NATIONAL CULTURE AND INCOME INEQUALITY: A CROSS-COUNTRY ANALYSIS

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ABSTRACT

This paper examines the role of individualism-collectivism, one of the most widely studied dimensions of national culture, in income distribution across countries. Our empirical analysis suggests that people in countries with high collectivism tend to tolerate more income inequality than people from individualistic countries. The paper identifies the possible reasons as to why collectivism may result in greater inequality and how governmental policies can lessen the impact of unequal income distribution. The paper concludes with directions for future research.

Keywords: Individualism-collectivism, income inequality, income redistribution, ethnic fractionalization.

I. INTRODUCTION

Long a domain of anthropologists and sociologists, culture, as a topic of inquiry did not garner much attention from business researchers until the publication of seminal work of Hofstede (1980). Since then, a large number of studies involving culture as an explanatory variable have been published in every area of management, marketing, and international business. In a review of work that have used Hofstede's cultural classification published over a period of 25 years, Kirkman, Lowe and Gibson (2006) show that cultural dimensions identified by Hofstede has variously been studied as antecedent, moderating and mediating variables in explaining different types of human phenomenon. While researchers in almost every business disciplines have embraced culture as an important factor for explaining different aspects of firm and managerial

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behavior , as evidenced from the number and type of published studies involving culture (Taras, Kirkman and Steel 2010), economists mostly ignored culture as a variable until recently. This however changed in the past ten years. A number of economists have studied culture and attempted to link it with economics (Fernandez, 2008), institutions (Tabellini, 2008; Alesia and Giuliano, 2013; Gorodnichenko and Roland, 2015), with long-term economic growth rate, wealth of nations as well as democracy (Gorodnichenko and Roland, 2015, 2010).

The focus of this paper is income inequality, a topic that has long been a matter of concern among economists, sociologists, and policy makers. A large body of literature can be found on the causes and effects of income inequality in human societies. Researchers have examined a number of factors - both internal such as education (xxx), economic policy of the government (Picketty 2013), political environment (Mullen, 2013), trade policy (Winters, McCulloch and McKay, 2004) as well as external such as colonization (Charles-Coll, 2013) , globalization (Meschi and Vivarelli, 2007; Ravallion, 2004; Kentor, 2001), technology (Jaumotte, Lull and Papageorgiou, 2008), etc., to explain the causes of income inequality.

While much has been written about the causes and consequences of income equality, what is missing from the debate concerning income inequality is the role of culture, if any. While we do find numerous papers examining the role of culture in micro level human phenomena, there is a dearth of studies that link culture to macro-level phenomenon such as income inequality. This paper seeks to partially fill this void by examining if cultural values of a given society have any impact on income distribution in that society. In so doing, this paper focuses on individualism-collectivism dimension of culture, which is one of the most widely studied dimensions of culture and uses the scores reported by Hofstede (1980, 1997, 2001) and Gini-coefficient of countries reported by the World Bank. It should be mentioned here that Gini-coefficient or Gini-Index is a

measure of statistical dispersion that represents income inequality among the population of a given country.

Human societies are characterized by a remarkable variety of beliefs, customs, manners, forms of social organization, rituals, and traditions that people follow in their daily life. The concept of culture was developed by anthropologists to capture the essence of this remarkable diversity (Cohen, 1991). Culture is conceptualized as shared symbols, norms and values of members of a society that Hofstede (1997) labels as "collective programming of mind". National cultural programming leads to a pattern of thinking, feeling, and acting that and may manifest itself in different policies and practices followed in the country. As the "software of human mind" (Hofstede, 1997), culture molds our perception, structures our ideas, shapes our actions, and determines what we choose in our everyday life including meeting, giving, trading, arguing, fighting, persuading, and a implementing policies. The most fundamental component of our national culture consists of our value system, which determines our broad preferences for one set of economic principles over others. Through our values, culture determines what policies we consider as good and bad for the society, beneficial and detrimental to the economic development, fair and equitable for distribution of wealth, and effective and ineffective for economic growth and prosperity. As culture encompasses all aspects of our social life, we argue that culture is not just concerned with the exotic artifacts or rituals of our everyday life, but also with policies that consciously develop and put to practice for managing the economic state of affairs in the country. According Brett and Okumara (1998), cultural institutions provide context for what we do and cultural values and norms provide the members of a societies with schemas for interpreting a situation. Therefore, it can be argued that how income is distributed in a given society is also influenced by the cultural values, norms and mores of that society. Based on the work of Tinsley

& Pillutla (1998), who discuss the notion of "natural selection" in the context of culture and communication, we can argue that those economic policies that fit with cultural values will dominate our national life.

