Discussion Papers on Entrepreneurship, Growth and Public Policy

Culture, Institutions and Government Attitudes towards New Firm Entry

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Number of Pages: 37

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Abstract: This paper examines the relationship between cultural values, political institutions and government regulation of entry. For this, it couples data for 53 countries from a variety of sources in comparative political economy and cross-cultural psychology. A society's general attitude towards risk and uncertainty and power inequality are embedded in its institutions; hence, such values should mediate the intensity with which economic incentives affect regulatory procedures and outcomes. Results suggest that entry regulation levels are correlated with the way people in different countries deal with risk and uncertainty and accept inequality of power in their dealings with government institutions. Moreover, these intrinsic cultural values act as moderators for the correlation between economic and political variables, and regulatory intensity. Regulation thus emerges a response from government institutions to societies' needs deriving from cultural values.

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1.   Introduction

The purpose of this paper is to examine the relationship between social attitudes towards risk/uncertainty and power inequality and public policy, particularly in regard to government attitudes towards new firm creation. Countries differ significantly in the way in which they regulate the entry of new businesses through various administrative and screening processes. Such differences are not exclusively associated with different levels of wealth and economic development; indeed, they can be observed among countries with similar levels of *per capita* GDP (GDPpc). For instance, in order to meet requirements to operate a business in Italy, an entrepreneur needs to follow 16 different procedures, pay US$3946 in fees, and wait at least 62 business days to acquire the necessary permits. To do the same in Canada, an entrepreneur needs only to follow two procedures, paying US$280 and being able to complete the process in two days.[1]

Economic theory recognizes entry regulation – and, indeed, all kinds of market regulation – as a product of two different kinds of influences and motivations regarding the behavior of governments. In the first view, government regulation is pursued solely towards social welfare; the second current of thought views regulation as an activity pursued for the benefit of specific interest groups, such as industry incumbents, politicians and bureaucrats.

First, the 'public interest' theory of regulation (Pigou 1938) holds that unregulated markets exhibit frequent failures, ranging from monopoly power to externalities. A government that pursues social efficiency counters these failures and protects the public through regulation. As applied to new firm entry, this view holds that the government screens new ventures to make sure that consumers buy safe, high quality products from "desirable" sellers (Djankov *et al.* 2002). Hence, stricter regulation, as measured by a higher number of screening procedures, should be associated with socially superior outcomes.

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[1] Quoted from evidence shown in: Djankov, S., La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2002), 'The Regulation of Entry', *Quarterly Journal of Economics*, CXVII (1), 1-37.

Second, the "public choice" theory sees the government as less benign and regulation as socially inefficient. In the form suggested by Stigler (1971) and later by Peltzman (1976), industry incumbents are able to acquire regulations that create rents for themselves since they typically face lower information costs than do consumers. In this view, stricter regulation of entry raises incumbents' profits by keeping out potential competitors, thus leading to greater market power.

A second strand of the "public choice" theory holds that politicians and bureaucrats are the main beneficiaries of government regulation, using it to extract rents from incumbents and potential entrants in the form of campaign contributions, votes and bribes (see De Soto 1990). This view, also dubbed the "tollbooth" theory of regulation (Djankov *et al.* 2002), sees the requirement of multiple permits and other screening procedures from new ventures mostly as a way to provide politicians and bureaucrats with the power to extract rents from incumbents and/or entrepreneurs, regardless of the overall effects of entry on efficiency and welfare.

The present work does not aim to debate the significance of these theories as motivators for different levels of entry regulation. In fact, it is acknowledged that, over a wide variety of regulatory modes and practices, economic regulation theories provide a solid foundation sustaining the explanation of the economic incentives to regulate the emergence of new ventures. However, it is suggested that the intensity with which different governments regulate entry may also reflect and be mediated by different attitudes from legislators, public administration officials and the general public in different societies or countries towards public governance, private individual initiative and the uncertainty associated with industrial re-structuring.

This paper proposes that government regulation and, more particularly, the intensity of entry regulation, is correlated with a society's general attitude towards risk and uncertainty, as well as with the degree of power inequality that is inherent in its institutions; furthermore, it submits that such notions should be embedded in each society's core cultural values.

Both of these factors should influence the chain of policy and legislative decisions that gradually shape a country's entry regulation system. Such attitudes are likely to

be founded on socially realized cultural "values" which are intrinsic to different societies and are acquired by individuals before their behavior is affected by the economic incentives and motivations inherent to their future positions as politicians, government officials, public bureaucrats, industry incumbents or entrepreneurs. Hence, such cultural values should mediate the intensity with which economic incentives affect regulatory outcomes.

The present paper aims to test whether there is a significant correlation between different attitudes towards risk and power inequality, and public administration regulatory practices towards new ventures. For this, it couples data for a collection of 53 countries from a variety of sources. The assembled data set includes:

 i.   data regarding administrative procedures towards new firm creation in different countries;

 ii.   data on political institutions and legal origins and traditions for different countries;

 iii.   economic indicators such as per capita Gross Domestic Product (GDPpc)

 iv.   indicators of people's perceptions of the quality of governance;

 v.   measures of different society's attitudes towards risk and uncertainty and the degree of acceptance of power inequality.

The data set was constructed in order to formulate and test a series of hypotheses regarding the correlation between the regulation of entry and political, legal and economic variables, as well as the way such correlations may be moderated by variables that measure a society's intrinsic cultural attitudes towards uncertainty and power inequality. Such hypotheses are tested using regression analysis including interaction, or contingency, effects (see Jaccard and Turrisi 2003; Jaccard and Dodge 2003).

The results of the analysis conducted suggest that variations in administrative and screening procedures towards new entry reflect different levels of wealth, different legal traditions and different standards of public governance among countries, lending general support to public choice theories of regulation, as found by Djankov

et al. (2002). However, entry regulation also reflects significant heterogeneity in the way people in different countries deal with risk and uncertainty and accept inequality of power in their dealings with government institutions. Moreover, these intrinsic values act as moderators for the correlation between economic and political variables, and regulatory intensity, suggesting that economic regulation theories have different impacts on regulatory practices depending on culture.

