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Do National Cultural Traits Affect Comparative Advantage in Cultural Goods?

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Abstract: Trade in cultural goods is making an increasingly significant contribution to international trade, but its flows are very uneven across regions, which has raised concerns over cultural homogenization. This paper considers various aspects of national culture as possible explanations for comparative advantage in cultural goods. Using data from 98 countries over the period 2004 to 2014, and employing Hofstede's multidimensional approach to culture, we test the relationship between the dimensions of national culture and comparative advantage in cultural goods. We find that the cultural dimensions of individualism, masculinity, long-term orientation, and indulgence are positively associated, whereas the cultural dimensions of power distance and uncertainty avoidance are negatively associated with comparative advantage in cultural goods.

Keywords: national culture; comparative advantage; cultural goods

1. Introduction

With rapid globalization, the product scope of international trade has been expanding. In the past decade, cultural goods have become a growing source of international trade, emerging as an enabler and contributor to the sustainable development of the world economy. In 2013, the value of global exports in cultural goods reached USD212.8 billion, almost doubling from 2004 and accounting for 1.22% of all exports of goods [1]. During the Global Financial Crisis, trade in goods dropped significantly, but trade in cultural goods was less affected. In 2009, overall trade in goods decreased by 22.4% in value, but cultural exports declined by only 13.5% [1]. Both total trade in goods and in cultural goods started to recover in 2010.

Cultural goods are goods which carry symbolic, aesthetic, artistic or cultural value [1]. As the world market for cultural goods has grown, the question of conflicts between cultural diversity and trade in cultural goods, also known as the 'culture and trade quandry', has been of increasing concern, due to the uneven flow of cultural goods. If cultural trade is dominated by a specific region or nation, then cultural diversity may be threatened by global cultural homogenization.

Table 1 shows the distribution of world exports and imports of goods by region in 2013, broken down by trade in cultural goods and total goods. Naturally, the larger regions dominate world cultural trade, with North America and Europe making up close to half of world exports and over 60% of world imports, while the Caribbean, at the other extreme, accounts for only a fraction of one percent of both exports and imports in cultural goods. The existence of imbalances in the trade of cultural goods is clear when we consider the ratio of cultural good exports (or imports) to the exports (or imports) of all goods. A ratio over 1 indicates that a region is more important in terms of cultural exports (or imports) while a ratio less than 1 indicates that a region is less significant in terms of cultural trade.

Table 1. World trade in cultural/all goods (2013) by region.

Region	Exports (% World)			Imports (% World)		
	Cultural Goods	All Goods	Ratio (Cultural to All)	Cultural Goods	All Goods	Ratio (Cultural to All)
North America and Europe	49.1	48.7	1.008	61.7	50.1	1.232
South and East Asia	45.5	31.2	1.458	26.1	33.2	0.786
Latin America	1.2	6.1	0.197	3.4	5.9	0.576
Central Asia and Eastern Europe	2.7	5.3	0.509	2.7	4.6	0.587
Arab States	0.8	5.3	0.151	3.0	2.8	1.071
Pacific	0.5	1.7	0.294	2.0	1.6	1.25
Sub-Saharan Africa	0.3	1.6	0.188	0.9	1.7	0.529
Caribbean	0.02	0.02	1	0.1	0.1	1

Source: [1].

It is striking that, for exports, the ratio is 1 for the Caribbean and close to 1 for North America and Europe. South and East Asia is the only region that exports a disproportionately high share of cultural goods. For the remaining regions, the ratio for exports is low, suggesting that the cultures of these regions may exert little influence on the rest of the world. In South and East Asia, Latin America, Central Asia and Eastern Europe, and Sub-Saharan Africa, the ratio with respect to imports is also below 1, suggesting that they are not subject to a lot of cultural influence from outside their regions. The Arab States and the Caribbean, with ratios close to 1, are not subject to a disproportionate inflow of cultural goods. North America and Europe, and the Pacific, stand out as regions in which their world shares of imports of cultural goods exceed their world shares of trade in total goods.

Although Table 1 does illustrate, in broad terms, the existence of imbalances in the flows of cultural goods, it would be necessary to look at flows at the country level to uncover more detail about the precise nature of the imbalances. Also, it is clear that over time (and particularly recently), there have been considerable shifts in trade in cultural goods, and this can only be addressed by looking at the country-level data over a number of years. For example, prior to 2010, the USA dominated world exports of cultural goods, but has since been overtaken by China which, by 2013, exported double the value of the cultural goods exports of the USA [1]. In the empirical work below, we therefore employ country-level panel data over the decade to 2014.

In the face of these imbalances in the flows of cultural goods, policy makers worldwide have expressed concern over possible conflict between the maintenance of cultural diversity and heritage and the growing trade in cultural goods. In 2001, UNESCO adopted the Universal Declaration on Cultural Diversity. The Declaration, on the one hand, affirms the importance of cultural diversity, which is recognized as one of the pillars of sustainable development (not simply in terms of economic growth, but also as a means to achieve a more satisfactory intellectual, emotional, moral, and spiritual existence, while, on the other hand, affirming the importance of cultural communication via international trade in cultural products [2]. In 2005, despite fierce criticism and strong resistance expressed mainly by the US Government, UNESCO adopted the Convention on the Protection and Promotion of the Diversity of Cultural Expressions [3]. The Convention sets standards and parameters for its parties in the design and implementation of policies, with respect to cultural goods [4].

The World Commission on Environment and Development defined sustainable development as, "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [5] (p. 43). Since then, the United Nations has committed itself to mainstreaming sustainability through all its policies. The Conference on Sustainable Development in Rio de Janeiro renewed the commitment of the United Nations to sustainable development [6], and stressed the interrelation of the three pillars of sustainability: environmental, social, and economic. Without environmental sustainability, the very existence of human societies is threatened, but the social and economic aspects are also vital. Conflict, amongst

and within nations as well as ideologies, has always been a threat to human well-being and development and, since the advent of highly destructive technologies, also poses an existential threat. Economic sustainability is necessary for the ongoing provision of human needs and well-being.