To explore the relationship between culture and income inequality, three plausible explanations can be offered. One view, which is widely shared by many economists, posits that while there may be many causes of income inequality, culture is ***not*** one of them. As Guiso, Sapienza, and Zingales, (2005) explain, most economists view culture as something vague and as such, not a good source of refutable hypotheses. Therefore, culture, in their mind, is not a plausible factor for explaining income inequality within a nation.

A second view on the role of culture in income inequality is that culture plays an important role by affecting government policies on taxation and spending, trade policies, and economic philosophy that would affect income inequality. Therefore, according to this view, culture would have indirect relationship with income inequality.

Yet, a third view could also be offered hypothesizing a direct ***causal relationship*** between culture and income inequality. In this paper, we take this third approach and posit that there is a causal link between culture and income inequality. However, caution should be exercised to avoid endogeneity problem as certain cultural traits and income inequality may reinforce each other. For example, persistent income inequality may lead people to spend in a conservative way, which in turn may affect the cultural norms of a society. To avoid this endogeneity problem, in this paper, we use an *instrumental variable (IV) approach*, which is explained later in the paper.

The paper is organized as follows. Section II further outlines the theoretical underpinnings provided by the literature. Section III discusses the empirical model, data and the empirical results, followed by our concluding remarks in Section IV.

II. THEORETICAL FRAMEWORK

While a large number of frameworks on culture can be found, the framework proposed by Hofstede (1980, 1997, 1998, 2001) is the most widely used model in measuring the impact of culture on a given phenomenon (e.g., see for example, see the review of work that have used Hofstede's framework by Kirkman, Lowe and Gibson (2006). Hofstede's framework enable researchers to classify national cultures for comparison on an *a priori* basis (Schaffer and O' Hara 1995). In this study too, we use Hofstede's framework to develop our hypothesis which is subsequently tested by using income inequality data published by the World Bank, World Penn Table, and the Economic Freedom Index compiled by Gwartney and Lawson (2012).

One of the important dimensions of culture identified by Hofstede is the extent to which people of a given society pursue individualism as opposed to conforming to societal norms. Hofstede labeled this continuum as Individualism versus collectivism. People in an individualistic society value individual initiative, hard work and expect to be rewarded for their diligence for their own benefit. People in an individualistic society care for their immediate family, as opposed to their extended family or clan and lives for himself/herself. People in such societies value personal advancement and are less concerned, as compared to people from the collectivistic societies about redistribution of wealth.

On the other hand, people in collectivistic society care more about their extended family. People tend to be more conformist in such societies and are prepared to make personal sacrifice for collective good of their own community. Collectivistic societies are also characterized by display of loyalty to family, clan, group and community. Through a range of tax policies such as progressive income tax, alternative minimum tax, high sales tax on luxury items, tax deductions for people below certain income levels or living in certain areas of a country, providing subsidies

for a range of services, etc., a government can indeed minimize income gap. As Schwidetzky, Walter and Ericke (2015) show, a social agenda can be found in the tax code of many individualistic countries. It is thus not surprising that such income redistributive measures designed to minimize income inequality are likely to be more common in individualistic countries than in collectivistic countries.

Individualism-collectivism orientation can affect income distribution within a society in myriad ways, some of which are discussed below.

Safety-net: In collectivistic countries, a person in need is expected to be looked after my members of his/her immediate family and then if necessary by the extended family and the clan. However, in individualistic countries, one cannot rely on such support network from the extended family members. Therefore, governments in individualistic countries have developed a range of measures such as pensions on retirement, unemployment insurance, health care etc. that are collectively known as social safety nets. Such measures are often missing in collectivistic countries that exacerbate income inequalities.