The following section discusses relevant theoretical and empirical background regarding new firm entry, entrepreneurship and economic growth, thus establishing the relevance of the present research. In addition, it presents the main elements of research on cultural values and cross-cultural psychology – in particular regarding societies' attitudes towards uncertainty and power inequality – while also establishing an association between this field of research and more recent studies of the impact of legal traditions and political institutions on governance, public policy and economic growth. Such discussion provides the background for Section 3, which formulates empirical hypotheses regarding the correlation between regulatory practices towards new firm entry and political, economic, legal and cultural variables; Section 4 of the paper gives a detailed description of the data set assembled for testing such hypotheses. Section 5 addresses methodology issues and presents the results of the empirical analysis. Section 6 concludes.

2. Background

2.1 *Entrepreneurship, Economic Growth and Entry Regulation*

Entrepreneurship and high levels of new firm entry have been associated with increases in efficiency, greater innovative activity and employment growth (see: Geroski 1995; Wennekers and Thurik 1999; and Carree and Thurik 2003). Endogenous growth theories (see Romer 1986, 1990; Aghion and Howitt 1992) perceive technological innovation as the main driver of economic growth, since the accumulation of research and development efforts and technological innovations generates a "pool" of knowledge from which everyone in an economy can draw upon

to generate more knowledge and innovation. Hence, there would be increasing returns to knowledge. Recent work by Audretsch and Keilbach (2004), and Acs and Varga (2004) has suggested that "entrepreneurship capital", measured as the number of start-ups in all industries relative to population, should be considered a significant input when identifying and estimating economic growth functions for regions or countries.

Moreover, it can also be suggested that the proliferation of new firm start-ups should enhance the technological catch-up effect associated with convergence between poorer and richer countries, through the adoption of new processes and equipments (Abramowitz 1986). A variety of research works in economics and business has found that new entrants are usually more successful than incumbents at implementing innovations that lead to radical change both within organizations and in their business environment (see, for instance, Christensen and Rosenbloom 1995).

Such findings suggest that facilitating new firm creation under reasonable conditions regarding quality and safety should be in the public interest since higher levels of entrepreneurship tend to promote higher levels of economic growth and employment. This seems to indicate an inconsistence regarding the public interest theory of regulation, since an increase in entry regulation procedures would not necessarily promote the optimization of social welfare, at least in the long run.

2.2 Recent Research on Comparative Political Economy

Empirical work in comparative economics has recently started to look more specifically at the significance of differences in ethno-linguistic groups, legal traditions (British common law, French, German or Scandinavian civil law, and socialist law), political institutions and inclinations, and religious beliefs and practices determinant factors of heterogeneity between countries in regard to a variety of issues in governance and economic performance. Djankov *et al.* (2002), provide an important precedent to the present paper by offering a first examination of the data on entry administrative procedures used here, finding evidence that higher regulatory intensity is associated with lower *per capita* income, higher levels of

corruption, less democracy and more government intervention, and not with better quality of public and private goods.

Botero *et al.* (2003) examined the regulation of labor markets, finding that regulatory intensity is negatively correlated with wealth and employment rates. Labor regulation is positively correlated with political power of the left and, particularly, with civil (French) and socialist legal traditions.

This kind of analysis, which might be dubbed "comparative political economy" (see Djankov *et al.* 2004), based primarily on differences in legal traditions (Glaeser and Shleifer 2002) and political institutions (Beck *et al.* 2001) has offered new foundations for the comparison of modern economies by pointing to significant factors determining heterogeneity between countries. Work in this vein has explored the relationship between legal systems and corporate governance (La Porta *et al.* 1998), and between legal and political traditions and the "quality of government" as regards its "goodness" for economic development (La Porta *et al.* 1999). Djankov *et al.* (2003b) have also examined the efficiency of legal systems and institutions in facilitating economic activity. Other related work has examined the determinants of corruption (Shleifer and Vishny 1993; Mocan 2004). Barro and McCleary (2003) have explored the relationship between religious traditions, practices and diversity, and economic growth, while Kaufmann and Kraay (2003) have examined the relationship between governance and growth.

It can be argued that variables influencing heterogeneity between countries such as legal traditions, political institutions and ethno-linguistic and religious differences are closely associated with cultural differences between countries. Hence, cultural values, once properly defined and measured, may provide additional insight regarding some of the issues included in the scope of this literature stream, particularly since law, religion and ethnicity do not necessarily translate directly into specific cultural characteristics such as attitudes towards uncertainty and power inequality (even though they may be strongly correlated with them).

A steadily growing stream of literature has been considering the impact of differences in cultural values in the business/management field (see, for example:

Schneider and Meyer 1991; Gelektanycz 1997; and Schneider and Barsoux 2002). Franke *et al.* (1991) found evidence suggesting that differences in economic growth between countries are significantly correlated with cross-country cultural differences. More recent work on the relationship between cultural values and economic policy (Baptista 2004) suggests that the implementation of development policy models "imported" from countries that are closer in terms of cultural values may result in a more rapid adjustment and hence an acceleration of GDPpc growth towards convergence with those countries.

2.3 Risk Aversion and Power in the Field of Cross-Cultural Psychology

In discussing international differences among cultural characteristics, a very promising way is to treat culture within the framework used by cross-cultural psychologists and, in particular, through the concept of "values". Values express the socially shared, abstract ideas about what is good and desirable in society or other bounded cultural group. Values are subjective and transcend specific actions and situations, serving as standards to evaluate behavior, people and events. In his pioneering work in this field, Hofstede (2001) used the concept of values to represent dimensions of cultural variation which, once identified, can be appraised and measured, thus providing a basis for comparison and hypotheses generation.

Theoretical work in cross-cultural psychology reflects the notion that different people and societies face similar issues, goals and challenges. With respect to each issue, Hofstede defined a cultural value "dimension" that reflects ways for members of a society to cope with that problem. Each value dimension actually represents a range of possible stances between two polar ties, or limits, illustrated by each of the four basic problems. Of these, two are suggested to be of particular importance for the analysis in the present paper:

   i.   Power Distance, or Inequality: accepting an unequal distribution of power in social organizations and institutions (such as government, business, universities, and family) as legitimate or illegitimate;

    ii.   Uncertainty Avoidance: feeling uncomfortable or at ease in risky, unstructured, uncertain or ambiguous situations, particularly regarding the future, and hence valuing or devaluing beliefs (religion) and institutions (government) that provide certainty and conformity.