In 2013, UNESCO adopted the Hanzhou Declaration [7], which recommended the inclusion of culture as the fourth pillar of sustainability. The UN System Task Team had highlighted the need to integrate culture into policies for sustainable development [8], noting the failure of past policies which had not paid enough attention to cultural context. Ostrom (2007) makes the point that, in developing policies relating to the sustainability of social-ecological systems, there is a need to look beyond panaceas [9]. The human social system (culture) is just as much part of the environment within which effective policies for sustainability need to function as the biological/ecological system. Therefore, a policy that works well in one culture or society may not do so in another.

Culture is not easily defined, but it can be seen as a lens through which we view social and economic reality, and through which we act on and shape the environment [10]. Hawkes (2001) proposes three inter-related aspects of culture that emerge from the literature; culture is, simultaneously: our inherent values and aspirations; the means by which we develop and transmit these values and aspirations; and the manifestations of them [11]. Appadurai (2013) also notes the greatly varying definitions of culture from immaterial "ideas about human creativity and values" to material "matters of heritage, monuments, and expressions" [12] (p. 179).

The manifestations of culture, which may be either tangible or intangible, are what is commonly perceived as culture in everyday terms; that is, the past and present output of what is often referred to as the arts. It is only these measurable manifestations of culture as goods and services, which can potentially be traded, that we deal with in the empirical work which follows. UNESCO (2016) classifies cultural goods and services as belonging to six domains: cultural and natural heritage, performance and celebration, visual arts and crafts, books and press, audio-visual and interactive media, and design and creative services [1].

Cultural diversity is analogous with biodiversity, with each type of diversity reinforcing the other and both essential for sustainability [13].

Globalization and (more specifically) trade in cultural goods and services may have the potential to reduce cultural diversity; however, given the locus of political power, and homogenization within (rather than across) nation states is, perhaps, a greater threat to cultural diversity. The loss of languages is a notable feature of loss of cultural diversity, with over a third of the languages in existence in the mid-twentieth century already extinct, endangered, or vulnerable [14].

More than twenty-five years ago, Appadurai (1990) pointed out that the "sheer speed, scale, and volume" of flows of "people, machinery, money, images, and ideas" in the late twentieth century greatly exceeded that during previous historical periods, and proposed a framework of five 'scapes' [15] (p. 301), corresponding to these five flows, through which to analyse the process of cultural globalization. For example, the acceleration of migration in this century reinforces Appadurai's point that deterritorialization of migrant populations, while increasing the potential for ethnic conflict, also creates new markets for purveyors of cultural goods.

According to basic trade theory, a country's trade pattern is mainly determined by its comparative advantage, which is related to fundamental factors such as productivity, resource endowments, and economies of scale. Given the specific nature of cultural goods, a fundamental question arises: What role, if any, does national culture play in comparative advantage in cultural goods? Surprisingly, existing studies on the relationship between national culture and trade in cultural goods mainly focus on how cultural proximity influences bilateral trade in cultural goods [16–19], and do not directly say much about the relationship between national culture and comparative advantage in cultural goods.

This paper aims to examine the link between national culture and comparative advantage in cultural goods. As discussed above, culture is difficult to define and, therefore, even more difficult to put in measurable terms. However, the seminal work of Hofstede (1980, 2001, 2010) has gained

widespread acceptance in the literature of International Business [20–22], in providing measures with which to compare national cultures. We employ Hofstede's six dimensions of culture as a means to investigate the impact of culture on comparative advantage in cultural goods. The remainder of this paper is organized as follows: Section 2 theoretically explores the impact of each cultural dimension on comparative advantage in cultural goods; Section 3 sets out the methods and data to be used in testing the hypotheses developed in Section 2; Section 4 presents the results of estimating the model set out in Section 3; Section 5 presents a number of tests of the robustness of the results; And Section 6 concludes the paper.

2. Hypothesis Development

Cultural goods are defined as goods conveying ideas, symbols, and ways of life, some of which may be subject to copyrights [23]. They include books, magazines, multimedia products, software, recordings, films, videos, audio-visual programs, crafts, and fashion. They are different from other goods in that their value derives from irreproducible characteristics that are intrinsic to the way they are viewed by consumers. The unique characteristics of cultural goods are dependent on human creativity at both the individual and group level [24]. Creativity is a phenomenon whereby something new and somehow valuable is formed [25–26]. Successful new cultural products can help society to develop new markets, as well as to cater to the emerging needs of existing markets. The relationship between national culture and comparative advantage in cultural goods mainly relies on how national culture influences creativity, at both the individual and group level.

Hofstede (2001) defines culture to be "the collective programming of the mind, which distinguishes the members of one group or category of people from another" [21] (p. 9). On the basis of a study of IBM workers in more than 50 countries, Hofstede (1980) originally identified four dimensions of culture: power distance, individualism versus collectivism, masculinity versus femininity, and uncertainty avoidance [20]. Later, based on a study of Chinese employees, Hofstede (2001) added long-term versus short-term orientation as a fifth cultural dimension [21]. Finally, in 2010, on the basis of Bulgarian sociologist Minkov's work and an extensive global investigation of values, a sixth dimension (indulgence versus restraint) was added to the Hofstede model [22]. These dimensions (which we describe further below), although based on surveys of individuals, are used to describe a society as a whole.

Hofstede's approach to culture has been subject to a number of criticisms. These include questioning of the very idea of the measurability of culture, as well as the existence of national cultures. If, indeed, we were to accept the view that culture is not measurable in any meaningful way [27–28], then the methods of economics and econometrics, in particular, would not be at all applicable to the question under consideration. The question of the existence of culture at the level of the nation state raises a difficulty concerning the appropriate unit of analysis. McSweeney (2002) notes that Hofstede's conception of culture is one that is territorially unique, for example, "although the state 'Great Britain' is composed of at least three nations—England, Scotland and Wales—Hofstede treats it as a single entity within a single 'national' culture" [29] (p. 92). Data on trade is, of course, maintained at the national level so that if culture is applicable at a sub-national level or, in fact, crosses national borders, then measurement of our intended independent and dependent variables would be incongruent. While the existence of sub-cultures within national boundaries and even the disintegration of nation states and realignment of borders cannot be denied, Minkov and Hofstede (2012) use World Values Survey data to show that sub-national regions tend to cluster strongly along national lines on basic cultural values, so that measures of culture do adequately discriminate amongst nation states [30].

