

## **Cultural diversity and the import of cultural goods** Evidence from Canada

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**Abstract** The effect of immigration as a determinant of the import of cultural goods to Canada is analysed. The period studied covers a time span of 15 years from 1996 to 2010 while utilising data from 15 of Canada's top trading partners for cultural goods. Empirical results suggest that there are various significant determinants of cultural trade such as economic mass of the exporting country, geographic distance and shared official common language. Furthermore, results suggest that the stock of immigrants has a positive effect on imports of cultural goods to Canada. Empirical results are based on an augmented gravity model while using ordinary least squares method.

**Summary** 1. Introduction. – 2. Aims and Objectives. – 3. Literature Review. – 4. Methodology. – 4.1. Gravity model. – 4.1.1. Dependent variable. Trade of cultural goods. – 4.1.2. Independent variables. – 4.1.3. Dummy variables – shared official common language. – 4.2. Construction of the regression equation. – 5. Results. – 5.1. Regression results for all 15 countries. – 5.2. Regression results for 13 countries (excluding India and Australia). – 6. Conclusion and recommendations. – 6.1. General discussion. – 6.2. Conclusions. – 6.3. Limitations.

**Keywords** Cultural goods. Immigration. Trade. Import gravity model. Canada

### **1 Introduction**

Over the last twenty years Canada's trade in cultural goods has remained relatively steady between its numerous key-trading partners such as the United States, France and the United Kingdom. However, despite the domination of key trading partners, other countries such as China, Mexico and India have steadily increased their balance of trade in cultural goods with Canada, specifically in regards to imports. Between the years of 1996 and 2010 combined imports of cultural goods to Canada from China, Mexico and India have more than quadrupled (Statistics Canada 2013b). Notably, during the same period, the immigration from these countries has more than doubled as well (Statistics Canada 2011d).

Canada has often been described as a mosaic of nationalities, which can be confirmed by observing the population statistics (OECD 2013, Head and Ries 1998). As a young nation with a vast geographical area and a

relatively small population (3.7 people/km<sup>2</sup>) Canada has become what it is today thanks to the substantial influx of immigrants from around the world and their descendants. According to Statistics Canada (2011d) in merely 15 years the proportion of foreign-born population has increased from 17.4% in 1996 to 20.6% in 2011, increasing in part due to foreign-born residents from countries such as China, India, and South Korea more than doubling over this period. Within OECD countries, Canada ranks sixth in the world in terms of foreign-born population (OECD 2013). One spot behind New Zealand, which has comparable statistics, which increased from 17.2% in 1996 to 22.4% in 2012 (OECD 2013). With a constant stream of new inhabitants also comes the longing for familiar goods and diversification of trade. When emigrating from other nations many people still keep and long for, to a certain extent, their language and ties to the local culture (Girma and Yu 2002). Along with the immigrant population the import of cultural goods have also increased over the same period of time from just over 3 billion to over 3.7 billion with a peak of 4.1 billion in 2008 (Statistics Canada 2013a). The relationship between immigration and the trade of cultural goods is further discussed later in this chapter.

According to the 2011 National Household Survey there were people from more than 200 ethnic origins living in Canada, with one in five residents being foreign born (Statistics Canada 2013a). The official promoting of multiculturalism in Canada started in 1971 when it was the first country in the world to adopt and thrive towards multiculturalism as government policy (Government of Canada 2012). This policy of multiculturalism «ensures that all citizens can keep their identities, can take pride in their ancestry and have a sense of belonging» (Government of Canada 2012, ch. 2).

Researching the factors that influence the level of cultural trade, specifically imports, between Canada and its constant top cultural trade partners between the years 1996 and 2010 (Australia, Belgium, China, France, Germany, India, Italy, Japan, Mexico, Singapore, South Korea, Spain, Switzerland, Taiwan and the United Kingdom) will give further insight into whether immigration levels influence Canada's imports of cultural goods from specific countries. Although there are a fair amount of studies of the relationship between immigration and trade (Head and Ries 1998, Dunlevy and Hutchinson 1999, Girma and Yu 2002, Faustino and Peixoto 2013), including one previous study focusing on Canada (Head and Ries 1998), there is still very limited literature that centres specifically on immigration and trade of cultural goods. Moreover, understanding the factors that drive the import of cultural goods is not only interesting for policy makers but also important in terms of recording the cultural diversity and Canadian consumers.

There have been numerous studies investigating immigration and bilateral trade between nations but only a handful focus specifically on cultural goods. Despite the growing popularity of research in the field of cultural

economics a study that focuses specifically on the relation between cultural trade and immigration seems to be missing. This research innovates in two different ways: first it contributes to current research in international trade of cultural goods by giving further indication of the factors influencing the cultural imports and ultimately the consumption of cultural goods from specific countries. Such information could eventually be used for creation of cultural trade policies on cultural trade deficits and cultural diversity. The main societal gain of this research is the focus of cultural diversity in cultural consumption, which could be used by policymakers to develop ad-hoc policies to preserve and sustain cultural diversity. Cultural diversity and its sustainability are more and more relevant in a multi and inter-cultural society.