A society's institutional design can be perceived as reflecting a trade-off between the objective of controlling disorder, which pushes toward greater government intervention, and the goal of controlling the abuses of state discretion, which pushes against such intervention. Djankov *et al.* (2004) argue that the four common strategies of institutional control, namely private orderings (self-regulation), private litigation, government regulation, and state ownership, can be viewed as points on an institutional possibility frontier, ranked in terms of increasing state powers, being associated with progressively diminishing social costs of disorder and progressively rising social costs of state intervention. Different societies will display different preferences towards institutional design and control. The amount of power inequality inherent in a society is likely to be embedded in its institutional control practices. Societies with greater acceptance of power inequality are likely to rely more on stronger forms of control such as regulation and state ownership.

Since Knight's (1921) work, it has become common usage in the social sciences to distinguish between risk and uncertainty. Uncertainty is a basic fact of life, related to the occurrence of unexpected, unique events such as the advent of radical innovations or changing consumer preferences (Wennekers *et al.* 2003). Risk can be seen as a special case of uncertainty, related with specific, unpleasant events such as delays in the development of a new product or the insolvency of debtors. Unlike the wider concept of uncertainty, risk is often expressed as a percentage or probability, based on past observations of specific phenomena. Measures of risk can then be weighed against measures of opportunity and reward. Uncertainty avoidance as a society's cultural trait is then strongly associated with personal attitudes towards risk. Even though the individual degree of risk aversion might vary widely within a society, all individuals in that society should respond to a collective level of "mental programming" (Hofstede 2001) that is manifested in their attitudes towards uncertain situations. Individuals in societies displaying greater uncertainty avoidance look for

structure in their institutions in order to make events clearly interpretable and predictable. This structure is often provided by greater regulation.

Cross-cultural psychology studies use questionnaires to elicit participants' evaluations of the various values hypothesized by theory. Questionnaires must cover a sample of a large number of different cultures/countries, in order to verify that value types are truly universal. Substantial samples are needed in each country to yield reliable estimates of national cultural orientations. Hence, representative surveys of cultural values covering a significant amount of countries are rare and costly.

Following Hofstede, other approaches to the measurement of cross-country cultural differences based on the concept of cultural values have been proposed, the most acknowledged being probably the one by Inglehart (1997). Still, Hofstede's approach remains unique in its approach to cultural values more directly associated with the working environment and economic performance.

3.   Hypotheses Formulation

In a large degree, regulatory legislation and public administration systems are the result of historical determinism associated with cultural as well as legal and political tradition. Different institutional and legal arrangements represent alternative modes of dealing with market failures and which may be appropriate in different circumstances (Glaeser and Shleifer 2002, 2003). In order to shed some light on these relationships, a series of hypotheses are formulated, seeking to encompass the main findings of the literature streams reviewed in the previous Section as they apply to entry regulation. Testing these hypotheses should bring out correlations between the intensity of entry regulation and variables associated with countries' wealth, legal tradition, political institutions and governance, as well as the general culture-based attitudes towards risk and uncertainty and power distance, or inequality.

Djankov *et al.* (2002) and Botero *et al.* (2003) have found negative correlations between GDPpc and the regulation of both entry and labor. This is consistent with the suggestion that public choice theories of regulation provide a better explanation

of entry regulation than public interest theories do. Countries with different levels of economic development should adopt different regulatory structures. If more regulation is not associated with greater efficiency, then:

Hypothesis I: there should be a significantly negative correlation between measures of entry regulation and countries' wealth.

Countries with different legal traditions use different "institutional technologies" for social control of business (Djankov *et al.* 2004). Common law countries such as the U.K., Canada, the U.S.A. and Australia tend to rely more on markets and contracts, while civil law countries such as France, Germany, the Scandinavian and Latin countries, as well as Japan, tend to rely more on regulation and government intervention. In countries that came under the influence of the U.S.S.R., such as Bulgaria, Poland and the Czech Republic are still likely to show traces of socialist law, where regulation and government intervention were manifest. One can therefore predict that:

Hypothesis II: countries with a common law tradition should display significantly less entry regulation than other countries.

Public choice theories of regulation suggest that politicians and bureaucrats are likely to use regulation to obtain benefits in the form of, among others, corruption payments and campaign contributions, while incumbents may use entry regulation to protect abnormal (monopolistic or oligopolistic) rents. These views suggest that one should expect greater regulatory intensity from countries where checks and balances systems controlling political power are less numerous and the perceptions regarding government quality and the control of corruption are lower. Moreover, countries with more regulations usually display a greater weight of unofficial, unregulated economic activities. This leads to the formulation of the following hypotheses:

Hypothesis III: there should be a significantly negative correlation between measures of entry regulation and measures of the separation of powers between different political institutions (divided government).

Hypothesis IV: there should be a significantly negative correlation between measures of entry regulation and perceptions of government effectiveness, regulatory quality and control of corruption.

Hypothesis V: there should be a significantly positive correlation between measures of entry regulation and estimates of the weight of the unofficial economy on countries' GDP.

The amount of power inequality that a society is willing to accept should affect the way its political institutions design and implement regulatory policies. If there is a greater degree of power inequality inherent in a society's institutions, laws, rules and traditions, the greater should be the incentive and the ability of public authorities to forestall change and preserve the current socio-economic structure; hence, the regulatory burden on new firms should be greater:

Hypothesis VI: there should be a significantly positive correlation between measures of entry regulation and a society's acceptance of power inequality, or power distance.

Different attitudes towards risk and uncertainty will affect the way societies perceive the changes associated with greater degrees of innovation and firm turnover usually brought about by higher levels of new firm entry (see Caves 1998 for a review on the issue of firm entry and mobility). Societies that are more inclined to avoid uncertain outcomes should regulate entry more, hence:

Hypothesis VII: there should be a significantly positive correlation between measures of entry regulation and a society's tendency to risk aversion, or uncertainty avoidance.

