also other good reasons to use factor analysis in analyzing subjective variables. Nunnally and Bernstein (1994), McIver and Carmines (1981), and Spector (1992) argued for using multi-item measures instead of a single items for measuring attributes (Gliem 2003).

First, considerable random measurement error is associated with individual items, leading to unreliability in the measurement. When measuring attributes, Nunnally and Bernstein (1994) indicated that measurement error averages out when individual scores are combined. Second, an individual item can only categorize individuals into a relatively small number of groups. An individual item cannot discriminate among fine degrees of an attribute. For example, with a dichotomously scored item (such as yes/no) one can only distinguish between two levels of the attribute, i.e. they lack precision. Third, individual items lack scope. McIver and Carmines (1981) stated that a single item cannot fully represent a complex theoretical concept or any specific attribute (Gliem 2003).

As in the first two chapters, this model is tested data from the World Values Survey using the 1995, 2000, and 2005 surveys. Cultural data from each country is not always available for every country in the same year. The model, therefore, has to use cultural data from different years for some countries. This is not problematic because cultural values are to a great extent steady over a period of a few decades and shorter

according to Inglehart and Baker (2000) and Hofstede (2001). This is discussed in more detail in section 4.6.4. The resulting factor loadings and the description of the variables within the factors analysis are shown in Table 8.

Table 8: Final Factor Loadings for the Cultural Constructs from the WVS

Entrepreneurial Values	**Factor Loading**
Is independence an important quality that children should learn? 1 = No, 2 = Yes.	0.73
Is obedience an important quality that children should learn? 1 = No, 2 = Yes.	0.75
Would it be good if there were more respect for authority? 1 = No, 2 = Neutral, 3 = Yes.	0.80
Spirit of Capitalism	
Can people decide their destiny or is it impossible to escape a predetermined fate? 1-10 scale where 10 = People shape their fate themselves and 1 = Everything is determined by fate.	0.78
Can wealth grow and multiply or can people only get rich at others' expense? 1-10 scale where 10 = Wealth can multiply and 1 = Only get rich at others' expense.	0.73
Imagine two secretaries doing the same job. Is it fair that the secretary with more reliable, efficient and higher skills is paid more? 1 = Not Fair, 2 = Do not know and 3 = Fair.	0.83
Trust in Institutions	
How much confidence do you have in The Police? 1 = None, 2 = Not very much, 3 = Quite a lot, 4 = A great deal.	0.64
How much confidence do you have in the Political Parties? 1 = None, 2 = Not very much, 3 = Quite a lot, 4 = A great deal.	0.77
How much confidence do you have in the Government in your nation's capital? 1 = None, 2 = Not very much, 3 = Quite a lot, 4 = A great deal.	0.81
How much confidence do you have in the Parliament? 1 = None, 2 = Not very much, 3 = Quite a lot, 4 = A great deal.	0.85
How much confidence do you have in the Civil Service? 1 = None, 2 = Not very much, 3 = Quite a lot, 4 = A great deal.	0.73
Honesty	
Claiming a government benefit that one is not entitled to? 1-10 scale where 10 = Never Justifiable and 1= Always Justifiable.	0.72
Avoiding a fare on public transport? 1-10 scale where 10 = Never Justifiable and 1= Always Justifiable.	0.79
Cheating on taxes? 1-10 scale where 10 = Never Justifiable and 1= Always Justifiable.	0.81
Accepting a bribe in the course of one's duties? 1-10 scale where 10 = Never Justifiable and 1= Always Justifiable.	075

The analysis is first performed simultaneously on 77 likely variables in the World Values Survey. This procedure identified factors that were isolated in groups. The factor analysis is reiterated until only high factor loadings are left (MSA guidelines). The factor analysis is estimated using the principal component analysis method. The rotation for the estimate is Varimax.

Following the work of Comrey and Lee (1992), Tabachnick and Fidell (2001), and Gorsuch (1983) a factor loading of at least 0.60 is considered good to very good. Factor loadings 0.60 and below are considered "independent" of the construct under consideration. Many scholars use variables with a loading between .40 and .60 as well. The loading cut-point of .60 provides confidence that the loadings constitute a convincing basis for interpreting the factors.

For Hypothesis 1, there exist variables in the survey that contain the exact wording of Hypothesis 1a and Hypothesis 1b. A factor analysis presented in Table 8, reveals that the variable of valuing independence loads negatively on teaching obedience and respect for authority. For Hypothesis 2a, Factor analysis of the World Values Survey shows that three variables load on the concept of beliefs that support the achievement motivation. These variables are: 1) the belief that wealth can multiply by productive efforts, 2) the principle that people should be rewarded relative to their contribution, and 3) a measure of the degree of belief in destiny versus the belief in a predetermined fate. All these three variables complement each other from a theoretical perspective and they give rationale for the pursuit of Weber's "Standard of Excellence" and the "Spirit of Capitalism." These three variables also represent a rejection of the "limited goods" syndrome identified earlier.

For Hypothesis 3a, a factor analysis of the World Values Survey reveals four

variables that load on the concept of Honesty. These variables are the propensity to bribe someone in the course of one's duties, willingness to cheat on taxes, to ride for free on the public transportation system, and to cheat on the welfare system. Trust might be influenced by other factors than honesty, whereas Hypothesis 3a is an indirect measure, Hypothesis 3b is a direct measurement of trust. Variable 23 in the World Values Survey (2005) asked if most people can be trusted. This question together with the questions of trust in the Government, the Police, the Civil Service, and the Political Parties may serve as good proxy variables for the real level of trust in society. The variables load highly as a single factor in the World Values Survey.

The second step in the methodological application used in testing the hypotheses is Ordinary Least Squares (OLS). The common issues of multicollinearity and heteroskedasticity are addressed, with the latter addressed through the use of White's correction (see Greene 2003). Multicollinearity is addressed by Collin's diagnostic. The total sample of 72 observations includes 55 low and middle-income countries and 17 observations of high-income countries. The total number of countries in the World Values Survey is 92, but some values are missing from 20 of them precluding their inclusion in the sample. The diverse sample of countries from across the globe ensures that cultural diversity and other regional and country-specific factors will be integrated into the analysis.

The sample is split into two groups. The first group represents countries with a GDP per capita less than $10,000 in 1969. The second group represents countries with a GDP per capita above $10,000 in 1969. A split sample gives a much clearer illustration of the difference between developed and less developed nations, but more importantly it allows for the possibility that some variables can influence growth differently in various

stages of economic development. One of the purposes of this research is to examine the cultural impact of economic prosperity in developing nations.

4.6.1 Variables

The following analysis tests the hypotheses while controlling for a series of potential confounding factors. Description of the variables and hypothesized directions are offered in Table 9.

Table 9: Variables, Description, and Hypotheses

Variable	Description	Hypothesis Tested	Hypothesis Direction
Dependent			
Economic Growth	The PPP adjusted percentage level of GDP growth from 1969 to 2008		
Independent			
Entrepreneurial Values	Factor- See Factor Loadings in Table 8.	H_{1a}	+
Thrift	Is Thrift a quality that children should learn at home? 1 = No, 2 =Yes.	H_{1b}	+
Weber's Spirit of Capitalism	Factor- See Factor Loadings in Table 8.	H_2	+
Honesty	Factor- See Factor Loadings in Table 8.	H_{3a}	
Trust in People	Factor- See Factor Loadings in Table 8.	H_{3b}	+
Trust in Institutions	Factor- See Factor Loadings in Table 8.	H_{3b}	
Unselfishness	Is Unselfishness a quality that children should learn at home? 1 = No, 2 =Yes.	H_{3c}	+
Controls			
Initial Level Income	The PPP adjusted GDP in 1969		-
Education	Average years of education 1970- 2000. (Cohen 2000)		+
Legal Structure & Property Rights	Source: Economic Freedom of the World, Gwartney and Lawson 2009.		+
Free Trade	Source: Economic Freedom of the World		+
Size of Government	Source: Economic Freedom of the World		
Totalitarian	Dummy variable: If a country was totalitarian for most of the time period (source: Polity IV)	Sensitivity = I-variable	
Communism	Dummy variable: 1 if a country was former communist	I-variable	-
Geography	Distance from equator	I	

The next section reveals the theoretical justification for the choice of control-variables.

4.6.2 Control Variables

The control variables are meant to account for factors that the literature suggests have an influence on economic growth. By controlling for these factors the model is less likely to support incomplete and potentially spurious, as well as non-existent, relationships. The control variables included are initial income level, average educational level, legal structure and property rights, free trade, size of government, political system, geography, and a dummy variable for ex-communist. A short description of the rationale for each control variable is presented below.

Initial Income Level: An economy naturally grows faster from a low-income level than from an already high-income level according to the convergence hypothesis in economic growth theory. There are major sources of inefficiency in developing economies, whereas these sources of economic growth are mostly exhausted in high-income countries. A less developed economy, just by adopting production processes from more developed economies, may obtain a high degree of growth.

Average Educational Levels: In the New Economic Growth theory (Lucas 1988; Romer 1990), the capital term from classical growth models is broadened to include human capital. Human capital is introduced as the main source of the productivity increases that drive economic growth. The theory holds that the law of diminishing returns does not apply to human capital, and that there are increasing returns to investment in education.

Legal Structure and Property Rights: Recognition of these factors is one of the main contributions of New Institutional Economics. The theory holds that a good legal structure should ensure that contracts are efficiently enforced, corruption is prosecuted, and property rights are secure. Such high-level formal institutional structures greatly facilitate invention and innovation, and improve the likelihood of productive undertakings in the economy.

Free Trade: Trade enlarges the market and allows specialization and increased division of labor. Tariffs on trade are also a source of corruption and deadweight loss to the economy. After the mercantilist period, Adam Smith and David Ricardo where among the first theorists who advanced the virtues of free trade. Nonetheless, Smith also identified some advantages to trade barriers, particularly in the short-run, and Asian countries have successfully promoted policies of managed trade relative to free trade.

Size of Government: Government activity in the economy is thought to have a negative effect on economic growth when this activity reaches a certain magnitude. For many tasks, bureaucracy as an organizational form is less efficient than private firms, the market, non-profits or hybrid organizational forms. This is due to the lower-powered incentive structure as well as, red tape, hierarchical authority, and similar attributes that repress individual creativity, innovation and general responsiveness to changing demand. In the very long run, a government that crowds out informal arrangements earlier provided by families, churches, or non-profits, can also destroys communal bonds and lead to associative relationships that are much weaker and that hurts social cohesion. On the other hand, potential problems could also arise with a too-limited government. Bureaucracies provide many important functions in the economy like enforcing property rights and the rule of law, facilitating competition, and replacing missing markets. Based on the discussion in the previous section, the exact balance of

too much and too little bureaucracy could depend on cultural factors, the maturity of the economy and so on.

Political System: Some theorists assert that democracy naturally enlarges the middle class and that this is beneficial for economic prosperity. A dummy variable is supplied to control for democratic and totalitarian regimes. A polity IV variable measuring the constraint on the executive branch is used as well to provide a more accurate measure.

Ex-Communist: Twenty-two of the countries in the sample were under communist rule during the first 20 years of the time-period investigated (1969-1989). Communism may have had a negative impact on economic growth under totalitarian rule, but also a negative effect because of transitory costs adapting the economy to new institutions and policies. Based on the first section in Essay One, the lack of freedom under Communism might also have reduced creativity, invention, and innovation, and resulted in increased depression, leading to lower productivity levels.

Geography: Longitude from the equator is used as a measure of Geography. Some scholars advocate the view that geographical location, in particular in the tropics, has negative influence on economic growth. Gwartney and Lawson (2009) used three measures of geography and found that length of distance to the coastline and to major trading centers had no impact on economic growth. However, they found distance from equator to be positively, but insignificantly, correlated to growth. It is expected that this positive correlation will be eliminated with the inclusion of cultural variables.

4.6.3 Sensitivity Analysis

A sensitivity analysis using a variant of Leamer's Extreme Bounds Analysis (EBA) is executed to validate the findings in this section. The following procedure has been suggested by Levine and Renelt (1992). The traditional endogenous growth model (originated with Solow 1958) is of the form $Y_i = \beta I_{i,0} + \Pi X_i + \varepsilon_{i,}$ Where Y is the growth rate of output per capita for a country. I is a set of economic variables measured at the beginning of the time period for country i (initial levels of wealth and investment in human capital). X is a set of other variables including a constant, physical capital investment rates, and other variables. Variables from the two achievement components and the generalized morality component are added. Since this is an Extreme Bounds Analysis, the equation is changed to the form $Y_i = \beta_i I + \beta_m M_i + \beta_z Z\mu$.

Y is per capita GDP growth rates, I is the set of variables always included in the regression. These are Ex-communist, totalitarian, legal system and property rights. M is the variable of interest. Z is a subset of variables chosen from a pool of all variables identified in the literature as important to growth. In addition, Z contains the cultural variables designed in this analysis. By varying the sub-set of Z-variables included in the regression, a wider range of coefficient estimates on the M-variable can be found. An M-variable is first chosen and run in a base regression that includes only the M and the I-variables.

Next, regression results for all possible linear combinations of up to four z-variables is computed with the purpose of identifying an upper and lower bound for the coefficient. The extreme upper bound is defined by the group of Z-variables that produce the maximum value of $\beta_{m,}$ plus two standard deviations. If β_m remains significant, and of the right sign at the extreme bounds, then there is evidence for a

correlation (partial). Because the number of z-variables entering the model each time is limited, this procedure does not have serious issues related to multicollinearity and increased standard errors. In addition to the traditional I-variables, level of secondary education (1960) is added. Economic Z-variables include the size of government as percentage of GDP, the Level of Trade, and the other variables in the model. The next section addresses the issue of causational direction.