Second, it innovates in the method, because the above mentioned relationship is investigated through the use of a linear regression model, specifically an augmented version of the gravity model which uses variables such as the level of cultural goods imports, gross domestic product (GDP), gross domestic product per capita (GDP per capita), immigration stock, geographic distance, cultural distance and common official language.

This study aims to research whether the population of ‘first generation’ (Statistics Canada 2011b) Canadians (born in a foreign country) has an influence on the level of cultural goods imported into Canada. In this context, we refer ‘first generation’ as persons born outside the Canadian borders as citizen of foreign country and currently residing in Canada.

The structure of this paper is as follows. Paragraph 2 provides the aims and the objectives of this research while Paragraph 3 presents an overview of the gravity model, which will be used in this study, and the presentation of variables proposed in this research. Empirical results of the tests run are presented in Paragraph 4. Finally, the paper finishes with Paragraph 5, which presents a discussion of the results, conclusions and main limitations.

## 2 Aims and Objectives

This paper explores the relation between the import of cultural goods into Canada from its constant top trading partners (Australia, Belgium, China, France, Germany, India, Italy, Japan, Mexico, Singapore, South Korea, Spain, Switzerland, Taiwan and the United Kingdom) between the years of 1996 and 2010 and the number of first generation foreigners residing in Canada (Statistics Canada 2011b; 2013a; 2013b). This relationship is investigated through the use of a linear regression model, specifically an augmented version of the gravity model which uses variables such as the level of cultural goods imports, gross domestic product (GDP), gross domestic product per capita (GDP per capita), immigration stock, geographic

distance, cultural distance and common official language. It is important to note that the United States of America has been excluded in this research due to its dominance of trade in cultural goods with Canada. The hypothesis of this research is:

H: The level of first generation immigrants in Canada have an effect on the level of cultural goods imported into Canada for the years 1996 to 2010.

There have been numerous studies investigating bilateral trade between nations. However, despite the growing popularity of research in the field of Cultural Economics a focus on specifically cultural trade still remains limited. This study aims to identify which factors and if possible to what extent they influence the level of cultural trade, specifically imports, between Canada and its top 15 cultural trade partners. In order to conduct this research variables such as multicultural population make-up, cultural dimensions and spoken languages, which are not traditionally considered in most studies regarding bilateral trade, will be taken into account in addition to further commonly used variables.

### 3 Literature Review

The definition of cultural goods varies immensely. It can include and exclude goods from numerous of the cultural industries depending on the nation or organisational definition. This study will exclusively use the definition recognised by Statistics Canada due to this study's focus on the import of cultural goods into Canada. According to Statistics Canada cultural goods include, «original and mass produced goods which contain culture content.... Culture goods include creative goods that warrant intellectual property rights and goods, which support creation, production or transmission of other creative goods. Culture goods include books, magazines, newspapers, postcards, calendars, films, videos, digital videodiscs (DVDs), sheet music, compact discs (CDs), cassettes, vinyl long-playing phonograph records (LPs), paintings (original and reproductions), photographs, sculptures, ornaments and figurines, architectural plans, designs and drawings, advertising materials, museum exhibits, coin and stamp collections, and antiques. Unrecorded media, such as blank CDs, are not included». (Cultural goods - Statistics Canada 2012, ch. 1).

International cultural trade plays an important role in the world's economy. In 2002 it was recorded that 1% of total global trade was core cultural goods (UNESCO 2005). Additionally, trade in cultural goods is one of the most internationalised markets (Schulze 2003). Although this percentage has remained relatively stable, household expenditures of culture and leisure have increase substantially in the last 30 years in developed nations

such as the United States, France, the United Kingdom and Canada (OECD 2007). According to Disdier et al. (2009) this growth in consumption and ultimately rise in the imports of cultural goods can be explained by increases in income, the development of leisure and cultural tourism, as well as revolutionary emergence of the Internet and information society.

Despite the growth of cultural economics there is limited academic literature regarding the trade of cultural goods in relation to other sectors. Earlier literature seems to focus predominantly on the bilateral trade of cultural goods, especially between Canada and the United States. This can be seen in Marvasti and Canterbury (1992) where they investigated the determinants of bilateral trade between Canada and the United States over a series of time between 1962 and 1987. This study specifically focuses on the trade of cultural products such as recordings, periodicals, books, and newspapers. Additionally, Kesten (1992) similarly focuses on trade relations Canada and the United State by analysing provisions of the North American Free Trade Agreement (NAFTA) for trade in Art. Marvasti (1994) continues on a similar topic by investigating «the determinants of intra-industry trade patterns in the world» (p. 135) and focusing on books, newspapers, music recordings and film with data from 1985.