Furthermore, being intrinsic to each society, cultural variables may act as moderators of the correlations observed between measures of entry regulation and other variables, *i.e.* one should expect a significant interaction between cultural and economic, legal and political variables, making the relationship between entry regulation and the latter variables dependent on the values of the cultural variables. This leads to a final hypothesis:

Hypothesis VIII: the correlation between measures of entry regulation and economic, legal and political variables should depend significantly on the values assumed by the measures of risk aversion/uncertainty avoidance and power inequality/distance.

4.   Data Used in the Study

In order to test the hypotheses formulated in the Section above, the present study assembled a data set originating from a variety of sources. Data on entry regulation was assembled and reported by Djankov *et al.* (2002) and refers to 1999.[2] It records the number of administrative procedures required of new entrants, as well as the time and the cost of following these procedures, in a cross section of 85 countries.

The data describe legal requirements that need to be met before a business can officially open its doors, the official cost of meeting these requirements, and the minimum time it takes to meet it. For concreteness, data collection focused on a "standardized" new venture, which has the following characteristics:

 i.   it performs general industrial or commercial activities;

 ii.   it operates in the largest city in the country (by population);

 iii.   it is exempt from industry-specific requirements (including environmental ones);

 iv.   it does not participate in foreign trade and does not trade in goods that are subject to excise taxes (such as liquor and tobacco);

 v.   it is a limited liability company with a capital which is the higher of the minimum capital required for the particular type of business or 10 times the country's GDPpc for 1999;

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[2] A comprehensive version of the data set, including detailed information on the nature of entry regulation procedures for each country and on how specific data collection and assembly problems where dealt with can be found in: http://post.economics.harvard.edu/faculty/laporta/papers/data.pdf.

vi.   it has between 5 and 50 employees one month after starting operations, all of whom are nationals;

vii.   it has a turnover of up to 10 times its start-up capital;

viii.   it rents its land and business premises and does not qualify for investment incentives.

Specifically, the present study considers two variables: the number of official procedures required (NPROC) and official time (TIME). The data collected by Djankov *et al.* (2002) include no specific measures for extra delays due to corruption and administrative inefficiencies that would further raise the cost of entry.

Djankov et al. (2002) also report a measure of the cost of fulfilling all regulatory procedures as a percentage of GDPpc. However, the correlation between this variable and both NPROC and TIME (not reported here) is quite low. It is suggested that this variable may be a relatively poorer measure of the burden of entry regulation on entrepreneurs than NPROC and TIME.

TIME seems to increase at a higher rate than NPROC. This suggests that increasing the number of entry regulation procedures increases the time taken to complete those procedures exponentially, even when such delays are not associated with corruption practices and are just a result of greater demands on both entrepreneurs and public administration officials. This fact serves as an extra motivation to examine the relationship between entry procedures and public perceptions of governance and regulatory quality, and the way it may me mediated by cultural variables (in particular, the acceptance of power inequality). Histograms depicting frequency distributions for both variables (not reported here) suggest that both variables are normally distributed for the present data set.

The data on entry regulation procedures is coupled with data on national cultural value scores associated with Hofstede's work. Using Hofstede's terminology, data on cultural value scores focus on power distance (PDI) – the acceptance of power inequality in society – and on uncertainty avoidance (UAI) – risk aversion.

The cultural value scores reported by Hofstede (2001) result from a project which originated as an audit of company morale among the employees of IBM Corporation, eventually surveying over 117,000 respondents in 50 countries in the period from 1967-73. From the original, detailed questionnaires, multivariate statistical techniques such as multi-dimensional scaling and factor analysis yielded numerical measures representing the average orientation among national culture members towards the values targeted by each question in the survey, allowing for the detection and quantitative measurement of the value dimensions that discriminate among cultures.

Hofstede's work has since gone through several updates that have enlarged the number of nations covered and considered additional cultural value dimensions such as the need/propensity to plan for the future. However, as more cultural value dimensions are considered on the basis of the same type of questionnaire data, the probability of significant collinearity between the scores for different dimensions is likely to increase, thus making empirical analysis based on the scores less reliable. Even though Hofstede's work has endured criticism mostly from scholars outside the economics, business and psychology fields (see, for instance, Gernon and Wallace 1995; and Jackson 1997), subsequent studies such as those of Franke (1987) and Bond (1988) have shown significant correlations between the cultural factors or measures found and Hofstede's value dimensions.

Linking observations from the two aforementioned sources leads to the assembly of a data set comprising 53 observations (countries). This data set does not include African and Middle Eastern countries, but still provides a reasonable cross-section of cultural variables and approaches to entry regulation.

One important methodological issue should be addressed at this juncture: the cross-sectional nature of the data and the methodology adopted in the present study – testing a set of hypotheses encompassing the findings of the more relevant literature – lends itself naturally to the use of multiple regression analysis. Simple multiple regression (ordinary least squares) procedures should be appropriate for testing the

hypotheses formulated in the previous section, including that regarding interaction effects between cultural scores and other variables (see Jaccard and Turrisi 2003).

However, most of the data used in the present study is truncated in the sense that the construction of indices regarding regulatory procedures, cultural value scores and perceptions of governance quality leads to values that are always positive. This issue could be dealt with through the use of more complex econometric methodologies such as logistic regression. However, this would shift focus from hypotheses testing, particularly by making the interpretation of interaction effects between variables more difficult. An alternative way to deal with this issue is to perform a simple transformation on the data, through mean centering. This transformation (making the mean of each transformed variable equal to zero) allows for the use of simple linear regression and facilitates the interpretation of interaction effects.

Table I displays a brief variable description plus the variables' descriptive statistics. Mean centering has been performed whenever the reported mean equals zero.

In order to control for the relationship between economic development and entry regulation levels, data on each country/geographical area *per capita* GDP (GDPpc) was obtained from the World Bank's World Development Indicators[3] for 1999 – the same year for which the entry regulation data was collected.

The correlation between regulatory intensity and legal tradition is tested using data regarding legal origin, which identifies the legal origin of the Company Law or Commercial Code of each country. There are five possible origins: English common law; French Commercial Code (French civil law); German Commercial Code (German civil law); Scandinavian Commercial Code (Scandinavian civil law); and socialist/communist laws. Data was obtained from La Porta *et al.* (1998). Two dummy variables were constructed: the first – LOUK – assumes the value one for English common law countries, and zero for all other countries; the second – LOSOC – assumes the value one for socialist/communist law countries and zero for

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[3] www.worldbank.wdionline.com.

all others. Hence, regression coefficients for these variables will estimate the variation in regulatory intensity that results from a country having common law, or socialist law, when compared with civil law countries.