4.6.4 The Causational Direction

Most cultural factors change slowly. See Roland (2005) and Bisin and Verdier (2000) for a more in-depth discussion. However, there are components of culture that change faster. Manski (2000), attempted to separate between fast and slow-moving component of culture. In general it seems that certain beliefs can be updated more quickly based on feedback from economic and political outcomes, while values like thrift and obedience and similar appear to more ingrained in the population taking centuries to change. The estimation of a two stage least square with use of a suitable instrumental variable is an appropriate step to validate the causal direction in a model. Tabellini (2007) performed such an analysis, and provided evidence that the causational direction, at least in the short and medium term, is from culture to economic growth. He used language as an instrumental variable. "Language is correlated with the random evolution of ideas in the past (culture), but does not have a direct effect on current institutional outcome (2007:18)." And, according to Licht et al. (2006), "Deep grammatical rules are associated with specific conceptions of a person. For example languages that forbid dropping the first person pronoun are typical of cultural traditions with an emphasis on the individual and his rights" (Tabellini 2007:21).

Tabellini used several other grammatical rules to determine the degree to which a culture can be categorized as ruled by generalized or limited morality. He used primary education and urbanization rates in 1850, to control for the strength of policy and formal institutional structure in the past and ensuring that he was measuring culture and not formal institutions. Language as an instrumental variable, therefore, solves the problem of reverse causation. This is also discussed by Guiso (2006). Similar empirical evidence that culture changes slowly is brought forward from the study of immigrants in their new locations. Tabbellini (2005) concluded that third generation immigrants in the United States kept the same cultural attributes despite living in a different environment. Another piece of evidence of the causational direction between culture and economic growth comes from Hofstede's work. *The Chinese Cultural Connection* (Bond 1987), discovered a very particular Chinese cultural trait called Confucian Work Dynamism. This was named by Hofstede (2001) as a fifth cultural dimension and renamed Long-term Short-term Orientation. This cultural trait could not have been a result of economic growth because it had existed for centuries.

4.7 Results

The full model is statistically significant in the sample of low and middle-income countries and explains approximately 72 percent of the variance in economic growth from 1969-2008 (leaving approximately 28 percent unexplained). Table 10 shows results for low and middle-income countries. The point estimates for all the hypotheses are in the predicted direction and sub-hypotheses 1a, 1b, as well as 2 and 3a, are all statistically significant.

Table 10: Regression Results

	Point Estimate	Standard Error[1]	t- value	P >|t|
Entrepreneurial values	3.92	1.460	2.68	0.011**
Thrift	3.74	2.066	1.81	0.079*
Weber's Spirit of Capitalism	1.86	0.005	2.30	0.028**
Honesty	1.9	0.007	2.50	0.018**
Trust in People	.79	0.015	0.24	0.812
Trust in Institutions	1.23	0.033	1.35	0.187
Unselfishness	2.8	0.010	1.11	0.275
Ex-communist	-2.383	1.153	2.06	0.004***
Totalitarian	2.202	1.991	1.11	0.276
Geography	-0.023	0.264	-0.08	1.371
Initial GDP (1969)	-0.001	0.000	-2.87	0.007**
Education	0.454	0.166	2.72	0.010**
Legal Structure and Property Rights	1.104	0.535	2.07	0.036**
Free Trade	-1.013	0.637	-1.59	0.121
Size of Government	-.2132	0.303	-.70	0.486

Independence, tested in Hypothesis 1a was significant at a p-level of .05. The achievement variable Thrift in Hypothesis 1b was significant at the .1 p-level. Hypothesis 2, testing Weber's Spirit of Capitalism, is supported at the .05 p-level. Hypothesis 3a, Honesty, is supported at a p-level of .05. To test Hypothesis 3b, the joint hypothesis for the two variables of interest, Trust in Institutions and Trust in People is tested, resulting in an F statistic of 1.58 which is not significant, thereby failing to support hypothesis 3b. Hypothesis 3c, Unselfishness, also failed significance at the conventional level. A test of Hypothesis 3 taken as a whole (3a, 3b, and 3c) supports Hypothesis 3 with an F-stat of 5.58. (May have to use Chi-square, because of low sample size). Hypothesis 4 is supported, but only tested for high-income countries. The control variable of Ex-communist is significant at three standard deviations while the control variables of Initial GDP, Education level and Legal Structure/Property Rights are significant at two standard deviations.

4.8 Discussion of Findings

The regression output in Table 9 illustrates that four of the six hypotheses are supported. The most prominent finding is that all hypotheses related to the achievement motivation are corroborated. This concept proved significant in all the models (full model, forward stepwise, backward stepwise and extreme bounds analysis). Provided these do not represent spurious relationships unaccounted for, the model, within the usual statistical limitations, serves to add to the evidence that the values, Independence and Thrift, are positive values for economic growth. The entrepreneurial values of independence in the first hypothesis were found to be a factor that consisted of a high score on the variable teaching children independence, a low score on teaching children obedience, and a low score on the propensity to unquestionably respect authority among the population.

For Hypothesis 2, the existential underlying principle of the achievement motivation, the results of the factor analysis provide evidence for three types of beliefs that support economic growth. The first is that in countries where the population on average believes more strongly that they have completely free choice and control over their lives, as opposed to feeling their actions have no real effect, there is higher economic growth. Second, in countries where people on average believe more strongly that the economy is not a zero-sum game, the economy grows faster as well. Similarly, the last component of the factor provides evidence that where the number of people that believe quality, productivity, and efficiency should be rewarded is higher, there is more economic growth.

This result suggests that motivation for human action provided by intrinsic beliefs is a driver of economic growth. The corroboration of the second hypothesis

should not be surprising. Research in psychology, like Maslow's theory of motivation (1954), and modern medicine through neuroscience, provides evidence that believing in a certain outcome increases the likelihood of this outcome. One way this work is simply that people that believe that their actions make a difference will exert more effort in undertaking this action. The combined effect of the variables in this factor is, therefore, part of the foundation that allows entrepreneurial values to evolve.

When it comes to the third hypothesis on generalized morality (social capital), the results are mixed. The sub-hypothesis on honesty is supported as one of the strongest relationships in the model. Honesty is a factor of four variables measuring norms of good conduct. Based on the assumptions in the model, in countries where people are more honest, economic growth is higher and this result is significant in every model. Honesty has a relatively high correlation with trust in hypothesis 3b and 3c. This is to be expected based on the theory stating that honesty creates trust.

Trust is the second variable and it is measures generalized morality indirectly. Trust contributes positively to economic growth in the model, but not significantly at the 95 percent confidence level interval. The hypothesis on the value of Unselfishness also failed to support as significant, but always had the expected plus sign. However, most importantly, the three sub-hypotheses of generalized morality that tested in combination did prove significant. Combined, these two measures of Weber's achievement syndrome and Banfield and Platteau's generalized morality suggest that culture exerts a substantial influence on economic prosperity.

When it comes to the control variables, apart from the dummy-variable Ex-communist, formal institutional structure, represented by strength of property rights and the quality of the legal system, appears to be the strongest variable and is always

significant. The significance of this variable to economic prosperity corroborates with the major thesis of New Institutional Economics (North 1970, Williamson 1998, De Soto 2000, among others). However, it is important to note that the variable of Property Rights and Rule of Law, measures the strength of informal institutions as well as the formal institutions because laws can be seen as a body of norms that historically are transformed from an undifferentiated system to a formal, legalized procedure (Weber 1922).

The efficiency of formal institutions often reflects the underlying quality of norms, traditions, conventions, and codes of conduct, which again is an outcome of beliefs and values in the society. This comprehension about formal institutions is one of the assertions in of the first section of this essay. Coyne and Sobel (forthcoming) supported this relationship. In a Panel-Data set of 215 countries from 1970-2005 they found that legal structure and property rights are stationary and that reform in these areas is non-permanent and reverts to the mean. Stationary features are a characteristic of variables rooted in informal institutions and a society's cultural endowment (Platteau 2000). When there is an attempt to change stationary institutions this attempt fails unless there is a radical change in the whole institutional set-up and this change is supported by the informal institutions.

Although not significant, perhaps the most surprising finding is the negative effect of free-trade on economic growth. This goes against the grain of established economic theory. However, there may be some good explanations for this conundrum. Legal structure and property rights are highly correlated with free trade (.65). If legal structure and property rights are taken out of the model, free trade changes its sign to weekly positive. One explanation may be that many countries that have implemented free-trade policies on suggestions from the IMF or the World Bank have poor

institutional structures leading to little evidence of increased specialization and market size from liberalized trade policies, while the fastest growing countries in Asia rely largely on managed trade. This situation may distort any real positive impact of free-trade. A better procedure to test trade-policies may be possible through an Event-History model or similar statistical tool. Another interesting finding is that there is a high correlation between trust and the spirit of capitalism in the WVS. This is another indication that both individualist and collectivist values are important to economic growth.

4.9 Conclusion

This essay has identified and supported three major trajectories in which culture affects economic prosperity:

1. Through the level of achievement motivation revealed through the attitude towards consumption, work, and individual autonomy.
2. Through the belief in certain moral and philosophical ideas that support the achievement-motivated values identified in the first trajectory.
3. Through the belief and adherence of moral behavior outside the boundaries of the family or kinship, that creates honesty and extends altruistic behavior, crucial in developing a more impersonal system of social trust.

Regarding the first and second trajectory, the theoretical arguments in this essay focused on the religious underpinnings for the achievement motivation and the spirit of capitalism found in the Protestant work ethic, in Judaism, as well as in Japan through the Buddhist and Shinto teachings of Ishido Baigan and Suzuki Shosan. Examining the third trajectory, Tocqueville and Weber pointed out that sectarian Protestantism encouraged commerce by promoting networks of trust among the members. Fukuyama

(2001:3133) posited that "…early Protestantism enjoined its members to behave morally not just towards fellow believers, as was the case with many other religions, but towards all human beings."

Protestantism also emphasized a rigorous honesty. This was true for Imperial Japan as well. "This kind of moral universalism, combined with the Protestant propensity for sectarian denominations to organize themselves congregationally (i.e., from the bottom up) rather than hierarchically, meant that business could be transacted across a much broader range of people than in other cultural systems" (Fukuyama 2001:3133). Chapter Four, therefore, concludes that the different impact of cultural values on networks of social relations decides the level of social capital in a society.

In the Business Management literature, and among any businessman, it is readily accepted that the achievement motivation is beneficial in the productive stage of the economic cycle, while trust is required in the exchange stage (Marini 2004). Still, even scholars that accept culture's significance do not combine the two factors. Scholars usually support one school or the other according to Marini (2004). Putnam (1993), for example, does not discuss individual virtues in his research. The research in this Chapter provides evidence that both traits are needed in a productive economy. These findings should have strong implications for the academic field of economic development as well as for recommendations about domestic and international policies. Some of these implications will be discussed in Chapter Five

CONCLUSION

The two essays in this dissertation have contributed to the literature of prosperity and economic growth. The study has found support for the proposition that life satisfaction (Global Well-Being) and happiness (Hedonic Well-Being) are different concepts and should be researched as such. Subject to the limitations of the statistical analysis in the first essay, on average across countries, about half of the variance in a person's life-satisfaction can be explained by elements other than genetics, socialization, and outlook on life. Approximately 36 percent of the variation in life satisfaction was found to originate from changes in freedom, income, health, stability, religious beliefs, family life, community life, and education. Section 1.4.1 illustrated that another 10–15 percent may be explained by cultural factors.

On an individual level, the findings provide evidence that it is possible to be satisfied with life even with little income, poor health, and the existence of other negative scenarios. Although the seven outside factors identified in the first essay influence well-being, the large unexplained portions suggest that attitude is very important to a person's happiness and life satisfaction.

Based on the findings, there appear to be opportunities for governments to design policies that improve income, health, stability, and the other factors identified as important to people's life satisfaction. On a policy level, the findings therefore may help governments better define policy making criteria. However, governments must balance these goals with individual freedom in the political, civil, religious, and economic

sphere. Freedoms, and a feeling of control over one's life, were found to be the most important feature of life satisfaction.

The first essay also identified a significant, but relatively small, influence from culture on the magnitude of the influence that various independent variables has to life satisfaction. However, the strong cultural influence on the level of prosperity in a country was a more striking finding. Consequently, the findings in the first essay led to an in-depth study of the cultural contribution to economic prosperity in the second essay. Theoretically, the choice of focusing on economic prosperity was made in accordance with Modernization theory, which hypothesizes that increased income greatly impacts the other factors of prosperity. Practically, the choice was made to narrow the scope and increase the feasibility of sufficiently answering the research question with limited space.

Essay Two revealed that long-term economic prosperity presupposes several key elements, some not well covered in the literature on economic prosperity. The importance of high quality formal institutions to economic prosperity is a main thesis of the school of New Institutional Economics. This research has supported this theory. The most important institutional findings are related to the strength and quality of the rule of law and the security of property rights. These structural factors create stability and predictability in the economy, which is an important condition for investment. Good institutions are critical in reducing transaction costs and promoting economic efficiency. Previous evidence to the importance of property rights and the rule of law has come from the theoretical developments in Douglas North's (1970–2005) scholarship and from qualitative studies by Hernando De Soto (2002), among others. Their findings, which are supported in this study, are starting to gain credit in wider economic circles.

A second major element in explaining economic prosperity, one that has yet to gain traction in mainstream studies of economic prosperity, is cultural attributes. Cultural attributes and their importance to informal institutional quality are found to be the overall strongest predictor of long-term economic growth in this dissertation. In mainstream economics, culture is applied only when other explanations fail. As discussed in the first section of this essay, this is due largely to the simplifying assumption that human beings are purely "utility-maximizing individuals, and that such maximizing behavior is largely invariant across different human societies" (Fukuyama 2001: 3130).

However, hardly any cultures are based purely on instrumental utility maximizing behavior. In many cultures, the process toward the goal is more important than the outcome. Landes (1998) illustrated this with an example from cotton picking in India. He explained how farmers refused more effective methods because they found religious value in the monotonic processes involved in the production. Even religious denominations such as Calvinism and Puritanism, which Weber held capitalism to have originated, valued work and productivity primarily for its intrinsic value and not for the primary purpose of personal consumption. As Weber maintained, capitalism and economic growth were byproducts of the culture.