In regards to cultural goods and trade theory, Schulze (1999) investigates the extent to which new trade theory could be applied to explaining the trade in Art. Schulze (1999) makes a clear distinction between unique and reproducible art, choosing to focus solely on unique art such as sculptures and paintings. This is due to his argument that unique art possesses fairly different characteristics to reproducible Art.

In regards to international trade in general, not specifically focused on cultural goods, there have been some studies focusing on variables such as linguistic proximity, past colonial links and immigration. For example, Boisso and Ferrantino (1997) examines potential determinates of trade such as economic distance, cultural distance, openness and linguistic proximity. They extended the basic trade-flow gravity equation with dummy variables indicating whether the trading partners share a common language and its linguistic proximity, religion, and colonial past with most of them finding that these variables have significantly positive effects on the magnitude of international trade flows.

While Umana Dajud (2013) focuses on the impact of politics on trade flows using empirical analysis. The empirical results indicate that political differences have an impact on bilateral trade that is robust to a wide range of econometric specifications. However, the impact of political differences on trade flows vanishes when the costs of reducing the latter become fairly important.

Similarly, Eichengreen and Irwin (1998) attempt to analyse the impact of history on trade using the gravity model. According to these authors both theory and evidence suggest that history plays a role in shaping the

direction of international trade. Their approach innovated in the methodology because the standard gravity-model formulation neglects the role of historical factors and suffers from omitted-variables bias. Because there are reasons to anticipate a positive correlation between the predominant direction of trade flows in the past and membership in preferential arrangements in the present, there may be a tendency to spuriously attribute to preferential arrangements the effects of historical factors and to exaggerate the influence of the former.

Wagner et al. (2002) discuss immigration and trade, in their research they use a gravity model to analyse bilateral trade patterns with a focus on Canada. These authors analysed the link between immigration, imports, and exports and estimated the immigrant effects for Canada using cross-province variation in international trade and immigration patterns. What is more, they derive an alternative functional form capturing the relationship between immigration and trade based on the proposition that immigrants use their connections and superior 'market intelligence' to exploit trade opportunities that non-immigrants do not access.

One of the few papers that focus specifically on cultural trade is by Disdier et al. (2009). Disdier et al. (2009) investigates the determinants of bilateral trade in cultural goods between 239 countries between the years 1989 and 2005. Their aim is to study whether the trade of cultural goods differs from other goods by using the United Nations COMTRADE database. They find that the trade flows of cultural goods seem to be generally impacted by the same variables as goods in general. For geographic distance, the results are negatively correlated while a shared common language appeared to foster bilateral trade flows, especially in terms of books and newspapers.

Canada's top cultural trading partner in regards to imports for at least the past a 15 years is its neighbour to the south, the United States (Statistics Canada 2011). This comes as little surprise due to the country's close proximity, common language and the dominance of American cultural around the world. In part due to the cultural dominance from the United States and as a way of protecting Canadian culture and diversity, numerous cultural policies are in place in Canada regarding cultural goods and specifically the import of such goods (Marvasti & Canterbury 2005). They focus specifically on the exports of US motion pictures, 33 countries are studied over the period of 1991 to 1995. Empirical evidence from the gravity model of trade revealed that shared common language, education and religion all have a positive impact on exports. Such protectionist policies include actions such as content quotas, tax restrictions on imports, and the exemption of cultural goods in free trade agreements such as NAFTA (North American Free Trade Agreement) (Acheson & Maule 2006).

The most recent article regarding the trade of cultural goods, by Park

(2014), uses the gravity model of trade to study the determinants of Korean broadcasting exports. In addition to generally used variables in the gravity model, determinants such as the effects of economic development and cultural proximity are used. Park finds that ‘relative economic development of the export country and the market size of the import country are important determinants of cultural trade’ (2014, p. 83). Interestingly, unlike in many previous studies, geographic distance was not significant.

Due to Canada’s diverse cultural make-up and growing number of new immigrants it is interesting to investigate whether cultural diversity influences the import of cultural goods to Canada. Therefore, data reflecting the multicultural make-up of Canada is incorporated into this research. There are already some studies that look at similar subjects such as the relationship between trade and immigration. Rauch and Trindade (2002) investigated trade between China and countries with large Chinese populations using the gravity equation. These authors found that ethnic Chinese networks, proxied by the product of ethnic Chinese population shares, increased bilateral trade more for differentiated than for homogeneous products. This suggests that business and social networks have a considerable quantitative impact on international trade by helping to match buyers and sellers in characteristics space, in addition to their effect through enforcement of community sanctions that deter opportunistic behaviour. Furthermore, Girma and Yu (2002) focus on immigration to the UK and international trade. According to these authors immigrants elevate bilateral trade due to two main reasons: «first, immigrants bring with them a preference for home-country products and second, immigrants can reduce transaction costs of bilateral trade with their home countries» (p. 115). The empirical research suggests that exports are positively impacted by immigration from non-Commonwealth countries while the levels of immigration from Commonwealth countries does not have a significant impact on exports. These findings could be due to a lower amount of new information brought by immigrants from former colonies that could potentially reduce the transaction costs of bilateral trade between the UK and their home countries. Furthermore, the study also finds immigration from non-Commonwealth countries positively impacts the level of imports.