Despite its limitations, Hofstede's framework has continued to maintain an important role in the field of International Business. Each of the dimensions in Hofstede's six-dimensional model illustrates an aspect of cultural differences in people's values, beliefs, and behavior patterns across countries [21]. Each dimension is scaled as an index, running from 0 to 100. The rule of thumb is that if a score is under 50, the culture scores relatively low on that scale and if any score is over 50, the culture scores high on that scale. Figure 1 provides an example of cross-county differences on these

dimensions of culture in China, Germany, Japan, and the USA. The greatest variability in Figure 1 is on the dimension of individualism versus collectivism, with China nearest to the collectivist end of this scale and the USA near to the individualistic extreme.
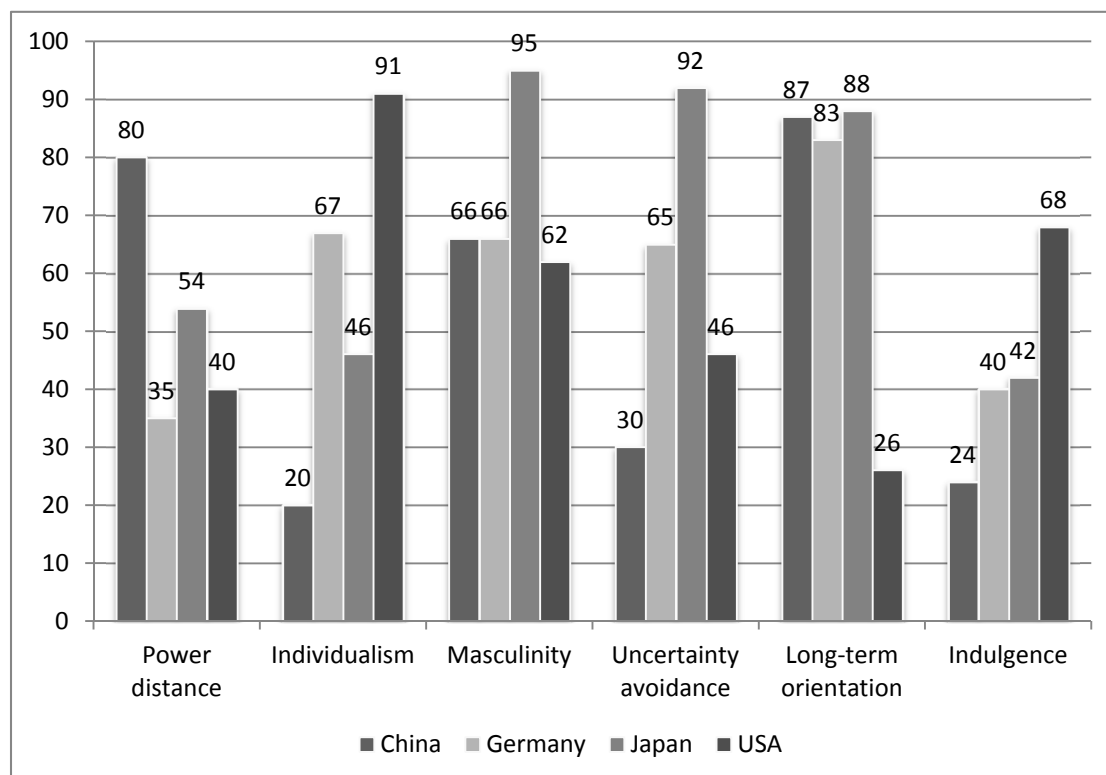

Figure 1. Cultural dimensions—China, Germany, Japan, USA

We briefly describe each index and its hypothesized relationship to comparative advantage in cultural goods in the sub-sections below. Further detail on the dimensions can be found on Hofstede's website [31].

2.1. Power Distance

Power distance refers to the extent to which lower ranking individuals in a society expect and accept that power is distributed unequally [21]. In societies with a high power distance, people are more willing to conform to a hierarchy and powerful people are regarded as entitled to be more autocratic. In societies with low power distance, inequality is less tolerable and democratic participation is encouraged.

Creativity largely depends on how flexibly and imaginatively people can approach problems [32,33]. Low power distance gives people autonomy to choose the means to solve problems and achieve goals, which encourages creativity. At the level of a group, creativity relies on individuals having the freedom to voice their ideas. Under cultural circumstances with low power distance, individuals in superior positions are more likely to encourage upward communication and listen to those in inferior positions. Societies low in power distance encourage active participation by many and induce more creativity in the production of cultural goods. We therefore hypothesize that power distance is negatively associated with comparative advantage in cultural goods.

2.2. Individualism versus Collectivism

The dimension of individualism versus collectivism refers to "the relationship between the individual and the collectivity which prevails in a given society" [20] (p. 213). Societies characterized by an individualistic culture have loose ties among members and value individual uniqueness and self-determination. Members of such a society primarily take care of themselves and their immediate

family. Societies with a collectivist culture, on the other hand, hold group values and beliefs. Hence, members identify with the group and are more concerned about collective interests.

Successful innovation and new product development requires individuals to think independently [34]. Individuals with independent judgment can see an opportunity that has been overlooked by others and put forward riskier ideas, allowing more new and creative ideas to be developed. Moreover, the individual uniqueness valued by an individualistic society undoubtedly has positive effects on within-group heterogeneity, which can improve the ability of societies to adapt to a new technological paradigm and to come up with new concepts and ideas [35–37]. We therefore hypothesize that individualism is positively associated with comparative advantage in cultural goods.

2.3. Masculinity versus Femininity

Masculinity versus femininity is defined as the degree to which assertiveness (masculinity) prevails over nurturance (femininity). In a masculine society, people are ego-oriented and live in order to work, whereas in a feminine society, people are more modest and work in order to live. Masculine societies place greater value on competition, ambition, and career achievement. In contrast, feminine societies put more emphasis on equality, caring for the weak, and the quality of life [20].