Consequently, this dissertation has reached a conclusion similar to the finding by Daniel Moynihan (1965) that poverty was the result not just of structural problems in the economy, "… but of dysfunctional social behaviors that had taken on a life of their own among the 'underclass'" (Fukuyama 2001:3128). Moynihan presented evidence of Weber's thesis on the ills of conspicuous consumption versus the virtue of frugality and reinvestment. The results of the empirical analysis in the second essay of this dissertation also can explain findings by a World Bank longitudinal analysis of national

differences in savings rates (Hamilton and Clemens 1999). This study found clear regional and national differences. The World Bank did not address culture as a reason even if the correlation with the valuation of teaching children thrift and similar cultural attributes are very high (Guiso 2006).

"Authors including Everett E. Hagen, W. Arthur Lewis, and David C. McClelland all argued in different ways that certain less-developed societies lacked cultural characteristics (such as McClelland's achievement-orientation) that constituted obstacles to development" (Fukuyama 2001:3131). The lack of a social system of generalized morality is the other confounding cultural factor in the lack of economic development. The theory of generalized morality maintains that empathy and consideration for strangers operates as glue that binds society together. It reduces the number of conflicts and increases stability and security, another important component of prosperity. The concern for the well-being of people outside the kin or tribe allows outcomes closer to the social optimum to be reached in many occasions, even without bureaucratic intervention. This follows because honesty reduces opportunism and encourages trust. Consequently, the reduced transaction costs enlarge the size of the market and allow higher occupational specialization. This dissertation has found support for the theory of generalized morality.

The study of cultural impact on economic growth in this dissertation has contributed evidence supporting and adding to the conclusions of previous studies. In addition to qualitative work in the vein of Banfield (1958) and Elinor Ostrom (1990), at least three similar types of quantitative studies appear in the literature. These include Granato et al (1996), Marini (2004), and Minkov and Blagoev (2009).

This dissertation has improved on these studies by 1) deepening the cultural analysis from 2–6 variables to a set of more than 20 independent variables; 2) enlarging the data set from 25 to 72 countries; and 3) increasing the time period measured from 29 to 38 years. Marini and Granato et al's studies included only five non-OECD countries. Their studies, therefore, have little to say about how culture influences the economy in low and middle-income countries. Only two countries each from Africa and South America were included in their respective analyses. The analysis in this dissertation included 55 low and middle-income countries. The inclusion of so many low and middle-income countries has resulted in an outcome in which cultural impact is even more substantial than in Marini and Granato et al's findings. The achievement orientation was more important at low and middle-income levels than at high income levels. Marini and Granato et al's study did not capture this effect, not only for their lack of observations, but because they did not include any variables related to the measurement of corruption or honest behavior.

This study finds the achievement orientation to be 2.5 times as important as human capital (education) in determining economic growth. This finding is significant because human capital is upheld as the main driver of economic growth in the New Economic Growth Models (Lucas 1988, Romer 1990). Generalized morality is 1.8 times as strong a factor as human capital.

The comparative strength of social capital (generalized morality) relative to the achievement orientation in this dissertation also is notable. Fukuyama (1995) suggested 20 percent weight of social capital. Marini (2004) found 12 percent for social capital and 88 percent for the "achievement orientation" by comparing the partial R^2. Performing the same method here, this dissertation finds a much stronger effect of social capital. The partial R^2 is valued at 43 percent importance of generalized morality and 57 percent

for the achievement orientation. This result indicates that building a society of honesty and trust is more important to economic growth than previously thought. The analysis also suggests that Putnam's (1993) conclusion that social networking is responsible for economic growth may be a result of spurious causation. This dissertation suggests that it is beliefs and values that determine the amount of networking in a society and consequently economic growth [similar to Tocqueville (1848)].

The additional cultural variables have increased the complexity of the model relative to the New Growth models, but also have increased the validity of the model. This trade-off is necessary in order to describe the rich concepts (like achievement orientation and generalized morality) that the model investigates.

The theoretical discussion in section one of the second essay revealed that culture affects economic growth through its influence on the degree to which formal institutional structures become rules in use. A rule in use is obeyed by the population and enforced by contract enforcement institutions like the courts and the police. Because culture is an important component in deciding the rules in use, culture affects the ability of societies to construct and properly manage institutions. This is evidenced empirically through the fall of communism. After the regime change in the former communist sphere in 1989–1990, the countries with cultural foundations best suited for the new formal institutions experienced the least problematic transformation, according to Estrin and Mickiewicz (2010) and Tridico (2006).

Estrin and Mickiewicz (2010) evaluated the strength of informal institutions in the respective countries. Tridico (2006) did a within-country study of Poland and observed that the economic performance of regions in Poland where informal institutions were of lower quality performed worse than regions of Poland where the

quality of informal institutions were of a higher quality. The most impressive transitional economies were countries such as Hungary, Poland, and the former Czechoslovakia, according to De Broek and Koen (2000) and Lenain (2000). Comparing GDP growth and political and economic stability, these assessments largely hold true ten years later.

Another example of the importance of culture to institutions and the effects of policy making can be gathered from a study of the economic growth of the "Asian tigers," including Japan, Taiwan, South Korea, and Hong Kong. These countries utilized a form of "State Capitalism" whereby the governments instituted industrial policies that allocated credit to national industries in an attempt to encourage economic growth. The ability to build East Asian-style economic planning bureaucracies depends greatly on cultural factors because such institutions are especially vulnerable to rent-seeking and capture by narrow societal groups (Fukuyama 2001:3133).

State Capitalism under this premise may be difficult to implement in African tribal societies because industrial policies in planning bureaucracies have to be shielded from excessive political influences and corruption in order to work. The formal institutional and governance arrangements imposed on many African nations during the 1980s and 1990s often were unsuccessful according to Easterly (2002). This dissertation has provided evidence that one reason for these failures is that the underlying values, beliefs, and informal institutions followed by the majority of the population in these countries do not support the incentive structure provided by the formal institutions and are not directed toward sustained economic progress. For these reasons, a change in formal governmental structures and policies had limited positive effect. The cultural beliefs and values do not stimulate individuals to take advantage of

opportunities and incentive structures created by free-market policies to the same degree as in Europe, North America, and the Confucian nations.

Human action in these high-context cultures (see section 4.5) is more influenced by "*logic of appropriateness*" relative to the "*logic of consequence*." Collectivist cultures follow norms to a stronger degree, and the incentive structures of the capitalist economic system are only slowly effectual at best, also because collectivists are obligated to their in-group and willing to sacrificing self-interest for the collective (Singelis 1995). The current informal institutional environment in many developing countries is not very susceptible to economic progress since it so strongly favors communal bonds over associative bonds. Consequently, when institutions are endogenous, as this dissertation provides evidence for, one cannot impose either governance structures or institutions on a society and expect the outcome to be similar across nations.

On the other hand, 18th–20th century American society was characterized by decentralized market capitalism. In *Democracy in America,* Tocqueville noted that the American propensity for civil association was a source of the success of American democracy since it permitted the society to organize itself in a decentralized manner. This propensity was a natural outgrowth of the dominant Anglo-Saxon culture that is of an individualistic and low-context form. Strong individualism, as well as egalitarianism, may prevent state capitalism from succeeding in Western Europe and North America.

A main outcome of the discussion in this conclusion is the assertion that no formal institutional "blueprint" exists that can be implemented successfully everywhere and guarantee the same high-quality results, since values and beliefs influence human

action differently. This is particularly true in the short run. Economic prosperity has been achieved with many different versions of the free enterprise system in the U.S., Europe, and Asia. The policy implication for economic development that can be taken from this dissertation is that instead of a sole focus on policy content, there must be more work toward the understanding of beneficial value and belief systems in academic research, and implementation of virtues in economic development. Consequently, gradualism (Parsons 1957) has to be promoted and expected. Resource-oriented ideas like the "Big Push" (Sachs 2005), and initiatives founded primarily on economic policy issues in economic development, will largely remain unsuccessful.

Another main outcome of this research is added evidence that suggests four more stylized facts may be added to the five suggested in the New Economic Growth literature (Easterly 2001). Stylized Fact 6: A higher standard of the rule of law increases the potential for economic growth. Stylized Fact 7: Protection of property rights increases economic growth. Stylized Fact 8: Within geographical boundaries where values and beliefs support an achievement orientation, productivity and investment increases leading to increased economic prosperity. Stylized Fact 9: Within geographical boundaries where values and beliefs support generalized morality, economic prosperity increases. This happens because the market is enlarged from the higher number of potential trading partners, thus allowing greater specialization.

Finally, based on the research discussed and the findings in this dissertation, it may be considered peculiar that recognition of the cultural factor has not sifted through to Economics. However, Marini (2004:767) says that "the broadness of the issue, its [perceived] immaterial content, and the multidimensionality of the analysis make cultural studies difficult." There are at least two additional reasons. Economics has a sole focus on instrumental rationality and often operates with very basic utility

functions to comply with mathematical formality, and cultural variables do not fit into this framework. Economics also operates in a softer research environment than business research. Business models are tested in real-life scenarios and have a direct effect on the bottom line of many companies. Economic research, like most social science, often is shielded in academic circles, is not directly testable, and leaves more room for opinion.

Although scholars see culture as difficult to measure, there is high inter-correlation between cultural studies, providing evidence that there are good and precise measures available, according to Minkov and Blagoev (2009). The cultural measures used to reach the conclusions in this dissertation therefore may be considered relatively accurate. Consequently, the results of this analysis, together with the conclusions of other discussed works, suggest a need for a reorientation of the study of human prosperity and economic development toward informal institutions and cultural factors.

APPENDIX 1: COUNTRY RANK FOR THE PROSPERITY INDEX

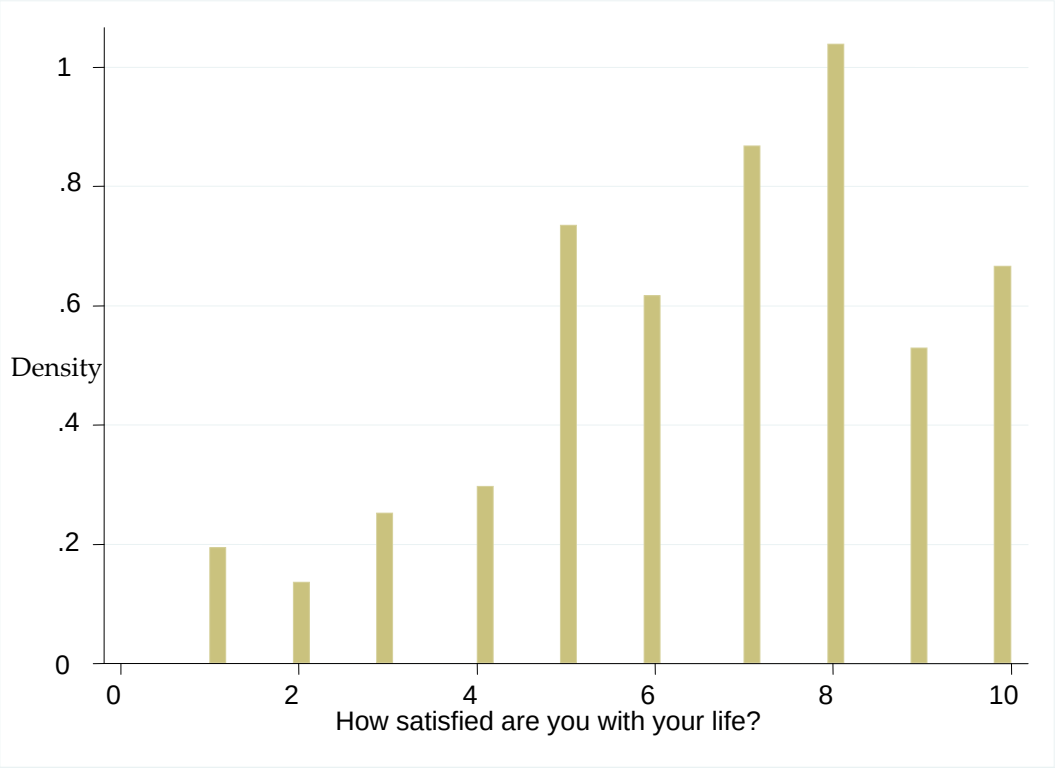
Rank	Score	Country	Rank	Score	Country
1	0.897	Luxembourg	99	0.496	Papua New Guinea
2	0.820	Ireland	100	0.494	Viet Nam
3	0.805	United States	101	0.490	Gabon
4	0.803	Canada	102	0.488	Azerbaijan
5	0.792	Switzerland	103	0.487	Lesotho
6	0.791	Singapore	104	0.486	Kenya
7	0.783	Iceland	105	0.478	Mauritania
8	0.777	Austria	106	0.473	Tanzania (United Republic of)
9	0.775	Hong Kong, China	107	0.471	Monaco
10	0.766	Italy	108	0.467	China
11	0.765	Netherlands	109	0.466	Cuba
12	0.764	Australia	110	0.455	Haiti
13	0.764	United Kingdom	111	0.440	Uganda
14	0.761	Finland	112	0.434	Pakistan
15	0.761	Denmark	113	0.433	Mozambique
16	0.760	Kuwait	114	0.431	Burkina Faso
17	0.760	U. Arab Emirates	115	0.430	Zambia
18	0.757	Greece	116	0.430	Togo
19	0.752	Spain	117	0.429	Côte d'Ivoire
20	0.748	Germany	118	0.426	Nepal
21	0.746	Sweden	119	0.416	Niger
22	0.744	New Zealand	120	0.411	Libyan Arab Jamahiriya
23	0.743	Chile	121	0.410	Nigeria
24	0.737	Japan	122	0.406	Madagascar
25	0.736	France	123	0.403	Sierra Leone
26	0.734	Belgium	124	0.394	Congo
27	0.732	Malta	125	0.389	Guinea-Bissau
28	0.721	Norway	126	0.388	Cameroon
29	0.720	Portugal	127	0.385	Ethiopia