In order to test the hypotheses regarding the relationship between the extent of entry regulation and the limits to executive political discretion, a measure of the level of checks and balances in each country is required. Data regarding this variable was obtained from the World Bank Database of Political Institutions (DPI). This database is analyzed at length in Beck *et al.* (2001) and covers 177 countries over 21 years, 1975 – 1995. Among the variables introduced in the DPI data set are several measures of checks and balances, political tenure, and stability; identification of party affiliation with government or opposition; and fragmentation of opposition and government parties in legislatures.

The variable selected to represent the pervasiveness of checks and balances throughout the political system measures the level of "divided government" (DIVGOV), *i.e.* the probability that two randomly chosen deputies will belong to a different party in a given year. Hence, it will take the value zero if there are no opposition party seats. This variable is measured as the average from 1975 through 1995.

In order to examine the relationship between regulatory intensity and public perceptions of the quality of public governance, in regard to political stability, regulatory effectiveness and control of corruption, the present paper turns to a different World Bank data set – that of Governance Indicators.[4] The creation of this data set is described extensively in Kaufmann *et al.* (2004). These authors present estimates of six dimensions of governance covering 199 countries and territories for four time periods: 1996, 1998, 2000, and 2002. These indicators are based on several hundred individual variables measuring perceptions of governance which are assigned to categories capturing key dimensions of governance. An unobserved components model is then used to construct six aggregate governance indicators: voice and accountability; political stability; government effectiveness; regulatory

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[4] www.worldbank.org/wbi/governance/govdata2002/.

quality; rule of law; and control of corruption. Point estimates of the dimensions of governance as well as the margins of errors are presented for each country for the four periods.

Even though these indicators reflect different realities of public governance, point estimates (and their averages over the four time periods) tend to be highly correlated with each other.[5] Hence, there is little point in using more than one of them to account for perceptions of the quality of public governance, since this would lead to multicollinearity. The present paper uses the regulatory quality indicator (REGQLT) as a measure of good governance. Its high correlation with corruption control indices[6] means that conclusions can also be drawn regarding the association between regulatory intensity and corruption.

Finally, in order to examine the correlation between entry regulation and the extent of the unofficial economy, estimates of the size of the shadow economy as a percentage of GDP (varying time periods) were obtained from Djankov et al. (2002)[7].

The variables regarding the levels of risk aversion/uncertainty avoidance and the acceptance of power inequality/distance assume that cultural values are homogeneous across entire countries. Homogeneity might be conditioned by the diversity in ethnic origin and social upbringing within the same country. Hence, it was deemed relevant to include in the regressions a control variable that would reflect "ethnolinguistic fractionalization". This variable was obtained from La Porta *et al.* (2003) and represents the average value of different indices of ethnolinguistic variety.[8] The more significant of these indices are: the probability that two randomly selected people from a given country will not belong to the same ethnolinguistic

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[5] For instance, the correlation between the values of the regulatory quality and the control of corruption indices (averaged over the four observations) for the sample of 53 countries used in the present work is 92,4%. The correlation between the regulatory quality and government effectiveness indices is 92.1%.

[6] The high correlation levels between regulatory quality and control of corruption reported above remain if corruption perceptions measures obtained from other sources – such as the corruption perceptions index from Transparency International (http://www.transparency.org) – are used.

[7] These authors' estimates were computed mainly from data in Schneider and Enste (2000).

[8] The methodology for the construction of the data reported by these authors can be found in Easterly and Levine (1997).

group; probability of two randomly selected individuals speaking different languages; percent of the population not speaking the official language; and percentage of the population not speaking the most widely used language.

However, it was verified that estimation results were not significantly changed by the inclusion of this last variable. In fact, not only did the ethnolinguistic fractionalization variable have an insignificant effect on entry regulation, but its inclusion in the regressions did not affect the significance and signs of the two cultural variables (UAI and PDI). Hence, it was decided to omit this variable from the reported results.

5.   Estimation Methodology and Results

5.1   Methodological Issues

For estimation of the correlation between the intensity of entry regulation and the different variables hypothesized, NPROC and TIME are used as dependent variables. Estimation was done using ordinary least squares. Whenever heteroskedascity was detected, estimation of covariance matrix was corrected using White's (1980) procedure.

Two methodological issues need to be addressed beforehand. First, there is the question of correlation between explanatory variables, particularly as regards the relationship between country wealth, as measured by LNGDPPC, and variables representing governance quality, political checks and balances, law origin and cultural attitudes towards power inequality and risk/uncertainty. **Table II** displays the correlations between all the explanatory variables used the study. There is evidence of some negative correlation between wealth and the acceptance of power inequality (about 51%), as well as of positive correlation between wealth and perceptions of regulatory quality (also about 51%). Acceptance of power inequality is therefore negatively correlated with perceptions of regulatory quality: these two variables display the highest (in absolute terms) correlation coefficient among all explanatory

variables: -58%. This finding suggests that where individuals accept a greater distance from political decision-making, such distance may lead to a predisposition to judge governance quality negatively. However, since greater power inequality is also correlated with lower levels of income, such judgment may be generally correct.

It is also worth mentioning the existence of a negative correlation between uncertainty avoidance in societies and the existence of an English common law tradition (-51%), suggesting that greater reliance on market mechanisms and courts and less reliance on government regulation is usually associated with a culture of less risk aversion. In general, explanatory variables do not appear to be seriously correlated, so collinearity should not affect the results significantly.

The nature of the relationships between Hofstede's (2001) cultural value dimensions (in particular individualism) and *per capita* income, suggests that cultural values tend to change as nations get richer, leading to the claim that culture convergence is part of economic growth[9]. However, for the specific set of countries used in the present study, there is no significant evidence of convergence in economic growth[10]. Hence, it is unlikely that cultural values (particularly the ones regarding risk aversion and power inequality) have converged much amongst our sample of countries, at least as a result of convergence in economic growth.