The motivation to be creative stems from two different sources: intrinsic and extrinsic motivation [38]. Intrinsic motivation is a drive resulting from internal rewards, such as personal interest, desires, hopes, goals, etc. Extrinsic motivation involves engaging in behavior in order to earn external rewards, such as payment, rewards, fame, approval from others, etc. The materialistic nature of masculine cultures appears to promote creative endeavors by both intrinsic and extrinsic motivation [39,40]. Therefore, we hypothesize that masculinity is positively associated with comparative advantage in cultural goods.

2.4. Uncertainty Avoidance

Uncertainty avoidance reflects the extent to which the members of a culture feel threatened by uncertain or unknown situations [20]. Societies exhibiting strong uncertainty avoidance have low acceptance for uncertainty and ambiguity, so they actively devise means to minimize the occurrence of unknown and unusual circumstances. In contrast, societies with low uncertainty avoidance possess high tolerance for uncertainty, so they can accept variety and feel relatively comfortable in unstructured situations or changeable environments.

The process of generating something new is always accompanied by uncertainty and risk-taking. Investigations of why some people are more creative than others suggest that, from the perspective of personality, one of primary traits of creative individuals is tolerance for ambiguity [41]. Therefore, societies with high uncertainty avoidance are less likely to develop innovations. Following this reasoning, we hypothesize that uncertainty avoidance is negatively associated with comparative advantage in cultural goods.

2.5. Long-Term versus Short-Term Orientation

Long-term orientation versus short-term orientation is concerned with the different ways cultures view time and the importance of the past, the present, and the future [21]. Societies with a long-term orientation focus on the future and, therefore, their people value persistence, perseverance, thrift, and being able to adapt. By contrast, societies with a short-term orientation appreciate the present or past and consider them more important than the future; personal steadiness and stability, tradition, and the current social hierarchy are valued.

Creativity undoubtedly occurs through a long process. Wallas (1926) considered creativity to be a legacy of the evolutionary process [42], which allowed humans to quickly adapt to rapidly changing environments. In Wallas' model, creativity is explained as a process consisting of five stages: preparation, incubation, intimation, illumination or insight, and verification. Torrance (1968)

defined creativity as a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies, then testing and retesting these hypotheses (and possibly modifying and retesting them); and, finally, communicating the results [43]. Some studies also show that the most outstanding creative individuals spend almost all of their time and energy in their work and have a breakthrough only after a long time, often more than ten years. Their whole lives are full of a cycle of hard-work and breakthroughs [44,45]. Therefore, societies with a long-term orientation are more likely to devote their time and energy to creativity for adaption to change. We hypothesize that long-term orientation is positively associated with comparative advantage in cultural goods.

2.6. Indulgence versus Restraint

Indulgence versus restraint is designed to measure how freely people can satisfy their basic needs and desires, and how strictly social norms are followed and gratification is suppressed and regulated [22]. In societies characterized by indulgence, people tend to accept relatively free gratification of natural human desires related to enjoying life and having fun. In contrast, restrained societies tend to hold that strict norms need to be adhered to in order to curb and regulate such gratification. Therefore, in such societies, positive emotions are usually less freely expressed.

Studies on creativity traits from the perspective of personality have indicated that creative people tend to be more open to new experiences, less conventional, and more impulsive [46]. This implies that an indulgent culture is more likely to favor creativity. Moreover, various researches on organizational effectiveness have found that creativity more often occurs in a workplace where members share excitement and a willingness to help, and recognize each other's talents [32,33]; these are the typical characteristics of an indulgent culture. Therefore, we hypothesize that indulgence is positively associated with comparative advantage in cultural goods.

3. Methodology and Data

In this section we set out the methods and discuss the data set that we use to test the hypotheses outlined in Section 2.

3.1. Methodology

On the basis of the hypotheses developed above and trade theories, we propose the following pooled estimation model:

$$
\begin{aligned}
RCA_{it} = \alpha + Culture_i\beta + \gamma LP_{it} + \lambda Population_{it} + \delta PHK_{it} + \theta HUK_{it} \\
+ \sigma\, landlocked_i + \mu_{it}
\end{aligned}
\tag{1}
$$

where *i* and *t* denote the indices for country and time, respectively.

The dependent variable RCA_{it} is the revealed comparative advantage index of cultural goods, which is used to measure comparative advantage in cultural goods. The most commonly-used revealed comparative advantage index is the Balassa (1965) index [47], defined as follows:

$$
RCA_{it} = \frac{E_{ji}}{E_i}\frac{E_{jw}}{E_w}
\tag{2}
$$

where E_{ji} and E_i are a country *i*'s exports of cultural goods and a country *i*'s total goods exports, respectively. E_{jw} and E_w are world exports of cultural goods and the world exports of all goods, respectively. If $RCA_{it} > 1$, then a country is said to have a comparative advantage in cultural goods.

Culture_i is a vector of the dimensions of the national culture of a country *i*, measured by the value of the one or more of the six cultural dimensions developed by Hofstede, in logarithm form. As the hypotheses developed in last section suggest, the cultural dimensions of power distance (*PDI*) and uncertainty avoidance (*UAI*) are expected to be negatively associated with a comparative

advantage in cultural products, while the other four cultural dimensions (individualism (*IDV*), masculinity (*MAS*), long-term orientation (*LTO*), and indulgence (*IND*)) are all positively related to the comparative advantage of cultural products.

We introduce a number of control variables into the model on the basis of existing trade theories [48–50].

LP$_{it}$ represents the labor productivity of country i in period t, measured by GDP (in constant 2005 US dollars) per worker and denominated in thousands of dollars per worker, in log form. The introduction of labor productivity is based on Ricardian trade theory, which implies a country will export goods that its labor produces relatively efficiently.

Population$_{it}$ is the size of population, measured in millions of persons in country i in period t, entered in logarithm form, and used to control for the market size of country i. This variable is introduced based on the New Trade Theory [50], which suggests a large market can help firms take advantage of economies of scale, and thereby generate comparative advantage.