30	0.716	Poland
31	0.711	Slovenia
32	0.711	Slovakia
33	0.707	Trinidad and Tobago
34	0.703	Bahrain
35	0.697	Taiwan
36	0.695	Mauritius
37	0.694	Hungary
38	0.688	Costa Rica
39	0.686	Lithuania
40	0.683	Mexico
41	0.682	Estonia
42	0.682	Israel
43	0.679	Latvia
44	0.676	Czech Republic
45	0.675	Cyprus
46	0.674	Uruguay
47	0.665	El Salvador
48	0.661	Argentina
49	0.653	Brazil
50	0.652	Romania
51	0.646	Panama
52	0.641	Dominican Republic
53	0.632	Bulgaria
54	0.626	Korea (Republic of)
55	0.624	Albania
56	0.614	Turkey
57	0.611	Macedonia (TFYR)
58	0.610	Serbia
59	0.609	Jamaica
60	0.608	Malaysia
61	0.605	Oman
128	0.374	Burundi
129	0.369	Central African Republic
130	0.358	Malawi
131	0.354	Equatorial Guinea
132	0.348	Rwanda
133	0.347	Chad
134	0.342	Congo (Democratic Republic)
135	0.320	Cambodia
136	0.288	Zimbabwe
137	0.280	Myanmar
	0.267	Maldives
	Missing	Afghanistan
	Missing!	Algeria
	Missing!	Andorra
	Missing	Angola
	Missing	Antigua and Barbuda
	Missing	Bahamas
	Missing	Bangladesh
	Missing	Barbados
	Missing	Belarus
	Missing	Belize
	Missing	Benin
	Missing	Bhutan
	Missing	Bolivia
	Missing	Brunei Darussalam
	Missing	Cape Verde
	Missing	Comoros
	Missing	Djibouti
	Missing	Dominica
	Missing	Eritrea
	Missing	Gambia
	Missing	Grenada

62	0.603	Mongolia	Missing	Guinea
63	0.603	Croatia	Missing	Iraq
64	0.596	Jordan	Missing	Kiribati
65	0.594	Ecuador	Missing	Korea (Democratic People's Rep)
66	0.593	South Africa	Missing	Kyrgyzstan
67	0.586	Colombia	Missing	Lao People's Democratic Rep.
68	0.585	Botswana	Missing	Lebanon
69	0.585	Guatemala	Missing	Liberia
70	0.585	Indonesia	Missing	Liechtenstein
71	0.583	Peru	Missing	Marshall Islands
72	0.581	Georgia	Missing	Micronesia
73	0.581	Bosnia and Herzegovina	Missing	Nauru
74	0.580	Montenegro	Missing	Occupied Palestinian Territories
75	0.572	Thailand	Missing	Palau
76	0.570	Nicaragua	Missing	Qatar
77	0.560	Honduras	Missing	Saint Kitts and Nevis
78	0.559	Armenia	Missing	Saint Lucia
79	0.556	Venezuela (Bolivarian Rep.)	Missing	Saint Vincent and the Grenadines
80	0.552	Ukraine	Missing	Samoa
81	0.551	Namibia	Missing	San Marino
82	0.548	Tunisia	Missing	Sao Tome and Principe
83	0.546	Philippines	Missing	Saudi Arabia
84	0.539	Paraguay	Missing	Seychelles
85	0.538	Fiji	Missing	Solomon Islands
86	0.537	Sri Lanka	Missing	Somalia
87	0.536	Ghana	Missing	Sudan
88	0.534	Guyana	Missing	Suriname
89	0.534	Kazakhstan	Missing	Swaziland
90	0.532	Morocco	Missing	Tajikistan
91	0.524	Egypt	Missing	Timor-Leste
92	0.520	Moldova	Missing	Tonga
93	0.516	Iran (Islamic Republic of)	Missing	Turkmenistan

94	0.515	Senegal	Missing	Tuvalu
95	0.507	Mali	Missing	Uzbekistan
96	0.507	India	Missing	Vanuatu
97	0.498	Syrian Arab Republic	Missing	Yemen
98	0.497	Russian Federation	Missing	Puerto Rico

APPENDIX 2: DISTRIBUTION OF LIFE-SATISFACTION SCORES



Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
v22	75381	0.98554	11.845	0.001	0.49966

The Histogram indicates non-normality of the dependent variable v22. However, a statistical test using the Shapiro-Francia measure failed to exclude the possibility of normality.

APPENDIX 3: COUNTRY REGRESSIONS

Explanation for the variable abbreviations in the table:
Life Satisfaction = life_satis~n,
Health = Health,
Freedom and Control = control,
Married = married,
Education = education,
Sex = sex,
Age = age,
Religion = factor_rel~n,
Income = factor_inc~e,
Political and Civil Liberties = factor_pol~s,
Interaction Education and Wealth int_educ_w~h,
Community life = factor_com~e

France

```
Linear regression                               Number of obs =     703
                                                F(  8,   694) =   46.39
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3485
                                                Root MSE      =  1.5485
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .7136663   .0858748     8.31   0.000     .5450607    .8822719
     control |   .3452018   .0328431    10.51   0.000     .2807179    .4096856
     married |   .8205581   .1507363     5.44   0.000     .5246042    1.116512
    children |   -.018548   .0522686    -0.35   0.723    -.1211715    .0840755
   education |   .1114217    .026429     4.22   0.000     .0595313    .1633121
         sex |   .1448027   .1211907     1.19   0.233    -.0931417    .3827471
         age |    .017495   .0042627     4.10   0.000     .0091258    .0258643
factor_com~e |   .0052169   .0644312     0.08   0.935    -.1212866    .1317204
       _cons |  -.5888459   .5518483    -1.07   0.286    -1.672338    .4946464
------------------------------------------------------------------------------
```

Britain

```
Linear regression                               Number of obs =     678
                                                F(  8,   669) =   29.71
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2990
                                                Root MSE      =  1.4015
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5403589   .0745638     7.25   0.000     .3939516    .6867661
     control |   .3086953   .0363387     8.49   0.000     .2373436     .380047
     married |   .5602486   .1272217     4.40   0.000     .3104467    .8100504
    children |   .0207573    .045133     0.46   0.646    -.0678621    .1093767
   education |   .0101048   .0295269     0.34   0.732    -.0478719    .0680814
         sex |   .3679592   .1076317     3.42   0.001     .1566226    .5792958
         age |   .0182168    .003624     5.03   0.000      .011101    .0253326
factor_com~e |  -.0222378   .0519036    -0.43   0.668    -.1241514    .0796758
```

```
       _cons |   1.225167   .4754251     2.58   0.010      .291662    2.158672
```

West Germany

```
Linear regression                               Number of obs =     504
                                                F( 12,   491) =   12.59
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2721
                                                Root MSE      =  1.5052
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6552028   .1114264     5.88   0.000     .4362715    .8741342
     control |    .103081   .0436665     2.36   0.019     .0172846    .1888773
     married |   .2912942   .2018386     1.44   0.150    -.1052798    .6878682
    children |   .0878826   .0730203     1.20   0.229    -.0555883    .2313534
   education |  -.0195086   .0488674    -0.40   0.690    -.1155237    .0765065
         sex |  -.1122414   .1501394    -0.75   0.455    -.4072364    .1827537
         age |   .0084903   .0052521     1.62   0.107    -.0018292    .0188097
factor_rel~n |   .1172117   .0769609     1.52   0.128    -.0340017    .2684251
factor_inc~e |   .9641765   .2115853     4.56   0.000     .5484521    1.379901
factor_pol~s |   .0816237   .1032971     0.79   0.430    -.1213353    .2845826
factor_com~e |  -.0051811   .1026457    -0.05   0.960    -.2068602     .196498
int_educ_w~h |  -.0758709   .0395154    -1.92   0.055     -.153511    .0017692
       _cons |   3.719778   .8080463     4.60   0.000     2.132123    5.307433
------------------------------------------------------------------------------
```

Italy

```
Linear regression                               Number of obs =     374
                                                F( 12,   361) =   13.68
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3583
                                                Root MSE      =  1.4768
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6134053   .1167263     5.26   0.000     .3838564    .8429542
     control |   .1772979   .0473571     3.74   0.000     .0841674    .2704285
     married |   .5956548   .2518282     2.37   0.019     .1004203    1.090889
    children |    .279789   .0962967     2.91   0.004      .090416    .4691619
   education |  -.1724101   .0503296    -3.43   0.001    -.2713861   -.0734341
         sex |  -.0397416   .1633777    -0.24   0.808    -.3610332      .28155
         age |  -.0056653    .007507    -0.75   0.451    -.0204283    .0090978
factor_rel~n |   .3996129   .0988993     4.04   0.000     .2051219     .594104
factor_inc~e |   .9885129   .2904145     3.40   0.001     .4173963     1.55963
factor_pol~s |   .1376021   .0850334     1.62   0.106     -.029621    .3048252
factor_com~e |   .1233444   .0869683     1.42   0.157    -.0476836    .2943725
int_educ_w~h |  -.0683677    .042219    -1.62   0.106    -.1513937    .0146583
       _cons |   3.781366   .9316718     4.06   0.000     1.949181    5.613552
```

Netherlands

```
Linear regression                               Number of obs =     615
                                                F(  8,   606) =   15.72
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2176
                                                Root MSE      =  1.2447
------------------------------------------------------------------------------
             |               Robust
```

```
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6177524   .0719768     8.58   0.000     .4763981    .7591067
     control |   .0780911   .0319791     2.44   0.015     .0152878    .1408944
     married |   .6555355   .1509983     4.34   0.000      .358992     .952079
    children |   .0532108   .0549671     0.97   0.333    -.0547384      .16116
   education |     .04477   .0281053     1.59   0.112    -.0104257    .0999656
         sex |   .1004316   .1093375     0.92   0.359    -.1142949     .315158
         age |   .0090861    .004204     2.16   0.031     .0008299    .0173422
factor_com~e |   .1008896   .0541537     1.86   0.063    -.0054622    .2072414
       _cons |   3.375639   .6131653     5.51   0.000     2.171452    4.579826
------------------------------------------------------------------------------
```

Spain

```
Linear regression                               Number of obs =     618
                                                F( 12,   605) =   18.90
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2904
                                                Root MSE      =  1.2403

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .4697658   .0923989     5.08   0.000     .2883043    .6512272
     control |   .1979165   .0340505     5.81   0.000      .131045    .2647881
     married |   .5193787   .1744906     2.98   0.003     .1766978    .8620596
    children |   .0372695   .0623122     0.60   0.550     -.085105     .159644
   education |   -.005092   .0351962    -0.14   0.885    -.0742135    .0640296
         sex |   .0015587   .1016112     0.02   0.988    -.1979949    .2011123
         age |  -.0089412    .004394    -2.03   0.042    -.0175705   -.0003118
factor_rel~n |   .0313677   .0537077     0.58   0.559    -.0741084    .1368438
factor_inc~e |   .2843737   .1928558     1.47   0.141    -.0943745    .6631218
factor_pol~s |   .0556578   .0603979     0.92   0.357    -.0629571    .1742728
factor_com~e |   .0198895   .0864219     0.23   0.818    -.1498338    .1896128
int_educ_w~h |   .0229883   .0458513     0.50   0.616    -.0670587    .1130353
       _cons |   4.112923   .6491236     6.34   0.000     2.838114    5.387732
------------------------------------------------------------------------------
```

USA

```
Linear regression                               Number of obs =    1038
                                                F( 11,  1026) =   42.53
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3276
                                                Root MSE      =  1.4489

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5842355   .0716593     8.15   0.000     .4436199    .7248511
     control |   .2195358    .034977     6.28   0.000     .1509012    .2881704
     married |   .0826273   .0935842     0.88   0.377    -.1010111    .2662657
   education |   -.022855   .0409886    -0.56   0.577    -.1032859     .057576
         sex |  -.0551709   .0923593    -0.60   0.550    -.2364056    .1260639
         age |    .001978   .0028725     0.69   0.491    -.0036587    .0076146
factor_rel~n |   .1339561   .0512144     2.62   0.009     .0334591    .2344531
factor_inc~e |   .6586856    .259234     2.54   0.011     .1499963    1.167375
factor_pol~s |   .1239099   .0472997     2.62   0.009     .0310946    .2167251
factor_com~e |   -.048908   .0432191    -1.13   0.258    -.1337158    .0358999
int_educ_w~h |  -.0238697   .0419636    -0.57   0.570     -.106214    .0584746
```

```
       _cons |   3.769532   .4286132     8.79   0.000     2.928474    4.610591
```

Japan

```
Linear regression                               Number of obs =     431
                                                F( 12,   418) =   27.43
                                                Prob > F      =  0.0000
                                                R-squared     =  0.4270
                                                Root MSE      =  1.2829

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5778464   .0820203     7.05   0.000     .4166228    .7390701
     control |   .2578773   .0473947     5.44   0.000     .1647157    .3510389
     married |   .3233702   .2437904     1.33   0.185    -.1558377     .802578
    children |  -.1205371   .0781138    -1.54   0.124     -.274082    .0330077
   education |  -.0787229   .0407635    -1.93   0.054      -.15885    .0014041
         sex |   .0959605   .1360563     0.71   0.481    -.1714793    .3634003
         age |   .0128688   .0049803     2.58   0.010     .0030792    .0226584
factor_rel~n |   .1390535   .0745621     1.86   0.063    -.0075099    .2856169
factor_inc~e |   1.059258   .2667833     3.97   0.000      .534854    1.583662
factor_pol~s |   .1719084   .0775603     2.22   0.027     .0194515    .3243652
factor_com~e |  -.1158119   .0946797    -1.22   0.222    -.3019197    .0702958
int_educ_w~h |  -.0619628   .0367144    -1.69   0.092    -.1341307    .0102051
       _cons |   3.600166   .7781161     4.63   0.000     2.070658    5.129674
------------------------------------------------------------------------------
```