It is submitted that, even though the cultural variables reflecting risk aversion and power inequality correspond to indices based on data which was mostly collected about three decades ago, should not have considerable impact in our results. On one hand, the data has gone through considerable updates since then; on the other hand, the lack of economic convergence suggests that cultural values regarding risk aversion and power inequality are unlikely to have converged significantly since.

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[9] See Baptista (2004). Inglehart's (1997) perspective on cultural values is founded on a similar logic: as economic development occurs, post-materialistic values overcome materialistic ones.

[10] A simple regression of *per capita* GDP values for 1999 using as explanatory variable the per capita income in each of the sample countries for 1970 – the median year for the period during which Hofstede's data was collected – results in an insignificant positive regression coefficient, suggesting no evidence of convergence or Granger-type causality (Granger 1969).

A second issue which needs addressing regards causality relationships. Even though causality cannot be extracted from what is in essence cross-section data, it is reasonable to assume that unlike, for instance, the decision to start a new business, the main features of a country's entry regulation system are to a significant extent a result of historical determinism associated as much with economic interests as with legal and political tradition and, therefore, with cultural values. Cultural values should influence regulation regardless of specific moments in time, thus making the present cross-section analysis valid and, in a sense, even advantageous, allowing for some, though very limited, conclusions about causality.

5.2 Results

Table III presents the results of estimation for both NPROC and TIME using all explanatory variables selected to test the hypotheses postulated in Section 3 (Complete Model).

The significant negative coefficients displayed by LNGDPPC, LOUK and REGQLT for both measures of regulatory intensity lend support to hypotheses I, II and IV. However, results do not verify hypothesis III, suggesting that the pervasiveness of checks and balances in the political system is not significantly associated with the intensity of entry regulation[11]. Hypothesis V, regarding a positive relationship between regulatory intensity and the weight of the shadow economy is supported when the dependent variable is NPROC; however, the UNOFEC variable has no significant effect on TIME.

Results show that the degrees of a country's risk aversion and acceptance of power inequality both have a significant positive correlation with NPROC, thus confirming Hypotheses VI and VII. However, as regards TIME, only hypothesis VI is supported: the acceptance of power inequality is associated with longer times to fulfill the required entry regulation procedures – likely due to a lower efficiency of

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[11] Similar results were achieved when using other variables to account for checks and balances, such as the number of political agents with veto power and the longest tenure of a veto player, also obtained from the DPI.

public institutions associated with power distance,[12] while longer waiting times may be associated with higher uncertainty and risk and, therefore, are not favored by risk averse societies.

5.3 Interaction Effects

In order to examine interaction effects between the cultural variables - risk aversion and acceptance of power inequality – and other relevant variables within the framework of linear regression, the present study conceptualizes interaction effects in terms of moderated relationships (see Jaccard and Turrisi 2003). Given a dependent variable Y, an explanatory variable X and a moderator variable Z, an interaction effect is said to exist when the effect of the explanatory variable on the dependent variable (regression coefficient) differs depending on the value of the moderator variable Z.

Assuming a simple linear model for the relationship between the dependent variable Y and variables X and Z:

$$Y = a + b_1X + b_2Z + e \tag{1}$$

Equation 1 displays the simple "main effects" regression model where e is the normally distributed residual. If one assumes that the relationship between Y and X is moderated by Z through a linear relationship[13], this means that:

$$b_1 = b_0 + b_3Z \tag{2}$$

According to this formulation, for every unit change in Z, the value of the regression coefficient b_1 is assumed to change by b_3 units. Substituting equation (2) in equation (1) we have:

$$Y = a + (b_0 + b_3Z)X + b_2Z + e \tag{3}$$

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[12] As pointed out earlier, the correlation coefficient between regulatory quality and power distance is high and negative (-58%), meaning that, since other governance quality indicators such as government effectiveness, voice and accountability and control of corruption are all positively and very significantly correlated with regulatory quality, there will also exist a negative relationship between such indices and power distance/inequality.
[13] Evidently, the interaction or moderating effect does not have to assume a linear form. However, this assumption means that the new model with interaction effects will remain linear.

Which finally yields:

$$Y = a + b_0X + b_2Z + b_3XZ + e \tag{4}$$

Equation 4 displays the interaction regression model in which the effect of an explanatory variable X on the dependent variable Y is said to be a linear function of a moderator variable Z.

Of course, the model in equation (4) can be generalized in order to include multiple interactions in which the effects of several explanatory variables (country wealth, governance quality, legal origin, etc.) on a dependent variable (regulatory intensity) are moderated by another variable (power distance/inequality or risk aversion/uncertainty avoidance). In order to analyze the significance of interaction effects, one can simply estimate the main effects model (without the product terms) and the interaction model (with the product terms) through ordinary least squares and compare their respective performances through a simple F test (see Jaccard and Turrisi 2003).

In order to simplify the analysis, only the variables found to be significant in the complete model are now included in the main effects models. This means that, for the dependent variable TIME, only interaction effects for PDI are examined, since UAI was found not to be significantly correlated with that dependent variable.

Table IV displays the results of main effects and interaction effects models for the dependent variable NPROC. Interaction effects are examined separately for PDI and UAI. Results did not change considerably when considering product terms for both variables together. Hence, the analysis of the interaction effects which follows focuses on the results for the models considering interaction effects for the two variables separately – **Table V** reports the results of the main effects and interaction models for NPROC considering interaction effects for both PDI and UAI simultaneously. Results of main effects and interaction effects models for the dependent variable TIME, considering PDI as the moderator variable, are also reported on **Table V**.

In all the cases under analysis, the F test comparing the main effects model with the corresponding interaction model including product terms rejects the null hypothesis that the two models are equal[14]. Hence, hypothesis VIII formulated in Section 3 of this paper is supported by the analysis.