There are two variables used to control for endowments of the factors of production. Both variables are introduced into the model due to the Heckscher-Ohlin Theorem, which predicts that countries tend to export goods, the production of which is intensive in those factors with which the countries are abundantly endowed. *PHK$_{it}$* represents the endowment of both physical capital and land in country *i* in period *t*, measured by the ratio of gross fixed capital formation (in constant 2005 US dollars) to land area, and denominated in thousands of dollars per sq. km, entered in logarithm in form. *HUK$_{it}$* is defined as the endowment of human capital in country *i* in period *t*, measured by the ratio of the labor force with tertiary education to the total labor force. The creation, production, distribution, and dissemination of cultural goods relies on both skilled workers and physical capital, thus cultural goods are likely to be intensive in human capital and physical capital. Therefore, countries with abundant human capital and physical capital are expected to have a comparative advantage in cultural goods.

Landlocked$_i$ is a dummy variable indicating whether country *i* is landlocked. If country *i* is landlocked, it takes the value of one, and zero otherwise. Landlocked countries are expected to have a lower comparative advantage in cultural goods, due to higher export costs.

α is a constant and $\mu_{it} \sim N(0, \sigma_u^2)$ is an i.i.d. (independent identically distributed) random error term.

The definitions and measurements of the variables in the model are summarized in Table 2.

Table 2. Definitions and measurements of main variables.

Variables	Definition and Measurement
RCA_{it}	The revealed comparative advantage index (the Balassa index) of cultural goods.
$Culture_i$	National culture of country i, measured by six cultural dimensions developed by Hofstede, i.e., Power Distance Index (PDI), Individualism versus Collectivism (IDV), Masculinity versus Femininity (MAS), Uncertainty Avoidance Index (UAI), Long Term Orientation versus Short Term Normative Orientation (LTO), and Indulgence versus Restraint (IND).
LP_{jt}	Labor productivity of country i in period t, measured by GDP (constant 2005 US dollars) as a proportion of the labor force, and denominated in thousands of dollars per worker.
$Population_{it}$	The size of the population in country i in period t, used to measure the market size of country i, and denominated in millions of persons.
PHK_{it}	The endowment of physical capital and land in country i in period t, measured by the ratio of gross fixed capital formation (constant 2005 US dollars) to land area, and denominated in thousands of dollars per sq. km.
HUK_{it}	The endowment of human capital in country i in period t, measured by the ratio of the labor force with tertiary education to the total labor force.
$Landlocked_i$	A dummy variable indicating whether country i is landlocked. If country i is landlocked, this dummy variable takes the value of 1, and 0 otherwise.

3.2. Data Set

We would like to include as many countries and as lengthy a time series as possible in our dataset. However, the number of countries is constrained by the availability of data on the cultural dimensions, which are the core explanatory variables in the regression model. The time horizon is constrained by the availability of data on cultural trade, measured by a consistent statistical standard. Therefore, this study utilizes an unbalanced panel of 98 countries over the period 2004 to 2014.

Exports of cultural goods between 2004 and 2013, denominated in US dollars at current prices, are sourced from the *Globalization of Cultural Trade: A Shift in Consumption- International Flows of Cultural Goods and Services 2004–2013,* issued by the United Nations Educational, Scientific, and Cultural Organization [1]. Exports of cultural goods in 2014 are sourced from the UNCOMTRADE database of the United Nations. Exports on all goods at country and world level, denominated in US dollars at current prices, are available in the database of the World Trade Organization (WTO).

It would be interesting to incorporate an analysis of trade in cultural services but, to do so, improved data would be required. According to UNESCO (2016), "the analysis of cultural services data will continue to be challenging" [1] (p. 66), until countries are required to furnish more detailed data. Data on cultural goods and services are compiled using different standards. Data on flows of cultural goods are compiled using the Harmonized Commodity Description and Coding System version 2007, using customs statistics developed by the World Customs Organization, while cultural services data are captured using the Extended Balance of Payments Services Classification System. Also, there are currently a lot of missing data. In our source, only 87 countries have any data, with most not covering anything like the whole period.

The data on the six dimensions of national culture are collected from Hofstede's personal website [30].

Labor productivity is available in the database of the International Labor Organization (ILO). The data on population, land area, and labor force with tertiary education (% of total) are sourced from the World Bank's World Development Indicators. The data on gross fixed capital formation are available in the UNCTAD database of the United Nations. The variable *Landlocked* is compiled from the database of CEPII (the French Centre d'Etudes Prospectives et d'Informations Internationales).

Descriptive statistics and the coefficients of correlation of the variables are shown in Table 3. The median value of power distance and uncertainty avoidance are both greater than 60, implying that, in our sample, people in most countries have low acceptance for uncertain and ambiguity, and also have high tolerance for the inequality of power distribution. For the other four cultural dimensions, their median and mean values are both are less 50, indicating that, in the sample, most of countries are characterized by collectivism, femininity, short-term orientation, and restraint. The coefficients of correlations between most of the explanatory variables are low, so that multicollinearity in the model is not likely to be a problem. The exceptions are the correlations between *LP* and *PDI* (−0.62), and *LP* and *IDV* (−0.68).

Table 3. Coefficients of correlation and descriptive statistics.

	RCA	PDI	IDV	MAS	UAI	LTO	IND	LP	Population	PHK	HUK	Landlocked
RCA	1	−0.06 *	0.14 ***	0.15 ***	−0.18 ***	0.04	−0.06 *	0.08 **	0.30 ***	0.04	−0.01	0.04
PDI		1	−0.67 ***	0.11 ***	0.16 ***	−0.05	−0.28 ***	−0.62 ***	0.14 ***	0.02	−0.37 ***	−0.07 **
IDV			1	0.04	−0.15 ***	0.21 ***	0.17 ***	0.68 ***	−0.04	−0.08 **	0.45 ***	0.11 ***
MAS				1	0.01	0.05	−0.00	−0.02	0.16 ***	0.04	−0.13 ***	0.26 ***
UAI					1	0.07 *	−0.11 ***	−0.08 **	−0.19 ***	−0.30 ***	−0.17 ***	−0.10 ***
LTO						1	−0.51 ***	0.23 ***	0.18 ***	0.21 ***	0.27 ***	0.25 ***
IND							1	0.30 ***	−0.16 ***	−0.09 **	0.08 *	−0.09 **
LP								1	−0.14 ***	0.18 ***	0.49 ***	0.08 ***
Population									1	−0.05 *	−0.04	−0.09 ***
PHK										1	0.06	−0.04
HUK											1	−0.07 *
Landlocked												1
Obs	976	976	976	976	976	835	785	976	976	974	608	976
Median	0.44	66	35	47	65	45	48	18.18	14.21	111.59	24.6	0
Mean	0.76	62.32	40.70	47.81	64.30	45.29	47.66	34.79	63.87	1684.14	25.46	0.12
Std.Dev	1.08	21.03	22.58	18.91	21.94	22.32	22.25	37.43	191.24	8005.70	9.95	0.33
Min	0	11	6	5	8	4	0	0.3490	0.2921	1.1558	0.1	0
Max	15.29	100	91	100	100	100	100	205.75	1364.27	78,866.78	56.3	1

Notes: *** denotes the significance level of 1%, ** denotes the significance level of 5%, and * denotes the significance level of 10%.