In-group vs outgroup orientation: One of the hallmarks of collectivism is the distinction between in-group versus out-group. An *ingroup* refers to a group to with which a person psychologically identifies himself/herself while an *outgroup* is a group with which an individual does not identify himself/herself (Tajfel et al. 1971). This loyalty to one's own group leads to what experts call "in-group orientation" which blocks the entry of outsiders to one's group. As such, it is difficult for an out-group member to "break into" the network of successful people. Such orientation often gives rise to favoritism toward members of the same group, nepotism and even corruption. Consequently, people who are prosperous remain prosperous due to support received from ingroup members whereas people who are less affluent cannot break into the higher economic strata as

they are considered as outgroup members by members of affluent class. As a result, upper mobility is restricted and rich remain rich and poor remain poor with widening gap, with the resultant persistence of income inequality. In the absence of such in-group versus outgroup orientation in individualistic countries, there is greater upper mobility of people in such societies as compared to collectivistic societies.

Inheritance laws: In most societies, properties and assets are passed on to next generation. However, what is remarkable about individualistic societies is that inheritance tax can be very high and heirs do not necessarily inherit entire property of their parents. On the other hand, in collectivistic societies, properties and other assets stays within families and are not redistributed in the same manner as they are redistributed in individualistic countries. Thanks to favorable tax laws, many rich people in individualistic countries bequeath large part of their properties for philanthropic causes. A large number of private foundations and other charitable bodies can thus be found in individualistic countries that serve people who are less affluent. As a result, there is less income redistribution in collectivistic countries than in individualistic countries.

Access to education: The relationship between higher education and total income in one's lifetime is well established (De Gregorio and Lee, 2002). While public education, often up to a certain level, may be more prevalent in collectivistic countries than in individualistic countries, there is greater access to higher education in individualistic countries. The result is higher education is often available only to a small fraction of people in collectivistic countries, whereas it is widely available to people in individualistic countries. Such disparity in access to education is likely to affect the level of income across different sections of people within the society in collectivistic countries.

Ethnic discrimination: While ethnic discrimination is prevalent in varying degrees almost everywhere in the world, the strong preference for members of in-group as opposed to members of out-group may worsen income inequality in collectivistic countries. Many collectivistic countries may also lack anti-discrimination legal frameworks to protect ethnic minorities.. While many individualistic countries may have positive discrimination laws in support of ethnic minorities (e.g., affirmative action programs in the US), many collectivistic countries have institutionalized discrimination in favor of majority ethnic groups (e.g., Malaysia, Gulf countries etc.). Such policies can improve/worsen income inequality in a country.

Role of institutions: Cultures shape our institutions (Gorodnichenko and Roland, 2015; Alesina and Giuliano, 2013). Graef (1994) have shown that societies with collectivistic values are usually characterized by strong preference for traditions and informal enforcement mechanism. They often lack strong institutions that act as checks and balance to absolute powers in individualistic countries. Strong institutions, aided by transparency in governance that are usually found in individualistic countries, usually have better legal mechanism for enforcing contracts. In collectivistic countries, the lack of institutions and transparency in decision making usually leads to concentration of power in a small section of the people. Such concentration of power, combined with the fact that powers do not always change in regular frequency, may also lead to concentration of wealth among a small group of people.

In view of above discussion, in this paper we hypothesize that **there is a negative (positive) relationship between individualism (collectivism) and income inequality (i.e., the higher the individualism, the lower the income inequality).**

II. EMPIRICAL ANALYSIS AND DISCUSSIONS

The empirical model

Our theoretical framework yields several hypothesis on the effect of culture on the income inequality based on the four dimensions of Hofstede. In this section, we attempt to empirically evaluate these implications of the theory. The following model is estimated:

$$IncIneq_i = CulDimen_i\alpha + X_i\beta + \varepsilon_i, \qquad (1)$$

where $IncIneq_i$ is a measure of the level of income inequality in country i measured by the GINI coefficients of the countries, $CulDimen_i$ is the Individualism-Collectivism dimension for country i, X_i represents the vector of controls and ε_i is the error term.