Interpretation of the coefficients estimated for the interaction models is fairly straightforward. Keeping in mind equation (4), the total effect of the explanatory variable X on the dependent variable Y is given by:

$$b_0X + b_3XZ = (b_0 + b_3Z)X \qquad\qquad (5)$$

Hence, the predicted variation in the dependent variable Y when X increases by one unit is given by $b_0 + b_3Z$, *i.e.* the effect of X on Y will depend not just on the two regression coefficients, but also on some parameterized value of Z. If Z=0, the effect of X on Y will be given by b_0. This result is particularly interesting since the sample average for the two moderator variables – PDI and UAI – is zero, since the cultural value scores on power inequality/distance and risk aversion/uncertainty avoidance were mean centered. It is therefore quite easy to calculate the value for the total interaction effect of the significant explanatory variables on NPROC and TIME. Table **VI** presents the effects calculated for the relevant (significant) cases considering three possible values for PDI and UAI: the mean (zero) and plus or minus one standard deviation.

Departing from the value of the interaction effect when PDI equals its mean (zero), it is possible to verify that the acceptance of power inequality has a negative moderator effect on country income: the negative correlation between LNGDPPC and both measures of the intensity of entry regulation – NPROC and TIME – becomes weaker when PDI increases and stronger when PDI decreases. The PDI variable has the opposite moderator effect on perceptions of governance quality: the negative correlation between REGQLT and both NPROC and TIME becomes stronger when the acceptance of power inequality/distance in society increases. The moderator effect of risk aversion/uncertainty avoidance on the legal origin variable

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[14] F tests results are not reported here. The values for the R^2 and the F statistic are presented for each model in Tables IV and V.

corresponding to English common law is negative: the negative correlation between LOUK and NPROC is weakened when UAI increases.

6. Concluding Remarks

The present paper has aimed to test a series of hypotheses regarding the correlation between entry regulation in different countries and economic, political and cultural variables. The hypotheses tested were derived from the growing literature on comparative political economy and from views on how a society's risk aversion and acceptance of power inequality in its political processes and institutions – variables intimately associated with fundamental cultural values – may contribute to shape a country's regulatory system.

Evidence is found in support of the following hypotheses:

i.   *there should be a significantly negative correlation between measures of entry regulation and countries' wealth;*

ii. *countries with a common law tradition should display significantly less entry regulation than other countries;*

iv. *there should be a significantly negative correlation between measures of entry regulation and perceptions of government effectiveness, regulatory quality and control of corruption;*

v.   *there should be a significantly positive correlation between measures of entry regulation and estimates of the weight of the unofficial economy on countries' GDP;*

vi. *there should be a significantly positive correlation between measures of entry regulation and a society's acceptance of power inequality, or power distance;*

vii. *there should be a positive correlation between measures of entry regulation and a society's tendency to risk aversion, or uncertainty avoidance; and*

viii. *the correlation between measures of entry regulation and economic, legal and political variables should depend significantly on the values assumed by the*

measures of risk aversion/uncertainty avoidance and power inequality/distance.

This last hypothesis was examined using regression models including linear interaction effects taking the two culture-based variables – risk aversion and acceptance of power inequality – as moderator variables. It was found that increasing power inequality in societies tends to reinforce the negative correlation between regulatory intensity and perceptions of good public governance, probably because individuals feel greater distance from decision making processes. However, increasing power inequality in societies tends to reduce the negative correlation between a country's per capita income and the intensity with which it regulates entry. This means that a country with greater levels of power inequality should have stricter regulations for new entrants than a country with similar wealth but lower power inequality.

The paper also finds that low risk aversion is strongly associated with the prevalence of English common law. While countries with this legal tradition tend to have less entry regulation, this effect is reinforced when the society's propensity to avoid risk is lower.

The empirical work presented finds that, regardless of economic development levels, there is a significant correlation between cultural heterogeneity amongst countries and entry regulation practices as regards both the number of procedures required and the time to complete those procedures. One can then argue that cultural values which are embedded in different societies, may play a part in determining the way in which politicians, bureaucrats and private interests (incumbents and entrepreneurs) interact to mold entry regulation. Such influence is likely to occur, at least in part, through the gradual shaping of legal political and governance systems.

Greater acceptance of inequality of power within society – and therefore greater reliance on government institutions – is connected with higher levels of regulation. In addition, reduced propensity to risk-taking – leading to the need to avoid uncertain outcomes such as the ones that may result from high levels of entry and market re-structuring – also leads individuals to rely more on government. Higher levels of

entry regulation thus appear to emerge as a response from government institutions (whether the power is exerted mostly by politicians or bureaucrats) to societies' needs deriving from basic cultural values.

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Table I - Variable Definitions and Descriptive Statistics

Variable	Definition	Descriptive Statistics[15]	Data Source
NPROC	Number of procedures that a start-up has to comply with in order to obtain legal status (mean centered)	0 4,417 53	Djankov *et al.* (2002)
TIME	The time it takes to obtain legal status to operate a firm, in business days (mean centered)	0 30,555 53	Djankov *et al.* (2002)
PDI	Power Inequality/Distance Index (mean centered)	0 22,817 53	Hofstede (2001)
UAI	Risk Aversion/Uncertainty Avoidance Index (mean centered)	0 24,700 53	Hofstede (2001)
LNGDPPC	Natural Logarithm of Per capita Gross Domestic Product for 1999	9,078 1,380 53	Computed from World Bank World Development Indicators Database
LOUK	Dummy Variable Assuming the Value 1 for Countries with English Common Law Origin and 0 Otherwise	0,264 0,445 53	La Porta *et al.* (1998)
LOSOC	Dummy Variable Assuming the Value 1 for Countries with Socialist/Communist Law Origin and 0 Otherwise	0,170 0,379 53	La Porta *et al.* (1998)
DIVGOV	Probability that Two Randomly Chosen Deputies will Belong to a Different Party in a Given Year (1975-95)	0,564 0,230 53	World Bank Database of Political Institutions
REGQLT	Public Perceptions of the Incidence of Market-unfriendly Policies, Inadequate Supervision and Burdens Imposed by Excessive Regulation – Increases as these Perceptions Decrease (mean centered).	0,747 0,672 53	World Bank Database of Governance Indicators
UNOFEC	Estimates of the Size of the Shadow Economy as a Percentage of GDP (varying time periods)	26,255 12,971 53	Djankov *et al.* (2002)

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[15] The values presented are the mean, standard deviation and number of observations, in this order.