Mexico

```
Linear regression                               Number of obs =    1002
                                                F( 10,   991) =   11.01
                                                Prob > F      =  0.0000
                                                R-squared     =  0.1543
                                                Root MSE      =  1.8937

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .4524869    .084802     5.34   0.000     .2860748     .618899
     control |   .3170754   .0499196     6.35   0.000     .2191151    .4150357
     married |   .2448828   .1639609     1.49   0.136    -.0768676    .5666332
    children |   .0618555   .0493876     1.25   0.211    -.0350609    .1587718
   education |    .001466   .0294909     0.05   0.960    -.0564058    .0593378
         sex |   .1372243   .1286033     1.07   0.286    -.1151417    .3895903
         age |  -.0014419   .0054397    -0.27   0.791    -.0121164    .0092327
factor_rel~n |   .2356414   .0999716     2.36   0.019     .0394611    .4318217
factor_pol~s |   .0176826   .0408326     0.43   0.665    -.0624458    .0978109
factor_com~e |   -.003974   .0603294    -0.07   0.947    -.1223621     .114414
       _cons |   3.444601   .6640413     5.19   0.000     2.141512    4.747689
------------------------------------------------------------------------------
factor_com~e |   -.003974   .0603294    -0.07   0.947    -.1223621     .114414
       _cons |   3.444601   .6640413     5.19   0.000     2.141512    4.747689
```

South Africa

```
Linear regression                               Number of obs =    1723
                                                F( 12,  1710) =   59.45
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3008
```

```
                                                      Root MSE      =  1.9395

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5446325   .0639144     8.52   0.000     .4192739     .669991
     control |   .2292152   .0274449     8.35   0.000     .1753861    .2830442
     married |   .0205854   .1065091     0.19   0.847    -.1883165    .2294874
    children |   .0006785   .0370651     0.02   0.985    -.0720191    .0733762
   education |  -.0753494    .024485    -3.08   0.002     -.123373   -.0273258
         sex |   .1280266   .1020116     1.26   0.210    -.0720541    .3281074
         age |   .0105094   .0037104     2.83   0.005      .003232    .0177868
factor_rel~n |   .1017538   .0883316     1.15   0.250    -.0714955    .2750031
factor_inc~e |   .8952825   .1165184     7.68   0.000     .6667488    1.123816
factor_pol~s |   .0541379    .033309     1.63   0.104    -.0111928    .1194687
factor_com~e |   .0123488     .03855     0.32   0.749    -.0632613     .087959
int_educ_w~h |  -.0300714    .019024    -1.58   0.114    -.0673842    .0072413
       _cons |   3.445445   .4511331     7.64   0.000     2.560614    4.330276
------------------------------------------------------------------------------
```

Australia

```
Linear regression                                     Number of obs =     796
                                                      F( 12,   783) =   28.71
                                                      Prob > F      =  0.0000
                                                      R-squared     =  0.3593
                                                      Root MSE      =  1.3995

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5522378   .0712134     7.75   0.000     .4124459    .6920296
     control |   .3501523   .0339868    10.30   0.000     .2834362    .4168684
     married |   .2403313   .1276152     1.88   0.060    -.0101772    .4908398
    children |  -.0450791   .0557433    -0.81   0.419    -.1545032     .064345
   education |  -.0195206   .0330537    -0.59   0.555     -.084405    .0453638
         sex |    .020248   .1025107     0.20   0.843    -.1809804    .2214764
         age |   .0125683   .0044523     2.82   0.005     .0038286    .0213081
factor_rel~n |   .1306971   .0470868     2.78   0.006     .0382657    .2231285
factor_inc~e |   .5194918    .211752     2.45   0.014     .1038229    .9351606
factor_pol~s |  -.0362799   .0659405    -0.55   0.582     -.165721    .0931611
factor_com~e |  -.0494963   .0620688    -0.80   0.425    -.1713372    .0723447
int_educ_w~h |  -.0417537     .02926    -1.43   0.154    -.0991911    .0156836
       _cons |   2.192714   .6317781     3.47   0.001     .9525343    3.432893
------------------------------------------------------------------------------
```

Sweden

```
Linear regression                                     Number of obs =     562
                                                      F( 12,   549) =   14.54
                                                      Prob > F      =  0.0000
                                                      R-squared     =  0.2967
                                                      Root MSE      =  1.2909

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6350218   .0907235     7.00   0.000     .4568142    .8132294
     control |    .201493   .0449737     4.48   0.000     .1131515    .2898346
     married |   .4134517   .1622719     2.55   0.011     .0947018    .7322015
    children |  -.0641479   .0720867    -0.89   0.374    -.2057474    .0774516
```

```
   education |   -.108386   .0410017    -2.64   0.008    -.1889254   -.0278466
         sex |   .1372786   .1145157     1.20   0.231    -.0876639    .3622212
         age |   .0136861   .0048898     2.80   0.005     .0040811    .0232911
factor_rel~n |   .0740145   .0584889     1.27   0.206    -.0408749    .1889039
factor_inc~e |   .3296981     .24378     1.35   0.177    -.1491576    .8085538
factor_pol~s |   .0407659    .091409     0.45   0.656    -.1387883    .2203201
factor_com~e |   .0450265   .0746807     0.60   0.547    -.1016683    .1917213
int_educ_w~h |  -.0087433   .0321069    -0.27   0.785    -.0718106    .0543241
       _cons |   3.448194   .7176468     4.80   0.000     2.038524    4.857864
------------------------------------------------------------------------------
```

Argentina

```
Linear regression                               Number of obs =     586
                                                F( 10,   575) =   14.97
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2105
                                                Root MSE      =  1.6772
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |    .485493   .1100906     4.41   0.000     .2692644    .7017217
     control |    .275298   .0447484     6.15   0.000     .1874077    .3631883
     married |   .2375854   .1805676     1.32   0.189    -.1170671    .5922378
    children |   .0097956      .0554     0.18   0.860    -.0990155    .1186068
   education |  -.0124636   .0370932    -0.34   0.737    -.0853182     .060391
         sex |  -.0172664   .1406754    -0.12   0.902    -.2935666    .2590338
         age |   .0032753   .0051194     0.64   0.523    -.0067796    .0133302
factor_rel~n |   .4254503   .0978288     4.35   0.000     .2333049    .6175956
factor_pol~s |   .0683895   .0623273     1.10   0.273    -.0540275    .1908065
factor_com~e |  -.0610078   .0928863    -0.66   0.512    -.2434457      .12143
       _cons |   3.609455   .7265882     4.97   0.000     2.182364    5.036545
------------------------------------------------------------------------------
```

Finland

```
Linear regression                               Number of obs =     564
                                                F( 12,   551) =    9.60
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2023
                                                Root MSE      =  1.5662
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .4377414   .0946488     4.62   0.000     .2518248    .6236579
     control |   .1954312   .0575151     3.40   0.001     .0824556    .3084068
     married |   .3081247    .176206     1.75   0.081    -.0379931    .6542425
    children |   .0329836   .0710524     0.46   0.643     -.106583    .1725503
   education |  -.0489444   .0462579    -1.06   0.290    -.1398079    .0419191
         sex |   .3235431   .1505791     2.15   0.032     .0277639    .6193224
         age |   .0022454   .0055982     0.40   0.689     -.008751    .0132418
factor_rel~n |   .0630389   .0899274     0.70   0.484    -.1136036    .2396814
factor_inc~e |   .5672672   .2466038     2.30   0.022     .0828686    1.051666
factor_pol~s |  -.0013122    .119793    -0.01   0.991     -.236619    .2339945
factor_com~e |  -.0661185   .0784007    -0.84   0.399    -.2201194    .0878824
int_educ_w~h |   -.028733   .0385209    -0.75   0.456    -.1043988    .0469328
       _cons |   4.219453   .8402073     5.02   0.000     2.569052    5.869854
```

South Korea

```
Linear regression                               Number of obs =     794
```

```
                                                F( 12,   781) =   40.47
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3657
                                                Root MSE      =  1.6397
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .2486281   .1216862     2.04   0.041     .0097574    .4874988
     control |   .2793958    .037297     7.49   0.000     .2061816    .3526099
     married |   .1786153    .279662     0.64   0.523    -.3703629    .7275934
    children |   .0026853   .0832216     0.03   0.974    -.1606791    .1660497
   education |  -.2572167   .0412629    -6.23   0.000     -.338216   -.1762174
         sex |  -.3150874   .1315812    -2.39   0.017     -.573382   -.0567928
         age |  -.0385118   .0081005    -4.75   0.000    -.0544131   -.0226105
factor_rel~n |   .3006122   .0548079     5.48   0.000     .1930239    .4082005
factor_inc~e |   .5109422   .2949849     1.73   0.084    -.0681151    1.089999
factor_pol~s |   .0926789    .076161     1.22   0.224    -.0568257    .2421835
factor_com~e |    .090689   .0666318     1.36   0.174    -.0401095    .2214876
int_educ_w~h |   .0563881     .03978     1.42   0.157    -.0217003    .1344765
       _cons |   7.551092   1.055325     7.16   0.000     5.479484    9.622701
------------------------------------------------------------------------------
```

Poland

```
Linear regression                               Number of obs =     511
                                                F( 12,   498) =   15.14
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2558
                                                Root MSE      =   1.757
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6949497   .1084397     6.41   0.000     .4818941    .9080053
     control |   .2016663   .0450681     4.47   0.000     .1131191    .2902134
     married |    .781393    .200369     3.90   0.000     .3877202    1.175066
    children |   .0745129   .0796584     0.94   0.350    -.0819951    .2310209
   education |  -.0600093   .0514845    -1.17   0.244     -.161163    .0411443
         sex |   .3017774   .1731956     1.74   0.082    -.0385068    .6420615
         age |    .011666   .0063624     1.83   0.067    -.0008346    .0241665
factor_rel~n |   .1832861   .1127731     1.63   0.105    -.0382836    .4048557
factor_inc~e |  -.0196769    .347422    -0.06   0.955    -.7022705    .6629167
factor_pol~s |  -.0223682   .0750241    -0.30   0.766    -.1697709    .1250346
factor_com~e |  -.0270143   .0761132    -0.35   0.723    -.1765569    .1225283
int_educ_w~h |    .090541   .0606026     1.49   0.136    -.0285273    .2096094
       _cons |   1.636528   .8747896     1.87   0.062    -.0822052    3.355261
------------------------------------------------------------------------------
```

Switzerland

```
Linear regression                               Number of obs =     682
                                                F( 12,   669) =   17.70
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2871
                                                Root MSE      =  1.3976

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6110679   .0915848     6.67   0.000     .4312396    .7908962
     control |   .1936442   .0422281     4.59   0.000     .1107287    .2765598
```

```
     married |   .2368491    .132721     1.78   0.075    -.0237508    .4974489
    children |   .0825841    .058997     1.40   0.162    -.0332576    .1984258
   education |  -.0004604    .044237    -0.01   0.992    -.0873204    .0863996
         sex |   .0629203   .1123666     0.56   0.576    -.1577133    .2835539
         age |   .0071277    .004452     1.60   0.110    -.0016139    .0158694
factor_rel~n |   .0378317   .0567918     0.67   0.506    -.0736799    .1493433
factor_inc~e |   .7075236   .2301292     3.07   0.002      .255661    1.159386
factor_pol~s |   .3602522   .0997023     3.61   0.000     .1644851    .5560193
factor_com~e |   .0977406   .0535336     1.83   0.068    -.0073735    .2028546
int_educ_w~h |  -.0421602   .0352017    -1.20   0.231    -.1112793    .0269589
       _cons |   3.035331   .7159364     4.24   0.000     1.629578    4.441083
```

Brazil

```
Linear regression                               Number of obs =     964
                                                F( 12,   951) =   15.63
                                                Prob > F      =  0.0000
                                                R-squared     =  0.1590
                                                Root MSE      =  2.0213

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |    .394195   .0954983     4.13   0.000     .2067832    .5816068
     control |   .2139409   .0367353     5.82   0.000     .1418493    .2860324
     married |   .2752032    .158827     1.73   0.083    -.0364886     .586895
    children |   .0314155   .0490101     0.64   0.522     -.064765     .127596
   education |   -.131461   .0305533    -4.30   0.000    -.1914206   -.0715013
         sex |  -.0669579   .1410557    -0.47   0.635    -.3437744    .2098586
         age |   .0031341   .0057858     0.54   0.588    -.0082204    .0144885
factor_rel~n |   .4648963   .1250628     3.72   0.000     .2194653    .7103272
factor_inc~e |   .5977391   .1632339     3.66   0.000     .2773987    .9180794
factor_pol~s |    .004117   .0598451     0.07   0.945    -.1133268    .1215608
factor_com~e |   .1170083   .0825471     1.42   0.157    -.0449872    .2790039
int_educ_w~h |  -.0182712   .0334689    -0.55   0.585    -.0839526    .0474102
       _cons |   4.663655   .7253919     6.43   0.000     3.240101    6.087208
```

Chile

```
Linear regression                               Number of obs =     578
                                                F( 12,   565) =   20.42
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2746
                                                Root MSE      =  1.7205

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .3097388   .1018364     3.04   0.002     .1097147    .5097629
     control |   .2578268   .0431315     5.98   0.000     .1731091    .3425444
     married |   .0513923   .1826494     0.28   0.779    -.3073625    .4101471
    children |  -.0234523    .060218    -0.39   0.697    -.1417309    .0948263
   education |  -.0653899   .0533716    -1.23   0.221     -.170221    .0394411
         sex |   .1628515    .160614     1.01   0.311     -.152622    .4783251
         age |   .0020327    .006593     0.31   0.758     -.010917    .0149824
factor_rel~n |   .2459819   .0906305     2.71   0.007     .0679681    .4239957
factor_inc~e |   .6981994   .2308607     3.02   0.003     .2447495    1.151649
factor_pol~s |  -.0092803   .0747829    -0.12   0.901    -.1561667    .1376061
factor_com~e |   .0310188   .0659934     0.47   0.639    -.0986035    .1606412
```

```
int_educ_w~h |  -.0036043   .0410869    -0.09   0.930     -.084306    .0770974
       _cons |   4.520245    .888292     5.09   0.000     2.775487    6.265003
```