We first analyze the relationship between income inequality and individualism-collectivism dimension using Ordinary-least square (OLS) methods. However, these results are biased as culture and income inequality are endogenously determined for a country. Thus, we employ an instrumental variable approach to estimate the causal relationship between individualism-collectivism and income distribution. To achieve that we need to find another variable that will be correlated to culture but uncorrelated with the error term ε_i in equation (1). The first condition is called the instrument relevance and the latter is instrument exogeneity. Once such a variable is identified, we can estimate the coefficient of individualism-collectivism (i.e. α_i) in two-stage least squares. At first we regress the scores of individualism-collectivism on the instrumental variable and then in the second stage we regress income inequality on the estimated cultural dimension (individualism-collectivism) from the first stage. The estimated coefficient of the cultural dimension at the second stage will provide a causal relation to income inequality.[2]

[2] For detailed econometric discussion on instrumental variable estimation see Wooldridge 2012.

Data

The data on the income inequality measured by the GINI coefficient come from the World Bank database (WDI online). We collected the most recent GINI coefficients for all the countries. While GINI is not a perfect measure of income inequality (see Mario 2007, Atkinson 1975, Cowell 1995), but it is one of the most widely used measure in literature. GINI measures the inequality of a distribution, a value of 0 expressing total equality and a value of 100 maximal inequality.

We collected the Hofstede's value scores for individualism-collectivism for over 70 countries from his seminal works (1980, 2001). There has been several criticism about these measures such as relevancy of the surveys (Schwartz 1999), cultural homogeneity in a nation (Nasif et al. 1991, Redpath 1997, Dorfman and Howell 1988), measuring culture within a nation's border (McSweeeney 2000), timing of the surveys, using only one company for the surveys, the age of the data, and the number of cultural dimensions, etc. However, several replication studies support Hofstede's work, for example, (Søndergaard 1994) conducted a bibliographical analysis of Hofstede's research. He found that majority of replication studies confirmed Hofstede's predictions.[3] Hofstede (1998, 2001) has written extensively answering these criticism that lead us to adopt his model for using in cross-cultural studies until more sophisticated models are available.

[3] For a detailed discussion on arguments for and against Hofstede's cultural dimensions see Jones 2007.

Table 1: Summary Statistics

Variables	Observations	Mean	Std. Dev.	Min	Max
Income Inequality	74	38.23	9.08	24.2	63.1
Individualism	74	41.27	23.65	6	91
RGDP per capita	74	16304	12890	475.10	65131.14
Unemployment Rate	74	7.84	4.70	1	23.7
Trade Openness	74	85.90	55.30	16.74	316.96
Exchange Rate	74	662.95	2435.71	0.62	16302.25
Economic Freedom Index	74	6.22	0.44	3.98	8.96
Democracy Index	79	6.79	1.89	1.71	9.93
Genetic Diversity	70	0.72	0.0275	0.64	0.77

We used several control variables that may also affect the income inequality of a nation. To capture the macroeconomic labor market conditions, we used the per capita RGDP (measured at PPP) and unemployment rate of the country. These data come from the World Bank Indicators online database. We used the trade openness and the exchange rate with U.S. dollar to assess the impact of the international trade on the livelihood of the people of a country. According to Heckscher and Ohlin theorem, a country exports goods that are intensive in the use of its "abundant" factor and imports goods that intensively use its "scarce" factor. Stolper and Samuelson (1941) further developed this theory that trade liberalization would reduce the real wages of the scarce factor and increase those of the abundant factor. Thus, trade openness of a country can affect the income inequality of that country. However, many studies found conflicting empirical results in support of these theories (Goldberg and Pavcnik 2007, Winters et al. 2004, and Davis 1996). Similarly, the