The median and mean values of *RCA* are 0.44 and 0.76, respectively, implying that most of the countries in our sample lack comparative advantage in cultural goods. *RCA* has a very wide range, with maximum and minimum values of 15.29 and 0, respectively. This suggests that there is an uneven pattern of comparative advantage in cultural goods across most of the countries. Table 4 shows the average values of *RCA* over 2004–2014 for each of the countries in the sample.

Table 4. Average *RCA* 2004–2014.

Country	RCA	Country	RCA	Country	RCA
India	4.3237	Colombia	0.6723	Philippines	0.2603
Dominican Republic	4.2588	Sweden	0.6625	South Africa	0.2467
Switzerland	3.4160	Poland	0.6136	Iran	0.2408
Lebanon	3.3670	Indonesia	0.5947	Uruguay	0.2365
United Kingdom	3.0173	Luxembourg	0.5884	Romania	0.2338
Bhutan	2.2920	Egypt	0.5874	Namibia	0.2253
Jordan	2.2647	Netherlands	0.5825	Hungary	0.2074
Turkey	1.8219	Serbia	0.5739	Malawi	0.1927

United States	1.7153	Mexico	0.5606	Ukraine	0.1788
China	1.7103	Korea	0.5501	Morocco	0.1599
Italy	1.6491	Sri Lanka	0.5451	Argentina	0.1574
Thailand	1.5704	Fiji	0.4872	Senegal	0.1436
Pakistan	1.5495	Canada	0.4753	Saudi Arabia	0.1334
Nepal	1.4976	Slovenia	0.4616	Russia	0.1296
Panama	1.4345	Japan	0.4558	Brazil	0.1144
Singapore	1.3034	Hong Kong	0.4552	Norway	0.1143
Austria	1.2370	Portugal	0.4530	Kuwait	0.1102
Ireland	1.1993	Syria	0.4414	Ecuador	0.1049
Viet Nam	1.1518	Kenya	0.4265	Tanzania	0.0967
France	1.1067	Slovakia	0.4178	Bangladesh	0.0902
Croatia	1.0636	Guatemala	0.4173	Trinidad and Tobago	0.0889
Malta	0.9674	Belgium	0.4165	Burkina Faso	0.0861
United Arab Emirates	0.9645	Peru	0.4157	Nigeria	0.0853
Greece	0.9110	Lithuania	0.4152	Chile	0.0782
Malaysia	0.9098	Costa Rica	0.3927	Albania	0.0750
Germany	0.8744	New Zealand	0.3818	Iceland	0.0615
Denmark	0.8110	Australia	0.3623	Zambia	0.0525
Latvia	0.8080	Jamaica	0.3561	Mozambique	0.0388
Estonia	0.7262	Finland	0.3377	Honduras	0.0191
Czech Republic	0.7246	Cabo Verde	0.3124	Suriname	0.0146
Spain	0.7238	Ghana	0.3070	Venezuela	0.0033
El Salvador	0.7157	Bulgaria	0.3016	Sierra Leone	0.0020
Israel	0.6992	Ethiopia	0.2892		

4. Empirical Results

Based on Equation (1), we run a number of regressions to identify the impact of national culture on comparative advantage in cultural goods. First, we use only the control variables, derived from standard trade theories, in the regression model. Then we enter each cultural dimension, one at a time. Finally, all six cultural dimensions are introduced into the regression model. The estimation results are presented in Table 5.

Table 5. The effects of national culture on the comparative advantage in cultural goods.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	VIF
PDI		−0.2257 ** (0.0941)						−0.2215 * (0.1216)	2.40
IDV			0.1415 * (0.0774)					0.3964 *** (0.1068)	2.44
MAS				0.1624 *** (0.0623)				0.1629 ** (0.0755)	1.96
UAI					−0.2154 ** (0.0844)			−0.1931 ** (0.0940)	1.45
LTO						−0.3410 *** (0.0812)		−0.1636 (0.114)	2.84
IND							0.3178 *** (0.0810)	0.2341 ** (0.1047)	2.34
LP	0.0017 (0.0465)	−0.0612 (0.0532)	−0.0599 (0.0574)	0.0147 (0.0466)	0.0026 (0.0463)	−0.0391 (0.0499)	−0.1583 ** (0.0626)	−0.3472 *** (0.0824)	5.05
Population	0.0924 *** (0.0238)	0.0976 *** (0.0238)	0.0837 *** (0.0243)	0.0646 ** (0.026)	0.0947 *** (0.0237)	0.1109 *** (0.0240)	0.0896 *** (0.0252)	0.0624 ** (0.0291)	1.62
PHK	0.1355 ***	0.1472 ***	0.1444 ***	0.1239 ***	0.1176 ***	0.1773 ***	0.1694 ***	0.1952 ***	2.98

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
	(0.0237)	(0.0242)	(0.0242)	(0.024)	(0.0247)	(0.0250)	(0.0257)	(0.0811)	
HUK	−0.0439	−0.0529	−0.0539	−0.0334	−0.0584	0.0269	0.0318	0.024	1.52
	(0.0713)	(0.0711)	(0.0714)	(0.0711)	(0.0712)	(0.0754)	(0.0812)	(0.0328)	
Landlocked	0.1904 *	0.1488	0.1468	0.0678	0.2218 **	0.3948 ***	0.2950 **	0.1302	1.76
	(0.1097)	(0.1106)	(0.112)	(0.1188)	(0.1098)	(0.1174)	(0.1161)	(0.1417)	
Constant	−0.0698	0.9929 **	−0.3756	−0.5978 **	0.9553 **	0.8307 ***	−1.1327 ***	−0.0031	
	(0.2216)	(0.4948)	(0.2773)	(0.2995)	(0.4583)	(0.3056)	(0.3806)	(0.9910)	
F value	13.42 ***	12.23 ***	11.78 ***	12.42 ***	12.37 ***	14.91 ***	13.75 ***	11.5 ***	
Adj R²	0.0928	0.0999	0.0963	0.1014	0.1010	0.1295	0.1247	0.1771	
Obs	608	608	608	608	608	562	538	538	

Notes: *** denotes the significance level of 1%, ** denotes the significance level of 5%, and * denotes the significance level of 10%. Standard errors are reported in parentheses.