India

```
Linear regression                               Number of obs =     863
                                                F( 12,   850) =   42.18
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3273
                                                Root MSE      =  1.9238

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .8876425   .1002256     8.86   0.000     .6909239    1.084361
     control |   .1880535   .0268709     7.00   0.000     .1353124    .2407946
     married |   .0751803   .3174739     0.24   0.813    -.5479445    .6983051
    children |   .0081763   .0536692     0.15   0.879    -.0971634    .1135161
   education |  -.0403666   .0286184    -1.41   0.159    -.0965376    .0158044
         sex |   .1575536    .136981     1.15   0.250    -.1113071    .4264142
         age |   .0017116   .0059979     0.29   0.775    -.0100609    .0134841
factor_rel~n |   .1152511   .0941486     1.22   0.221    -.0695399    .3000421
factor_inc~e |   .6003399   .1533644     3.91   0.000     .2993226    .9013572
factor_pol~s |   .2457391   .0818097     3.00   0.003     .0851664    .4063119
factor_com~e |  -.1379883   .0463807    -2.98   0.003    -.2290224   -.0469543
int_educ_w~h |  -.0060102   .0235707    -0.25   0.799    -.0522738    .0402533
       _cons |   2.353335   .8520429     2.76   0.006     .6809798    4.025689
```

East Germany

```
Linear regression                               Number of obs =     660
                                                F( 12,   647) =   35.10
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3526
                                                Root MSE      =  1.7852

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5691392   .1032252     5.51   0.000     .3664423    .7718361
     control |   .2869849   .0363617     7.89   0.000     .2155837    .3583862
     married |   .4192898   .1781752     2.35   0.019     .0694184    .7691613
    children |  -.0215936   .0736237    -0.29   0.769    -.1661639    .1229767
   education |  -.0333435   .0322617    -1.03   0.302    -.0966938    .0300067
         sex |  -.0016569    .143772    -0.01   0.991    -.2839729    .2806592
         age |  -.0004785     .00546    -0.09   0.930       -.0112    .0102429
factor_rel~n |   .1703212   .0652585     2.61   0.009     .0421772    .2984652
factor_inc~e |   .8544302   .2100423     4.07   0.000     .4419834    1.266877
factor_pol~s |  -.0650873   .0713543    -0.91   0.362    -.2052013    .0750267
factor_com~e |   .3001507   .1639489     1.83   0.068    -.0217853    .6220868
int_educ_w~h |  -.0205521   .0346862    -0.59   0.554    -.0886633     .047559
       _cons |    3.18937   .7537316     4.23   0.000     1.709314    4.669425
```

Slovenia

```
Linear regression                               Number of obs =     532
                                                F( 12,   519) =   21.08
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2995
                                                Root MSE      =  1.6502
```

```
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .4406971   .0908149     4.85   0.000      .262287    .6191071
     control |   .1954203   .0431673     4.53   0.000     .1106163    .2802244
     married |  -.0143925   .2515363    -0.06   0.954     -.508547     .479762
    children |   .0297005   .1020511     0.29   0.771    -.1707835    .2301844
   education |  -.0673356   .0507566    -1.33   0.185    -.1670492     .032378
         sex |  -.1082279   .1539154    -0.70   0.482    -.4106016    .1941458
         age |  -.0144586   .0055573    -2.60   0.010    -.0253762    -.003541
factor_rel~n |   .1302282   .0665241     1.96   0.051    -.0004615    .2609179
factor_inc~e |   .7944997   .2610884     3.04   0.002     .2815798     1.30742
factor_pol~s |   .0897513   .0826414     1.09   0.278    -.0726014    .2521041
factor_com~e |   .1992994   .0926331     2.15   0.032     .0173174    .3812814
int_educ_w~h |  -.0266164   .0448531    -0.59   0.553    -.1147323    .0614996
       _cons |    5.99362   .8975447     6.68   0.000     4.230352    7.756887
------------------------------------------------------------------------------
```

Bulgaria

```
Linear regression                               Number of obs =     542
                                                F( 12,   529) =   26.45
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3580
                                                Root MSE      =  1.8568

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .3527799   .1160641     3.04   0.002     .1247767     .580783
     control |   .2741772   .0478578     5.73   0.000     .1801625    .3681919
     married |    .166008   .2141427     0.78   0.439    -.2546665    .5866825
    children |   .1174316    .119447     0.98   0.326     -.117217    .3520801
   education |  -.0131203   .0485169    -0.27   0.787    -.1084298    .0821892
         sex |   .1973263   .1662463     1.19   0.236    -.1292576    .5239102
         age |   .0028401   .0068561     0.41   0.679    -.0106284    .0163087
factor_rel~n |   .0980658   .0949053     1.03   0.302    -.0883716    .2845033
factor_inc~e |    .936456   .2658643     3.52   0.000     .4141766    1.458735
factor_pol~s |   .1067179   .0468349     2.28   0.023     .0147127    .1987231
factor_com~e |   .2029473   .2593676     0.78   0.434    -.3065697    .7124643
int_educ_w~h |  -.0256676   .0408693    -0.63   0.530    -.1059537    .0546184
       _cons |   2.711174   .8838513     3.07   0.002     .9748851    4.447463
------------------------------------------------------------------------------
```

Romania

```
Linear regression                               Number of obs =     927
                                                F( 12,   914) =   46.90
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3335
                                                Root MSE      =  1.8715

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .3642279   .0995066     3.66   0.000       .16894    .5595158
     control |   .1983499   .0300652     6.60   0.000     .1393451    .2573546
     married |  -.0166923   .1801709    -0.09   0.926     -.370289    .3369044
    children |   .0105063   .0567303     0.19   0.853    -.1008305    .1218431
```

```
   education |  -.0646624   .0362209    -1.79   0.075    -.1357482    .0064233
         sex |   .0463779   .1290864     0.36   0.719    -.2069623     .299718
         age |  -.0010385   .0049844    -0.21   0.835    -.0108207    .0087438
factor_rel~n |    .139554   .1255996     1.11   0.267    -.1069431    .3860511
factor_inc~e |   1.067371   .1464258     7.29   0.000     .7800007     1.35474
factor_pol~s |   .1708695   .0483081     3.54   0.000     .0760618    .2656772
factor_com~e |   .1188631   .1587645     0.75   0.454    -.1927223    .4304485
int_educ_w~h |  -.0356962   .0241639    -1.48   0.140    -.0831194     .011727
       _cons |   3.898107   .7529453     5.18   0.000     2.420404    5.375809
```

China

```
Linear regression                               Number of obs =     872
                                                F( 11,   860) =   37.55
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3560
                                                Root MSE      =  1.8264
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .4468197   .0726873     6.15   0.000     .3041545    .5894848
     control |   .2307128   .0373882     6.17   0.000     .1573301    .3040955
     married |   .3986886   .3025896     1.32   0.188    -.1952119    .9925891
    children |   .1497413   .0632679     2.37   0.018     .0255637    .2739189
   education |   .0191033   .0268337     0.71   0.477    -.0335639    .0717706
         sex |   -.005364   .1296653    -0.04   0.967    -.2598615    .2491335
         age |   .0101636    .006564     1.55   0.122    -.0027197    .0230469
factor_inc~e |   1.016936   .1660541     6.12   0.000     .6910175    1.342855
factor_pol~s |   .1752596   .0686575     2.55   0.011     .0405038    .3100155
factor_com~e |   .0016587   .0575439     0.03   0.977    -.1112843    .1146018
int_educ_w~h |   -.025734   .0305738    -0.84   0.400    -.0857421     .034274
       _cons |   2.568397   .7872061     3.26   0.001     1.023327    4.113467
```

Taiwan

```
Linear regression                               Number of obs =     848
                                                F( 12,   835) =   44.86
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3794
                                                Root MSE      =  1.6862

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5054763   .0921615     5.48   0.000     .3245809    .6863717
     control |   .2126989    .034641     6.14   0.000     .1447052    .2806926
     married |     .32655   .2002338     1.63   0.103    -.0664707    .7195707
    children |   .0732433   .0705071     1.04   0.299    -.0651487    .2116352
   education |  -.0345537   .0295579    -1.17   0.243    -.0925703    .0234628
         sex |   .1645393    .121138     1.36   0.175    -.0732314      .40231
         age |  -.0009467   .0057897    -0.16   0.870    -.0123108    .0104175
factor_rel~n |   .1639042    .069917     2.34   0.019     .0266704    .3011379
factor_inc~e |   1.273948   .1708592     7.46   0.000     .9385839    1.609312
factor_pol~s |   .0763113   .0683726     1.12   0.265    -.0578911    .2105137
factor_com~e |   .0987921   .1015781     0.97   0.331    -.1005863    .2981705
int_educ_w~h |  -.0564546    .024593    -2.30   0.022    -.1047259   -.0081833
       _cons |   2.931271   .7300549     4.02   0.000     1.498313     4.36423
```

Turkey

```
Linear regression                               Number of obs =     713
                                                F( 12,   700) =   16.35
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2281
                                                Root MSE      =  2.0268
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .8650306   .1080835     8.00   0.000     .6528239    1.077237
     control |    .144112   .0378271     3.81   0.000     .0698438    .2183802
     married |   .7505713   .4045972     1.86   0.064    -.0437982    1.544941
    children |  -.0438887   .0598473    -0.73   0.464    -.1613905     .073613
   education |   -.088391   .0454867    -1.94   0.052    -.1776977    .0009157
         sex |   .3628474   .1770002     2.05   0.041     .0153325    .7103623
         age |   .0026631   .0068384     0.39   0.697    -.0107632    .0160894
factor_rel~n |   .4008797   .1980162     2.02   0.043     .0121029    .7896565
factor_inc~e |   .7226992   .2138209     3.38   0.001     .3028921    1.142506
factor_pol~s |    .106951   .0493104     2.17   0.030      .010137    .2037649
factor_com~e |  -.2486093   .2195868    -1.13   0.258     -.679737    .1825185
int_educ_w~h |  -.0348643   .0378354    -0.92   0.357    -.1091488    .0394202
       _cons |   2.322995   1.196365     1.94   0.053    -.0258986    4.671889
------------------------------------------------------------------------------
```

Ukraine

```
Linear regression                               Number of obs =     505
                                                F( 12,   492) =   32.58
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3801
                                                Root MSE      =  1.8355
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .9018364   .1306782     6.90   0.000     .6450802    1.158593
     control |   .2166665   .0461417     4.70   0.000     .1260074    .3073255
     married |   .2206952   .2115624     1.04   0.297    -.1949819    .6363724
    children |  -.0565541   .1076017    -0.53   0.599    -.2679697    .1548615
   education |  -.0098098   .0427194    -0.23   0.818    -.0937447    .0741251
         sex |   .4261399   .1718084     2.48   0.013     .0885711    .7637086
         age |    .008457   .0067962     1.24   0.214     -.004896    .0218101
factor_rel~n |   .1194781   .1060832     1.13   0.261    -.0889538      .32791
factor_inc~e |   .7834345   .3644001     2.15   0.032     .0674621    1.499407
factor_pol~s |   .0829337   .0536845     1.54   0.123    -.0225455     .188413
factor_com~e |   .1044149   .1152344     0.91   0.365    -.1219973    .3308272
int_educ_w~h |  -.0149011   .0507599    -0.29   0.769    -.1146339    .0848318
       _cons |   1.471677   .7921443     1.86   0.064    -.0847258     3.02808
------------------------------------------------------------------------------
```

Russia

```
Linear regression                               Number of obs =    1317
                                                F(  8,  1308) =   36.03
                                                Prob > F      =  0.0000
                                                R-squared     =  0.1844
                                                Root MSE      =  2.1849

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

```
      health |   .7842128   .0978416     8.02   0.000     .5922691    .9761564
     control |   .2937803   .0265046    11.08   0.000     .2417841    .3457765
     married |   .2781939   .1530599     1.82   0.069    -.0220759    .5784637
    children |  -.1230306   .0839349    -1.47   0.143    -.2876924    .0416311
   education |   -.010182   .0330673    -0.31   0.758    -.0750527    .0546887
         sex |   .3279467   .1269987     2.58   0.010     .0788033    .5770901
         age |    .007139   .0052533     1.36   0.174    -.0031669    .0174449
factor_com~e |   .0454219   .1035921     0.44   0.661    -.1578029    .2486467
       _cons |    1.11614   .6496918     1.72   0.086    -.1584122    2.390692
```

Peru

```
Linear regression                               Number of obs =     823
                                                F( 12,   810) =   10.38
                                                Prob > F      =  0.0000
                                                R-squared     =  0.1430
                                                Root MSE      =  2.0745

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5727797    .116257     4.93   0.000     .3445792    .8009803
     control |   .1770012   .0400655     4.42   0.000     .0983567    .2556457
     married |   .1865995   .2106579     0.89   0.376    -.2269002    .6000993
    children |  -.0431104   .0509744    -0.85   0.398    -.1431678    .0569471
   education |  -.1355702   .0415957    -3.26   0.001    -.2172182   -.0539222
         sex |  -.2931964   .1506848    -1.95   0.052     -.588975    .0025823
         age |   .0097361   .0073487     1.32   0.186    -.0046887    .0241609
factor_rel~n |   .1797297   .1227534     1.46   0.144    -.0612226     .420682
factor_inc~e |    .925555   .2543932     3.64   0.000     .4262074    1.424903
factor_pol~s |  -.0139187   .0682876    -0.20   0.839    -.1479603    .1201228
factor_com~e |   .1096344   .1005912     1.09   0.276    -.0878157    .3070845
int_educ_w~h |  -.0608118   .0392363    -1.55   0.122    -.1378286    .0162049
       _cons |    5.19695   .8235321     6.31   0.000     3.580442    6.813459
```

Ghana

```
Linear regression                               Number of obs =     717
                                                F( 11,   705) =   32.29
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2847
                                                Root MSE      =  2.3053