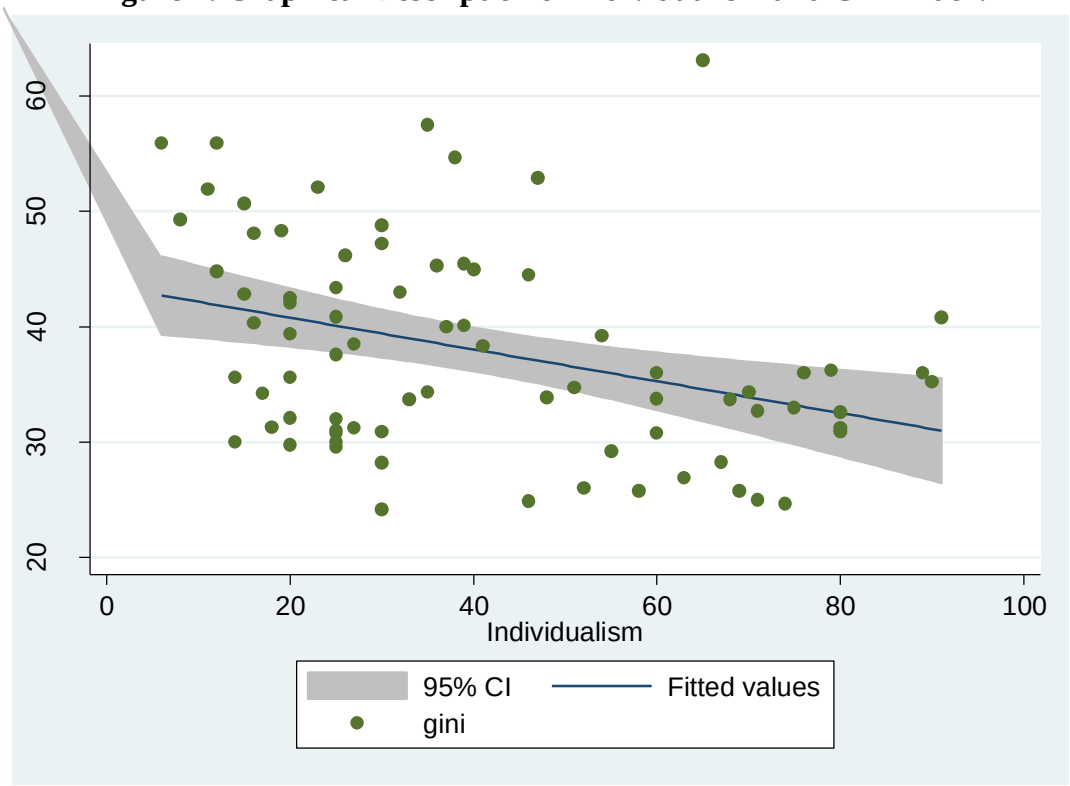
exchange rate with the U.S. dollar will affect the price of traded goods & services and thus can change income inequality within the country (Guillaumont Jeanneney and Hua 2001). The data on trade openness and exchange rate comes from the Penn World Table (2012). We also include an economic freedom index by James Gwartney and Robert Lawson (2012). Berggren (1999) and Scully (2002) have showed economics freedom of a country have significant impact on the income distribution within the country.

Finally, we used the genetic diversity of the country as our instrumental variable for the instrumental variable analysis. The genetic diversity data comes from Ashraf and Galor (2013a). They used the genetic diversity in the 53 ethnic groups across the globe compiled by the Human Genome Diversity Project (HGDP) in collaboration with the Centre d'Etudes du Polymorphisme Humain (CEPH). This compilation is known as the Human Genome Diversity Cell Line Panel. One obstacle of this ethnic genetic diversity data is that one need to transform this to the genetic diversity at national level. To achieve this, Ashraf and Galor (2013a) used the distance of humankind's prehistoric out-of-Africa migration from East-Africa to *predict* the genetic diversity of a nation's populations. Using this *predicted* genetic diversity, they found that genetic diversity can explain the persistent hump-shaped effect on per-capita income of the countries, that is the low diversity of Native American populations and the high diversity of African populations have led to low development in regions inhabited by these groups, while the intermediate levels of diversity of European and Asian populations have been favorable for development. The summary statistics of the variables are presented at Table 1.

Graphical Presentation

We present four scatter plots with a fitted line and 95% confidence interval for the mean with the cultural dimension on the X-axis and GINI coefficient on the Y-axis. It is clear from the graphs that the cultural dimensions of individualism and power distance have clear patterns while other two dimensions have no relationship with GINI index. We find graphical support to our hypothesis that higher individualism is related to lower inequality and higher power distance is to higher inequality.