Column (1) in Table 5 presents the estimation results without the cultural dimensions. Only population and the physical capital variables are significantly related to comparative advantage in cultural goods. The coefficients of both of these variables are positive and significant at the 1% level, which is consistent with the theoretical predictions. The dummy variable measuring whether a country is landlocked is positive, which is not in line with expectation, but significance is only at the 10% level.

Columns (2) to (7) show the estimation results with each of the cultural dimensions added on its own; all are individually significant, at least at the 10% level, and all accord with expectations (with the exception of the long-term orientation variable (*LTO*), the coefficient of which is negative instead of positive (as hypothesized)).

Column (8) presents the estimation results of the fully specified model with all six national cultural dimensions. The final column of Table 5 shows the variance inflation factors (VIF), none of which is above 10, suggesting that multicollinearity is not a problem in the fully specified model. The results for each of the cultural dimension variables are very much in accord with the regressions reported in columns (2) to (7), with the signs the same, and each coefficient having the same order of magnitude. The unexpected negative sign on *LTO* is no longer statistically significant.

5. Robustness

We test the robustness of the results in Table 5 by investigating the impact of outliers on the results. Specifically, we first removed the three countries with the highest and lowest comparative advantage in cultural goods. The three countries with the highest values of *RCA* are India, the Dominican Republic, and Switzerland; the three countries with the lowest values of *RCA* are Sierra Leone, Venezuela, and Suriname. The results on omitting these six countries are shown in Table 6. We also removed all observations with residuals above 2.5 standard deviations. These results are shown in Table 7.

Table 6. Robustness: removing three countries with the highest and lowest *RCA*.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	VIF
PDI		−0.1576 **						−0.2251 ***	2.32
		(0.0697)						(0.0872)	
IDV			0.0757					0.2188 ***	2.42
			(0.0592)					(0.0796)	
MAS				0.1512 ***				0.1978 ***	1.92
				(0.0463)				(0.0543)	
UAI					−0.1154 *			−0.1430 **	1.45
					(0.0628)			(0.0678)	
LTO						−0.1712 ***		−0.0101	2.68
						(0.0617)		(0.0841)	
IND							0.1639 ***	0.1270 *	2.31

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	VIF
							(0.0606)	(0.0763)	
LP	0.0498	0.0054	0.0163	0.0611 *	0.0493	0.0392	−0.0127	−0.1376 **	4.96
	(0.0346)	(0.0397)	(0.0434)	(0.0345)	(0.0346)	(0.0365)	(0.0466)	(0.0609)	
Population	0.0752 ***	0.0792 ***	0.0708 ***	0.0487 **	0.0767 ***	0.0905 ***	0.0798 ***	0.0479 **	1.59
	(0.0178)	(0.0178)	(0.0181)	(0.0194)	(0.0178)	(0.0175)	(0.0183)	(0.0211)	
PHK	0.0965 ***	0.1051 ***	0.1017 ***	0.0855 ***	0.0873 ***	0.119 ***	0.1131 ***	0.1136 ***	2.97
	(0.0176)	(0.0180)	(0.0181)	(0.0178)	(0.0183)	(0.0183)	(0.0187)	(0.0240)	
HUK	−0.0681	−0.0751	−0.0747	−0.0567	−0.0761	−0.0495	−0.0566	−0.0784	1.55
	(0.0527)	(0.0526)	(0.0530)	(0.0524)	(0.0528)	(0.0549)	(0.0591)	(0.0593)	
Landlocked	−0.1743 **	−0.2026 **	−0.1995 **	−0.2918 ***	−0.1580 *	−0.0776	−0.1188	−0.3423 ***	1.66
	(0.0866)	(0.0872)	(0.0888)	(0.0931)	(0.0869)	(0.0906)	(0.0899)	(0.1069)	
Constant	0.0594	0.8022 **	−0.1015	−0.4300 *	0.6103 *	0.5050 **	−0.4854 *	0.2218	
	(0.1648)	(0.3673)	(0.2074)	(0.2218)	(0.3420)	(0.2275)	(0.2825)	(0.7152)	
F value	15.06 ***	13.49 ***	12.83 ***	14.54 ***	13.16 ***	15.22 ***	14.08 ***	11.60 ***	
Adj R²	0.1074	0.1137	0.1084	0.1221	0.1111	0.1369	0.1426	0.1848	
Obs	585	585	585	585	585	539	515	515	

Notes: *** denotes the significance level of 1%, ** denotes the significance level of 5%, and * denotes the significance level of 10%. Standard errors are reported in parentheses.