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5562748   .1103049     5.04   0.000     .3397094    .7728401
     control |   .1498183   .0406333     3.69   0.000     .0700416     .229595
     married |  -.2529323   .2365381    -1.07   0.285    -.7173358    .2114711
    children |   .0305742   .0549361     0.56   0.578    -.0772838    .1384321
   education |  -.1049432   .0501419    -2.09   0.037    -.2033884   -.0064979
         sex |   .1943767   .1890119     1.03   0.304    -.1767168    .5654703
         age |  -.0023383   .0088523    -0.26   0.792    -.0197184    .0150417
factor_inc~e |    1.37242   .1524667     9.00   0.000     1.073077    1.671763
factor_pol~s |   .3226336   .1240653     2.60   0.010      .079052    .5662152
factor_com~e |   .0678431    .075289     0.90   0.368    -.0799744    .2156607
int_educ_w~h |  -.0824092   .0401129    -2.05   0.040    -.1611642   -.0036542
       _cons |   4.024251    .915199     4.40   0.000     2.227409    5.821093
```

Moldova

Linear regression

				Number of obs	= 635
				F(12, 622)	= 77.05
				Prob > F	= 0.0000
				R-squared	= 0.5038
				Root MSE	= 1.5645

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.2509836	.081523	3.08	0.002	.09089	.4110773
control	.0257137	.0359697	0.71	0.475	-.044923	.0963504
married	.2657813	.1775874	1.50	0.135	-.0829623	.6145249
children	-.0519401	.059424	-0.87	0.382	-.168636	.0647558
education	-.0846643	.0465603	-1.82	0.069	-.1760988	.0067702
sex	-.2247077	.1269208	-1.77	0.077	-.473953	.0245376
age	.0077498	.0055046	1.41	0.160	-.0030602	.0185597
factor_rel~n	.2747852	.090267	3.04	0.002	.0975202	.4520501
factor_inc~e	1.572787	.2267339	6.94	0.000	1.12753	2.018044
factor_pol~s	.1273033	.0657312	1.94	0.053	-.0017786	.2563851
factor_com~e	-.0168339	.0841801	-0.20	0.842	-.1821454	.1484777
int_educ_w~h	-.0231793	.0344455	-0.67	0.501	-.0908228	.0444642
_cons	4.989519	.7161026	6.97	0.000	3.583247	6.395791

Thailand

Linear regression

				Number of obs	= 1105
				F(12, 1092)	= 27.41
				Prob > F	= 0.0000
				R-squared	= 0.2769
				Root MSE	= 1.5121

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.397553	.0712143	5.58	0.000	.2578208	.5372853
control	.2254377	.0346573	6.50	0.000	.1574354	.2934401
married	.4879403	.1826212	2.67	0.008	.1296123	.8462684
children	-.0099489	.0359819	-0.28	0.782	-.0805504	.0606526
education	-.0032546	.0471776	-0.07	0.945	-.0958236	.0893144
sex	.0897065	.093374	0.96	0.337	-.0935063	.2729193
age	.0074283	.0043007	1.73	0.084	-.0010102	.0158669
factor_rel~n	.2291042	.0825043	2.78	0.006	.0672193	.3909891
factor_inc~e	.5837257	.160923	3.63	0.000	.2679724	.899479
factor_pol~s	.2251992	.0890682	2.53	0.012	.050435	.3999633
factor_com~e	.2034406	.0366323	5.55	0.000	.1315629	.2753183
int_educ_w~h	.0058058	.0407249	0.14	0.887	-.0741022	.0857138
_cons	2.783072	.6048353	4.60	0.000	1.596301	3.969842

Indonesia

Linear regression

				Number of obs	= 781
				F(12, 768)	= 28.67
				Prob > F	= 0.0000
				R-squared	= 0.3048
				Root MSE	= 1.7299

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]

```
-------------+----------------------------------------------------------------
      health |   .2380973   .0985722     2.42   0.016     .0445944    .4316002
     control |   .2014048   .0390484     5.16   0.000     .1247506     .278059
     married |  -.4673043   .2729697    -1.71   0.087     -1.00316    .0685509
    children |  -.0567049   .0541628    -1.05   0.295    -.1630295    .0496197
   education |   .0583038   .0378049     1.54   0.123    -.0159094    .1325169
         sex |  -.1291645    .135138    -0.96   0.339    -.3944483    .1361193
         age |   .0042506   .0073718     0.58   0.564    -.0102206    .0187218
factor_rel~n |   .6730421   .1746056     3.85   0.000     .3302812    1.015803
factor_inc~e |   1.093034   .2043023     5.35   0.000     .6919764    1.494091
factor_pol~s |  -.0156572   .1071819    -0.15   0.884    -.2260615    .1947471
factor_com~e |   .0124573     .06921     0.18   0.857     -.123406    .1483206
int_educ_w~h |  -.0347445   .0318283    -1.09   0.275    -.0972253    .0277362
       _cons |   4.653719   .9135914     5.09   0.000     2.860286    6.447151
```

Vietnam

```
Linear regression                               Number of obs =     963
                                                F( 12,   950) =   53.02
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3747
                                                Root MSE      =  1.4899

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .0849475   .0729713     1.16   0.245    -.0582562    .2281511
     control |   .3080602   .0323667     9.52   0.000     .2445417    .3715786
     married |   .3690341    .173366     2.13   0.034     .0288096    .7092586
    children |   .0030852   .0409154     0.08   0.940    -.0772097    .0833801
   education |  -.0206651   .0360174    -0.57   0.566    -.0913478    .0500177
         sex |   .0873631   .1025447     0.85   0.394    -.1138773    .2886035
         age |   .0034897   .0044112     0.79   0.429    -.0051671    .0121465
factor_rel~n |   .0330199   .0503988     0.66   0.513    -.0658859    .1319257
factor_inc~e |   1.630844   .2420476     6.74   0.000     1.155834    2.105853
factor_pol~s |   .4528723   .1002495     4.52   0.000     .2561363    .6496082
factor_com~e |   .2061221   .0557469     3.70   0.000     .0967209    .3155234
int_educ_w~h |  -.1508528    .049821    -3.03   0.003    -.2486248   -.0530808
       _cons |   3.638428    .565423     6.43   0.000     2.528806    4.748051
```

Colombia

```
Linear regression                               Number of obs =    2813
                                                F(  8,  2804) =   27.79
                                                Prob > F      =  0.0000
                                                R-squared     =  0.1067
                                                Root MSE      =  1.8048

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |    .508935   .0556205     9.15   0.000     .3998738    .6179962
     control |   .1856937   .0209784     8.85   0.000     .1445591    .2268282
     married |   .2767464   .0728785     3.80   0.000     .1338454    .4196473
   education |  -.0656305   .0151303    -4.34   0.000    -.0952983   -.0359628
         sex |   .0774464     .06889     1.12   0.261    -.0576339    .2125266
         age |  -.0026213   .0028456    -0.92   0.357     -.008201    .0029584
factor_pol~s |   .1162016   .0282487     4.11   0.000     .0608113    .1715918
factor_com~e |   .0416357   .0673326     0.62   0.536    -.0903908    .1736622
       _cons |   5.347817   .3144124    17.01   0.000     4.731313     5.96432
```

Serbia

Linear regression

				Number of obs =	554
				F(12, 541) =	75.82
				Prob > F =	0.0000
				R-squared =	0.5273
				Root MSE =	1.4885

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.3956607	.1024813	3.86	0.000	.1943507	.5969707
control	.3839013	.0449619	8.54	0.000	.29558	.4722226
married	-.0275821	.1888383	-0.15	0.884	-.3985282	.343364
children	-.1475876	.0875605	-1.69	0.092	-.3195877	.0244126
education	-.0284414	.0349882	-0.81	0.417	-.0971707	.0402879
sex	.1901433	.1334083	1.43	0.155	-.0719184	.4522051
age	.0036289	.0061025	0.59	0.552	-.0083586	.0156164
factor_rel~n	-.0296716	.0820868	-0.36	0.718	-.1909195	.1315763
factor_inc~e	1.286321	.2034123	6.32	0.000	.8867462	1.685896
factor_pol~s	.0295988	.0609631	0.49	0.628	-.0901545	.1493522
factor_com~e	-.0287623	.1237953	-0.23	0.816	-.2719407	.2144161
int_educ_w~h	-.0795518	.0295576	-2.69	0.007	-.1376136	-.0214899
_cons	2.828321	.7436412	3.80	0.000	1.367543	4.289099

New Zealand

Linear regression

				Number of obs =	648
				F(10, 637) =	75.72
				Prob > F =	0.0000
				R-squared =	0.5245
				Root MSE =	1.2387

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.1891555	.0695962	2.72	0.007	.0524897	.3258212
control	.0822982	.0273348	3.01	0.003	.028621	.1359755
married	.1987974	.1549299	1.28	0.200	-.1054377	.5030325
children	.0681752	.0452101	1.51	0.132	-.0206036	.156954
education	-.0637071	.0246646	-2.58	0.010	-.1121409	-.0152734
sex	-.0216664	.1024944	-0.21	0.833	-.2229342	.1796013
age	.0097752	.0059448	1.64	0.101	-.0018985	.021449
factor_rel~n	-.0544347	.1478517	-0.37	0.713	-.3447705	.235901
factor_inc~e	1.213768	.0941072	12.90	0.000	1.02897	1.398566
int_educ_w~h	.0668145	.0234394	2.85	0.005	.0207867	.1128422
_cons	3.77116	.623862	6.04	0.000	2.546086	4.996235

Egypt

Linear regression

				Number of obs =	2364
				F(11, 2352) =	106.78
				Prob > F =	0.0000
				R-squared =	0.2981
				Root MSE =	2.2601

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]

```
-------------+----------------------------------------------------------------
      health |   .4723968   .0659174     7.17   0.000     .3431345    .6016591
     control |   .1130257   .0222189     5.09   0.000     .0694551    .1565964
     married |  -.2532721   .1621928    -1.56   0.119    -.5713279    .0647837
    children |   .0725739   .0328072     2.21   0.027       .00824    .1369079
   education |   -.077453   .0187378    -4.13   0.000    -.1141974   -.0407086
         sex |   .1602979   .1172688     1.37   0.172    -.0696631    .3902589
         age |  -.0080326   .0047425    -1.69   0.090    -.0173325    .0012674
factor_rel~n |   .3895112    .148214     2.63   0.009     .0988676    .6801548
factor_inc~e |   1.301236    .081437    15.98   0.000      1.14154    1.460931
factor_com~e |  -.0710954   .1272873    -0.56   0.577    -.3207023    .1785114
int_educ_w~h |  -.0118403   .0145936    -0.81   0.417    -.0404579    .0167774
       _cons |   4.631543   .6122157     7.57   0.000     3.431005    5.832082
```

Morocco

```
Linear regression                               Number of obs =     489
                                                F( 12,   476) =   49.35
                                                Prob > F      =  0.0000
                                                R-squared     =  0.5131
                                                Root MSE      =  1.2657

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .2533222   .0824741     3.07   0.002     .0912639    .4153805
     control |   .0746651    .032349     2.31   0.021     .0111007    .1382296
     married |    .215669    .191327     1.13   0.260    -.1602808    .5916189
    children |   .1126092   .0541592     2.08   0.038     .0061885    .2190299
   education |  -.0622465   .0297093    -2.10   0.037    -.1206241    -.003869
         sex |  -.0355194   .1216727    -0.29   0.770    -.2746015    .2035627
         age |   .0094626   .0066495     1.42   0.155    -.0036035    .0225286
factor_rel~n |  -.1790743   .1666631    -1.07   0.283    -.5065606     .148412
factor_inc~e |   1.217938   .1193398    10.21   0.000       .98344    1.452436
factor_pol~s |    .145094   .0639032     2.27   0.024     .0195268    .2706613
factor_com~e |  -.0048053   .1730926    -0.03   0.978    -.3449254    .3353149
int_educ_w~h |   .0528739   .0274915     1.92   0.055    -.0011459    .1068937
       _cons |   3.678369   .7548785     4.87   0.000     2.195063    5.161675
------------------------------------------------------------------------------
```

Iran

```
Linear regression                               Number of obs =    1262
                                                F( 12,  1249) =   42.50
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2641
                                                Root MSE      =  2.0909

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5688703    .080889     7.03   0.000     .4101771    .7275636
     control |   .2285885   .0306657     7.45   0.000     .1684266    .2887504
     married |   .9514138   .2453321     3.88   0.000     .4701053    1.432722
    children |   .0422127   .0510232     0.83   0.408     -.057888    .1423133
   education |   .0084832   .0284127     0.30   0.765    -.0472587    .0642251
         sex |    .179051   .1244446     1.44   0.150    -.0650925    .4231946
         age |  -.0039284   .0067419    -0.58   0.560    -.0171551    .0092983
factor_rel~n |   .3678867   .1347115     2.73   0.006     .1036009    .6321725
factor_inc~e |   .8847802   .1318677     6.71   0.000     .6260736    1.143487
factor_pol~s |   .0936334   .0433315     2.16   0.031     .0086227     .178644
```

```
factor_com~e |   -.087558    .071475    -1.23   0.221    -.2277824    .0526663
int_educ_w~h |  -.0243294   .0242344    -1.00   0.316    -.0718742    .0232153
       _cons |   .9644177   .6792544     1.42   0.156    -.3681877    2.297023
```

Jordan

```
Linear regression                               Number of obs =     674
                                                F( 10,   663) =   28.55
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2956
                                                Root MSE      =  2.3291

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .7124244   .1442625     4.94   0.000     .4291579    .9956908
     control |    .497167   .0467699    10.63   0.000      .405332     .589002
     married |    1.10145   .6325568     1.74   0.082    -.1406061    2.343506
    children |  -.0882272   .0489064    -1.80   0.072    -.1842573    .0078029
   education |   .0096886   .0353678     0.27   0.784    -.0597578     .079135
         sex |   .7467411    .197408     3.78   0.000      .359121    1.134361
         age |   .0262966   .0083371     3.15   0.002     .0099263    .0426668
factor_rel~n |   .8424663   .3133708     2.69   0.007     .2271476    1.457785
factor_pol~s |   .2082037   .0750819     2.77   0.006     .0607767    .3556306
factor_com~e |   .3766996   .1215992     3.10   0.002     .1379336    .6154655
       _cons |  -3.559679   1.592709    -2.23   0.026    -6.687041   -.4323169
------------------------------------------------------------------------------
```

Cyprus

```
Linear regression                               Number of obs =     678
                                                F( 12,   665) =   13.73
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2187
                                                Root MSE      =  1.8383