Table II – Variable Correlation Matrix

	PDI	UAI	LNGDPPC	LOUK	LOSOC	DIVGOV	REGQLT	UNOFEC
PDI	1,000	0,194	-0,507	-0,253	0,343	-0,229	-0,580	0,508
UAI	0,194	1,000	-0,102	-0,509	0,085	0,280	-0,112	0,384
LNGDPPC	-0,507	-0,102	1,000	0,072	-0,483	0,367	0,512	-0,532
LOUK	-0,253	-0,509	0,072	1,000	-0,271	-0,135	0,158	-0,142
LOSOC	0,343	0,085	-0,483	-0,271	1,000	-0,442	-0,333	0,002
DIVGOV	-0,229	0,280	0,367	-0,135	-0,442	1,000	0,168	0,050
REGQLT	-0,580	-0,112	0,512	0,158	-0,333	0,168	1,000	-0,459
UNOFEC	0,508	0,384	-0,532	-0,142	0,002	0,050	-0,459	1,000

Table III – Regression Results: Complete Model[16]

	NPROC (OLS)	TIME (OLS)
Number of Observations	53	53
R^2	76,36%	63,69%
F	**17,61**	**10,37**
Constant	**15,138** (0.001)	**8,240** (0,028)
LNGDPPC	**-0,851** (0,031)	**-3,508** (0,036)
LOUK	**-3,814** (0.000)	**-19,730** (0,001)
LOSOC	-2,060 (0,149)	-2,301 (0,826)
DIVGOV	-1,217 (0,509)	-11,133 (0,398)
REGQLT	**-2,433** (0,001)	**-22,570** (0,000)
UNOFEC	**0,113** (0,007)	0,462 (0,263)
PDI	**0,065** (0,003)	**0,384** (0,016)
UAI	**0,057** (0,003)	0,013 (0,929)

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[16] Values between parentheses are p-values. Coefficients in bold are significant at the 95% confidence level.

Table IV – Regression Results: Main Effects and Interaction Models[17]

	NPROC (OLS)			
R^2	66,98%	82,94%	66,77%	81,62%
F	19,07	32,54	18,89	32,05
Models	*Main Effects with PDI*	*Interaction with PDI*	*Main Effects with UAI*	*Interaction with UAI*
Constant	**7,312** (0,045)	**14,23** (0,002)	**10,77** (0,000)	**8,528** (0,022)
LNGDPPC	**-0,378** (0,017)	**-1,131** (0,008)	**-0,665** (0,012)	**-0,408** (0,038)
LOUK	**-4,572** (0,000)	**-4,799** (0,000)	**-3,716** (0,000)	**-5,245** (0,000)
REGQLT	**-2,171** (0,004)	**-1,531** (0,006)	**-3,071** (0,000)	**-3,613** (0.000)
UNOFEC	**0,036** (0,027)	0,047 (0,063)	**0,053** (0,049)	0,042 (0,069)
PDI	**0,059** (0,010)	0,405 (0,122)		
UAI			**0,050** (0,008)	0,023 (0,863)
PDIxLNGDPPC		**0,055** (0,025)		
PDIxLOUK		0,001 (0,979)		
PDIxREGQLT		**-0,072** (0,013)		
PDIxUNOFEC		0,008 (0,971)		
UAIxLNGDPPC				0,016 (0,318)
UAIxLOUK				**0,093** (0,035)
UAIxREGQLT				-0,032 (0,219)
UAIxUNOFEC				-0,001 (0,355)

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[17] The number of observations is 53 for all models. Values between parentheses are p-values. Coefficients in bold are significant at the 95% confidence level.

Table V – Regression Results: Main Effects and Interaction Models[18]

Models	NPROC (OLS)		TIME (OLS)	
R²	78,35%	91,29%	57,63%	69,32%
F	25,06	41,79	12,79	26,97
Models	*Main Effects with PDI and UAI*	*Interaction with PDI and UAI*	*Main Effects with PDI*	*Interaction with PDI*
Constant	**8,957** (0,001)	**10,40** (0,029)	**17,61** (0,485)	**18,94** (0,016)
LNGDPPC	**-0,466** (0,044)	**-0,700** (0,002)	**--4,081** (0,034)	**-4,490** (0,029)
LOUK	**-3,171** (0,000)	**-4,186** (0,000)	**-18,979** (0,020)	**-17,599** (0,028)
REGQLT	**-2,333** (0,002)	**-2,537** (0,000)	**-17,902** (0,001)	**-18,084** (0.044)
UNOFEC	**0,079** (0,041)	0,057 (0,158)		
PDI	**0,062** (0,021)	0,181 (0,308)	**0,252** (0,035)	0,033 (0,953)
UAI	**0,053** (0,000)	0,044 (0,701)		
PDIxLNGDPPC		**0,033** (0,050)		**-0,059** (0,041)
PDIxLOUK		0,022 (0,469)		0,351 (0,386)
PDIxREGQLT		**-0,094** (0,000)		**-0,186** (0,029)
PDIxUNOFEC		0,001 (0,594)		
UAIxLNGDPPC		0,019 (0,140)		
UAIxLOUK		**-0,074** (0,039)		
UAIxREGQLT		**-0,039** (0,218)		
UAIxUNOFEC		-0,001 (0,400)		

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[18] The number of observations is 53 for all models. Values between parentheses are p-values. Coefficients in bold are significant at the 95% confidence level.

Table VI – Total Interaction Effects of PDI and UAI on NPROC and TIME

Explanatory Variable	Dependent Variable	Value for the Moderator Variable PDI	Value for the Moderator Variable UAI	Total Interaction Effect
LNGDPPC	**NPROC**	*+One Std. Dev.*		0,127
		Mean		-1,131
		-One Std. Dev		-2,389
LNGDPPC	**TIME**	*+One Std. Dev.*		-3,144
		Mean		-4,490
		-One Std. Dev		-5,836
REGQLT	**NPROC**	*+One Std. Dev.*		-3,166
		Mean		-1,531
		-One Std. Dev		0,104
REGQLT	**TIME**	*+One Std. Dev.*		-22,329
		Mean		-18,084
		-One Std. Dev		-13,839
LOUK	**NPROC**		*+One Std. Dev.*	-2,938
			Mean	-5,245
			-One Std. Dev	-7,551