Figure 1: Graphical Description of Individualism and Gini Index.



Empirical Results

Our initial OLS results are presented in Table 2. We did find that individualism-collectivism is correlated with income inequality measured by the GINI coefficient. However, as mentioned earlier that these results are simple correlations and we cannot attribute a causal relationship between individualism-collectivism and income inequality. However, the results are similar to the graphical analysis of relationship between individualism-collectivism with income inequality. We also find a low Adjusted R^2, which is very typical of cross-sectional data (Cramer 1987).

Table 2: Ordinary Least Square Results

Variables	**Model**
Individualism	–0.08 (–1.34)
All Controls	Yes
Observations	78
Adjusted R^2	0.19

Note: t-statistics in parenthesis. ***, ** and * implies significance at 1%, 5% and 10% respectively.

Then, we show the instrumental variable results in Table 3. Our Model passes all the standard tests for validity of the instruments. We present the first stage F-statistics, under-identification test and weak identification test for the instrument in the table.[4] As a rule of thumb, the first stage F-statistics should be over 10 (Staiger and Stock 1997). The under-identifcation test reports a

[4] Results are available upon request.

Kleibergen-Paap rk LM statistic which will be tested on the null hypothesis that the first stage equation is underidentified (i.e. instruments are not relevant) against the alternative hypothesis that the equation is identified (i.e. instruments are relevant). See Hall, Rudebusch, and Wilcox (1996) for a discussion of this test. Weak identification arises when the excluded instruments are correlated with the endogenous regressors but only weakly. Estimators can perform poorly when instruments are weak (Stock and Yogo 2002 and 2005). We did not report the over-identification test results as we used only one instrument and thus our equation is exactly identified in our model.

We do find support for our hypothesis that people from higher power distance and less individualistic cultures will experience greater income inequality than people in countries with high individualism and small power distance. In other words, people in countries where the culture is collectivistic are likely to tolerate more income equality as hypothesized in this paper. As noted earlier, any attempt to causally link culture and income inequality is fraught with the potential problem of endogeneity. To overcome that problem, we have resorted to instrumental variable approach. The results are provided in Table 3 below.

Table 3: Instrumental Variable Approach

Variables	**Model I**
Individualism	–0.40*** (–3.14)
All Controls	Yes
Observations	70
First Stage F-Statistics	37.51 (0.00)

Underidentification Test	17.21 (0.00)
Weak Identification Test	37.51

Note: z-statistics in parenthesis. ***, ** and * implies significance at 1%, 5% and 10% respectively.

The findings of this study are likely to have important implications for managers and policy makers. Existing research suggests that if we are aware of any negative impact of certain aspects of our national cultural traits, we can take corrective measures to minimize the impact without changing our cultural belief. For example, the gender gap in compensation in the US used to be pretty high. Even though the US did not shed its masculinity, such gap has considerably narrowed down over the years. At a national level, the governments in collectivistic and large power distance countries can also take measures discussed earlier in the paper to soften the negative impact of income inequality.

IV. CONCLUSIONS

This paper contributes to the nascent literature on the relationship between culture and economic phenomena by presenting the first empirical study that goes beyond correlation and attempts to **causally** link a culture trait- individualism-collectivism- with income inequality. While this study confirms our hypothesized relationship between individualism (collectivism) with income inequality, further research on this topic needs to be undertaken before any firm conclusion can be drawn. Future researchers should also examine if other dimensions of national culture such as power distance, uncertainty avoidance, time orientation, and masculinity-femininity have any impact on income inequality. Future researchers should also investigate if the measures identified

in this paper for reducing income inequality actually mitigate income inequality. Future researchers should also examine if the cultural values of various sub-cultures within a national culture also contributes to income inequality within the boundary of the country. Since culture is dynamic and cultural values and norms are subject to change, future researchers should also consider undertaking longitudinal studies on this topic to track if cultural changes lead to changing patterns in income distribution.

While much work lie ahead, it is hoped that this paper would generate interest among scholars to focus on this hitherto neglected area of research.

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