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .6102653   .0949645     6.43   0.000      .423799    .7967317
     control |   .1304695     .03754     3.48   0.001     .0567583    .2041808
     married |   .3580358    .272305     1.31   0.189    -.1766453     .892717
    children |   .0144349   .0779712     0.19   0.853    -.1386645    .1675343
   education |   .0048011   .0482994     0.10   0.921    -.0900365    .0996388
         sex |   .0693365   .1446049     0.48   0.632    -.2146007    .3532737
         age |   .0140877   .0067477     2.09   0.037     .0008384    .0273369
factor_rel~n |  -.0999032   .0830025    -1.20   0.229    -.2628819    .0630754
factor_inc~e |   .7689052   .3856121     1.99   0.047     .0117412    1.526069
factor_pol~s |    .194954   .0548839     3.55   0.000     .0871873    .3027207
factor_com~e |   .0794638   .1007949     0.79   0.431    -.1184507    .2773784
int_educ_w~h |  -.0322914   .0532573    -0.61   0.545    -.1368641    .0722813
       _cons |   2.790223   .9374688     2.98   0.003     .9494681    4.630979
------------------------------------------------------------------------------
```

Iraq

```
Linear regression                               Number of obs =    1778
                                                F(  9,  1768) =   99.94
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3058
                                                Root MSE      =  1.9451
```

```
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |    .340548   .0583168     5.84   0.000     .2261709    .4549251
     control |   .3019911   .0200912    15.03   0.000      .262586    .3413962
     married |  -.2975566   .1884109    -1.58   0.114    -.6670881     .071975
    children |   .0571097   .0239374     2.39   0.017     .0101612    .1040582
   education |  -.0640635   .0215212    -2.98   0.003    -.1062732   -.0218537
         sex |   .4749192   .0996835     4.76   0.000     .2794093    .6704292
         age |  -.0121379   .0045296    -2.68   0.007    -.0210219    -.003254
factor_inc~e |   1.004859   .1042522     9.64   0.000     .8003887     1.20933
int_educ_w~h |  -.0174716   .0210426    -0.83   0.406    -.0587427    .0237994
       _cons |   2.576657   .5515902     4.67   0.000      1.49482    3.658495
------------------------------------------------------------------------------
```

Hong Kong

```
Linear regression                               Number of obs =     633
                                                F(  9,   623) =   42.84
                                                Prob > F      =  0.0000
                                                R-squared     =  0.4044
                                                Root MSE      =  1.4663

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .3678491   .1227807     3.00   0.003     .1267351    .6089632
     control |   .2731634   .0429068     6.37   0.000     .1889039     .357423
     married |   .2659302   .2294632     1.16   0.247    -.1846848    .7165452
    children |      .0922   .0562343     1.64   0.102    -.0182318    .2026317
   education |  -.0966715   .0358435    -2.70   0.007    -.1670603   -.0262827
         sex |   .1879934   .1181899     1.59   0.112    -.0441055    .4200922
         age |   .0140054   .0058372     2.40   0.017     .0025424    .0254684
factor_inc~e |   1.480632   .2396709     6.18   0.000     1.009971    1.951292
int_educ_w~h |  -.0826254   .0388224    -2.13   0.034    -.1588639   -.0063869
       _cons |   2.892866   .8264733     3.50   0.000     1.269855    4.515877
------------------------------------------------------------------------------
```

Trinidad

```
Linear regression                               Number of obs =     640
                                                F( 12,   627) =   17.78
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2530
                                                Root MSE      =  1.9188

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .5094621   .0982315     5.19   0.000     .3165595    .7023647
     control |   .2238422   .0445367     5.03   0.000      .136383    .3113014
     married |   .5847293   .1649944     3.54   0.000     .2607208    .9087378
    children |   .0160319   .0460582     0.35   0.728    -.0744152    .1064789
   education |  -.0530183   .0488478    -1.09   0.278    -.1489434    .0429068
         sex |  -.0201814   .1668702    -0.12   0.904    -.3478736    .3075108
         age |    .014994   .0060264     2.49   0.013     .0031595    .0268284
factor_rel~n |   .3648189   .1900079     1.92   0.055    -.0083099    .7379477
factor_inc~e |   .8548861   .2405672     3.55   0.000     .3824711    1.327301
factor_pol~s |  -.0423477   .0467599    -0.91   0.365    -.1341726    .0494773
factor_com~e |  -.0994751   .0718475    -1.38   0.167     -.240566    .0416159
```

```
int_educ_w~h |  -.0536439   .0479562    -1.12   0.264     -.147818    .0405303
       _cons |   2.340399     .76009     3.08   0.002     .8477691     3.83303
```

Andorra

```
Linear regression                               Number of obs =     495
                                                F( 12,   482) =   17.60
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3062
                                                Root MSE      =  1.4086
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |    .359783   .1079555     3.33   0.001     .1476616    .5719045
     control |   .2896233   .0442717     6.54   0.000      .202634    .3766126
     married |  -.0142273   .1839417    -0.08   0.938    -.3756541    .3471994
    children |    .097746   .0807603     1.21   0.227    -.0609397    .2564317
   education |   .0210966   .0367966     0.57   0.567    -.0512049    .0933981
         sex |   .0447225   .1288804     0.35   0.729    -.2085143    .2979593
         age |  -.0109165   .0065794    -1.66   0.098    -.0238443    .0020113
factor_rel~n |   .0728925   .0621253     1.17   0.241    -.0491774    .1949625
factor_inc~e |   .7113757    .210265     3.38   0.001     .2982264    1.124525
factor_pol~s |   .1248392   .0532228     2.35   0.019     .0202618    .2294166
factor_com~e |    .118723   .0622178     1.91   0.057    -.0035286    .2409746
int_educ_w~h |   -.019402   .0323875    -0.60   0.549    -.0830401    .0442361
       _cons |   3.763914   .8042584     4.68   0.000     2.183629      5.3442
```

Malaysia

```
Linear regression                               Number of obs =     614
                                                F( 11,   602) =   12.23
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2408
                                                Root MSE      =  1.5504

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   .2298391   .1118698     2.05   0.040     .0101367    .4495415
     control |    .419646   .0532893     7.87   0.000     .3149905    .5243016
     married |  -.2155506   .2551768    -0.84   0.399    -.7166954    .2855942
    children |  -.0154559     .04242    -0.36   0.716    -.0987651    .0678533
   education |   .0250978   .0494989     0.51   0.612    -.0721138    .1223093
         sex |   .1697871   .1285511     1.32   0.187    -.0826761    .4222503
         age |   .0048705   .0077665     0.63   0.531    -.0103823    .0201233
factor_inc~e |   .5706436   .2283089     2.50   0.013      .122265    1.019022
factor_pol~s |  -.0993716   .0752488    -1.32   0.187    -.2471536    .0484105
factor_com~e |   .0034676   .0702883     0.05   0.961    -.1345726    .1415077
int_educ_w~h |  -.0391059   .0475119    -0.82   0.411     -.132415    .0542032
       _cons |   2.939419   .7986644     3.68   0.000     1.370912    4.507926
```

Burkina Faso

```
Linear regression                               Number of obs =     485
                                                F( 12,   472) =   18.57
                                                Prob > F      =  0.0000
                                                R-squared     =  0.3089
                                                Root MSE      =  1.8086

------------------------------------------------------------------------------
```

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.7229749	.1274869	5.67	0.000	.4724629	.973487
control	-.1476518	.0339656	-4.35	0.000	-.2143944	-.0809093
married	.2575209	.3017292	0.85	0.394	-.3353778	.8504197
children	.0369234	.0466796	0.79	0.429	-.0548021	.1286488
education	-.0988151	.0346113	-2.85	0.004	-.1668264	-.0308038
sex	.0240838	.1758408	0.14	0.891	-.3214438	.3696115
age	-.0008732	.0077342	-0.11	0.910	-.0160709	.0143245
factor_rel~n	.186751	.1792799	1.04	0.298	-.1655344	.5390364
factor_inc~e	.9341765	.1595019	5.86	0.000	.6207549	1.247598
factor_pol~s	.1459507	.0492375	2.96	0.003	.0491989	.2427026
factor_com~e	.2044071	.1169567	1.75	0.081	-.0254132	.4342273
int_educ_w~h	-.0133062	.0361374	-0.37	0.713	-.0843163	.0577039
_cons	4.618085	.8849482	5.22	0.000	2.87916	6.357011

Ethiopia

Linear regression

Number of obs = 464
F(12, 451) = 21.09
Prob > F = 0.0000
R-squared = 0.3704
Root MSE = 1.4486

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.599694	.0838084	7.16	0.000	.4349906	.7643975
control	.2298725	.0463106	4.96	0.000	.1388612	.3208837
married	-.1661639	.1840654	-0.90	0.367	-.5278962	.1955683
children	.1324492	.0626209	2.12	0.035	.0093841	.2555142
education	-.038866	.0388592	-1.00	0.318	-.1152335	.0375015
sex	.2650754	.1394561	1.90	0.058	-.0089889	.5391397
age	.0011329	.0085977	0.13	0.895	-.0157636	.0180295
factor_rel~n	-.2860105	.1973333	-1.45	0.148	-.6738175	.1017965
factor_inc~e	.7275098	.1733347	4.20	0.000	.3868659	1.068154
factor_pol~s	.0399313	.0346233	1.15	0.249	-.0281117	.1079744
factor_com~e	.0495872	.0462811	1.07	0.285	-.0413662	.1405407
int_educ_w~h	-.0248074	.0357587	-0.69	0.488	-.0950817	.0454669
_cons	1.891474	.655664	2.88	0.004	.6029382	3.18001

Mali

Linear regression

Number of obs = 352
F(12, 339) = 29.72
Prob > F = 0.0000
R-squared = 0.4793
Root MSE = 1.7635

life_satis~n	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
health	.7076763	.1342177	5.27	0.000	.4436719	.9716806
control	.1360376	.048944	2.78	0.006	.0397654	.2323098
married	-.4251508	.3274409	-1.30	0.195	-1.069223	.2189209
children	.011375	.0472874	0.24	0.810	-.0816387	.1043887
education	-.0589188	.0635446	-0.93	0.354	-.1839101	.0660725
sex	-.0233497	.1982766	-0.12	0.906	-.4133571	.3666578
age	.0064421	.0071664	0.90	0.369	-.007654	.0205383

```
factor_rel~n |    -.49554   .2791748    -1.78   0.077    -1.044673    .0535932
factor_inc~e |   .9759496   .1758397     5.55   0.000     .6300753    1.321824
factor_pol~s |    .107937   .1121119     0.96   0.336    -.1125857    .3284597
factor_com~e |   .1438599   .0610252     2.36   0.019     .0238241    .2638956
int_educ_w~h |   .0543601   .0463868     1.17   0.242    -.0368821    .1456023
       _cons |   4.025903    1.02696     3.92   0.000     2.005887    6.045919
```

Rwanda

```
Linear regression                               Number of obs =     702
                                                F( 11,   690) =   43.37
                                                Prob > F      =  0.0000
                                                R-squared     =  0.4113
                                                Root MSE      =  1.5574
------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |   1.222107   .0919995    13.28   0.000     1.041475     1.40274
     control |   .2169136   .0331947     6.53   0.000     .1517389    .2820882
     married |   .0046462   .1615349     0.03   0.977    -.3125128    .3218052
    children |  -.0398561   .0361942    -1.10   0.271    -.1109202     .031208
   education |  -.1005977   .0371617    -2.71   0.007    -.1735612   -.0276341
         sex |   .1104371   .1271242     0.87   0.385    -.1391595    .3600337
         age |   .0005037   .0055071     0.09   0.927    -.0103089    .0113164
factor_rel~n |   -.262947   .1764067    -1.49   0.137    -.6093053    .0834113
factor_inc~e |   .9042045   .1221163     7.40   0.000     .6644404    1.143969
factor_com~e |  -.0291563   .0561587    -0.52   0.604    -.1394187    .0811061
int_educ_w~h |  -.0834143   .0297866    -2.80   0.005    -.1418974   -.0249311
       _cons |   1.922425   .6528795     2.94   0.003     .6405562    3.204294
```

Zambia

```
Linear regression                               Number of obs =     473
                                                F( 12,   460) =   20.16
                                                Prob > F      =  0.0000
                                                R-squared     =  0.2855
                                                Root MSE      =  2.1063

------------------------------------------------------------------------------
             |               Robust
life_satis~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      health |    .607866    .124527     4.88   0.000     .3631536    .8525784
     control |   .1928154   .0503675     3.83   0.000     .0938365    .2917942
     married |  -.1176737   .2212193    -0.53   0.595    -.5523994    .3170521
    children |   .1397724   .0715773     1.95   0.051    -.0008867    .2804314
   education |  -.0082577   .0578761    -0.14   0.887    -.1219919    .1054766
         sex |   .4374657   .2026026     2.16   0.031     .0393243     .835607
         age |  -.0119451   .0107358    -1.11   0.266    -.0330425    .0091522
factor_rel~n |  -.5731486   .1919442    -2.99   0.003    -.9503447   -.1959524
factor_inc~e |     .60579   .2704476     2.24   0.026      .074324    1.137256
factor_pol~s |   .2386356   .0749868     3.18   0.002     .0912766    .3859947
factor_com~e |   .0789533   .0817934     0.97   0.335    -.0817817    .2396883
int_educ_w~h |   .0100931     .05057     0.20   0.842    -.0892838      .10947
       _cons |   2.947701   .8140507     3.62   0.000     1.347982     4.54742
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```

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BIOGRAPHICAL SKETCH

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Jan H. Maridal completed his Bachelor of Arts in Political Science at Abilene Christian University in May 2000. After a short stint as a salesman in Norway, he went on to pursue a Master of Business Administration degree at Baylor University. This degree was completed in 2003. After work as a consultant and lecturer, he pursued a Master in Economics and a PhD in Public Administration and Policy. The economic degree was completed in 2007 and the Administration and Policy degree in the summer of 2010. Mr. Maridal's academic interests include the study of human happiness and life-satisfaction, economic and political institutions, and cultural influences on economic development.