Table 7. Robustness: removing observations with residuals larger than 2.5 SD.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	VIF
PDI		−0.2114 ***						−0.2875 ***	2.37
		(0.0694)						(0.0863)	
IDV			0.0941					0.2494 ***	2.45
			(0.0575)					(0.0763)	
MAS				0.1016 **				0.1710 ***	1.95
				(0.0464)				(0.0536)	
UAI					−0.1328 **			−0.1500 **	1.45
					(0.0627)			(0.0668)	
LTO						−0.0696		0.1667 **	2.85
						(0.0604)		(0.0835)	
IND							0.1771 ***	0.2594 ***	2.37
							(0.0583)	(0.0750)	
LP	0.0613	0.0022	0.0198	0.0690 **	0.0613 *	0.0588	−0.0031	−0.2007 ***	4.97
	(0.0346)	(0.0395)	(0.0429)	(0.0347)	(0.0345)	(0.0364)	(0.0454)	(0.0591)	
Population	0.0996 ***	0.1049 ***	0.0940 ***	0.0817 ***	0.1012 ***	0.1164 ***	0.1066 ***	0.0715 ***	1.61
	(0.0178)	(0.0177)	(0.0181)	(0.0195)	(0.0177)	(0.0175)	(0.0182)	(0.0207)	
PHK	0.1135 ***	0.1246 ***	0.1200 ***	0.1062 ***	0.1026 ***	0.1250 ***	0.1328 ***	0.1289 ***	2.99
	(0.0176)	(0.0179)	(0.1800)	(0.0179)	(0.0183)	(0.0183)	(0.0185)	(0.0235)	
HUK	−0.0723	−0.0809	−0.0791	−0.0653	−0.0812	−0.0788	−0.0529	−0.0916	1.52
	(0.0527)	(0.0524)	(0.0528)	(0.0527)	(0.0527)	(0.0547)	(0.0582)	(0.0577)	
Landlocked	0.0510	0.0126	0.0208	−0.0269	0.0700	0.1230	0.1196	−0.1458	1.71
	(0.0835)	(0.0838)	(0.0854)	(0.0905)	(0.0837)	(0.0873)	(0.0857)	(0.1025)	
Constant	−0.1357	0.8591 **	−0.3376	−0.4642 **	0.4974	0.0322	−0.7804 ***	−0.5828	
	(0.1646)	(0.3652)	(0.2055)	(0.2222)	(0.3409)	(0.2262)	(0.2744)	*(0.7056)*	
F value	21.87 ***	20.03 ***	18.72 ***	19.15 ***	19.08 ***	20.96 ***	21.26 ***	16.96 ***	
Adj R²	0.1492	0.161	0.1516	0.1547	0.1542	0.1791	0.188	0.2506	
Obs	596	596	596	596	596	550	526	526	

Notes: *** denotes the significance level of 1%, ** denotes the significance level of 5%, and * denotes the significance level of 10%. Standard errors are reported in parentheses.

Comparing the fully specified models in Tables 5 and 6, we find the results are very robust to the omission of the six outlier countries. The major difference is that, in Table 6, the coefficient of the variable *Landlocked* becomes negative and significant at the 1% level, in line with what one would expect theoretically.

The estimates in column (8) of Table 7 are very similar to those in Table 6. The coefficients of the control variables for population and physical capital retain their signs and significance, and are of similar magnitude to those in Tables 5 and 6. The coefficient of *Landlocked* is still negative but no longer significant. The coefficient of *LTO* is now positive and significant at the 5% level so that, removing all the outliers with large residuals, the estimation results support all the hypotheses relating to the dimensions of culture, as developed in Section 2. Specifically, individualism, masculinity, long-term orientation, and indulgence are all positively associated with comparative advantage in cultural products, while power distance and uncertainty avoidance exert a negative influence on comparative advantage in cultural products.

The variables used in the model have different units of measurement, which means that we cannot readily compare the magnitude of the effects of different variables (as reported in Tables 5–7). The cultural variables are all measured on a 0 to 100 scale but, even with these variables, the same score on two different variables does not necessarily have the same meaning. In Table 8, we report standardised coefficients corresponding to the unstandardized coefficients in Tables 5–7. Standardised coefficients are calculated by converting all variables to Z-scores, thereby removing the units of measurement. Having transformed the dependent variable and all of the independent variables so that they have a mean of 0 and a standard deviation of 1, a standardised coefficient tells us how many standard deviations the dependent variable will change for a 1 standard deviation increase in the corresponding independent variable.

Table 8. Standardised coefficients.

	Table 5	**Table 6**	**Table 7**
PDI	−0.1104	−0.1565	−0.1937
IDV	0.2269	0.1703	0.1933
MAS	0.1183	0.2009	0.1683
UAI	−0.0967	−0.1011	−0.1019
LTO	−0.0946	−0.0078	0.1273
IND	0.1339	0.1007	0.2009
LP	−0.3706	−0.2003	−0.2859
Population	0.1069	0.1143	0.1652
PHK	0.4021	0.3253	0.3578

Note: Only variables significant in Table 7 are reported.

Focussing on the results in the final column of Table 8 (which corresponds to those in Table 7, using a sample in which observations with residuals of more than 2.5 standard deviations have been removed), we can see the coefficients are all of the same order of magnitude. The coefficients of the proxies for culture vary by only a factor of 2, with labour productivity and physical capital having effects of a slightly larger magnitude. For a 1 standard deviation change in any of these variables, the effect on comparative advantage lies in the range of −0.10 to 0.36.

6. Conclusions and Policy Implications

With rapid growth of international trade in cultural goods, the threat of global cultural homogenization has risen due to uneven flows of cultural goods. We suggest that various aspects of national culture can possibly be identified as part of the reason for this imbalance in cultural trade. This paper examines the determination of comparative advantage in cultural goods from the perspective of national culture, as measured by Hofstede's six cultural dimensions.

Using data from 98 countries over the period 2004 to 2014, we find that the cultural dimensions of individualism, masculinity, long-term orientation, and indulgence are positively, whereas the cultural dimensions of power distance and uncertainty avoidance are negatively, associated with comparative advantage in cultural products. It would, therefore, seem to follow that altering one or more of these various dimensions of a national culture could improve a nation's comparative advantage in cultural products. However, policies to target any of the six dimensions would, if these

dimensions do indeed capture the essence of culture, risk altering the culture itself and even threaten to add to the cultural homogenization. To avoid this, and to maintain cultural diversity, cultural policies need to be re-shaped in such a way as to enable a cultural environment that encourages individuals and social groups to enhance creativity in cultural goods at the organizational and national levels, but without damaging the very culture from which those goods emerge.

Future research could add directly to the quantitative evidence we have presented here, particularly once data on trade in cultural services attains broader coverage. Also, as difficult as it may be to reconcile the widely varying interpretations of culture from perspectives as different of those of economics and anthropology, it is surely worthwhile to try to build understanding, since culture so clearly matters for sustainable development.

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