## 4 Methodology

### 4.1 Gravity model

The gravity model of trade is originally inspired by Newton’s gravity equation (Gómez-Herrera 2013). Since the formative developments of the ‘gravity equation’ by Jan Tinbergen in (1962) the model has been used to study international trade on the bases of the size of trade flows between two



countries, the economic scale usually measured by GDP and the distance between two countries. It has been widely used and augmented in the past 50 years; in its most basic form the model links trade flows with the economic size of the countries and the distance between them. In its simplest form, the logic of the model is that the economic size of countries have a positive impact on the demand and supply of traded goods while distance, which can represent transaction costs, information costs and cultural proximity, amongst other forces, impacts trade negatively (Schulze 1999). The basic gravity model for trade between two countries is as follows:

$$T_{ij} = A [(Y_i Y_j) / D_{ij}]$$

Within this model  $T_{ij}$  is equal the volume of trade (import, export or bilateral) between country  $i$  and country  $j$ ,  $Y_i$  is the economic mass of country  $i$  (usually GDP),  $Y_j$  is the economic mass of country  $j$  (usually GDP),  $D_{ij}$  is the calculated distance between country  $i$  and country  $j$  and  $a$  is a proportionality constant. The model can also be shown in the log linear form of the standard gravity equation as:

$$\ln T_{ij} = a + b_1 \ln GDP_i + b_2 \ln GDP_j + b_3 \ln D_{ij} + \epsilon_{ij}$$

Through efforts over the last 50 years the gravity equation has expanded and taken various forms to satisfy the needs of numerous studies such as the ones previously discussed. Consequently, several estimation methods have been explored in past research. The most traditional estimation method of the gravity method is the linear multiplicative method using Ordinary Least Squares (OLS). When using OLS it is suggested that logarithms are taken on both sides in which variables such as trade, GDP and distance are entered into the regression in natural logarithms while dummy variables are entered as an one/zero value (Cyrus 2012). This method can be used assuming homoscedasticity and no incidents of zero trade flows in trade data (Gómez-Herrera 2013). Since this study satisfies the above requirements the method used for the gravity model is OLS.

According to Santos Silva and Tenreyro (2006) in the presence of heteroskedasticity and zero trade flows linear models such as the OLS estimation may not produce reliable results and non-linear models should be used. Gómez-Herrera (2013) further support this point with empirical results that prove that results from nonlinear estimators are more accurate when heteroskedasticity is present in data, that results from linear equations. According to Gómez-Herrera (2013) the most frequently used nonlinear estimation methods are: Nonlinear Least



Squares (NLS), Feasible Generalised Least Squares (FGLS), Heckman sample selection model and Gamma and Poisson Pseudo Maximum Likelihood (GPML and PPML).

#### 4.1.1 Dependent variable. Trade of cultural goods

This study uses the imports of cultural goods to Canada over the years 1996 to 2010 as the dependent variable. The data on the trade of cultural goods in Canada is available for free online from the Statistics Canada website under the catalogue no. 87-007-X. For this research cultural imports from Canada's top 15 constant cultural trade partners for imports are evaluated. The years available for research are 1996 to 2009; for future research this time frame can potentially be extended depending on the availability of statistical archives following inquiry with Statistics Canada. It is important to note that the collected data only includes the import of cultural goods. Culture services, which are defined as «intangible products such as performances and broadcasts» by Statistics Canada (2004, p. 6), are not included in this study.

#### 4.1.2 Independent variables

The following independent variables were used in this study:

- Immigration stocks. This data represents the number of people living in Canada in a specific year by foreign place for birth. It is available for a large period of years and is collected every five years through the national census survey. Research by Head and Ries (1998) and Girma and Yu (2002) explores immigration stocks as an independent variable used within the Gravity Model. Pioneering Head and Ries (1998) use Canadian and American data in their study, finding that immigration has a significant positive relationship on Canadian bilateral trade. Girma and Yu conduct a similar study with data from the UK, while analysing trade with both Commonwealth and non-Commonwealth nations. Their findings suggest a robust relationship between the stock of immigrants from non-Commonwealth countries and the UK's exports. Our research follows in the footsteps of both Head and Ries (1998) and Girma and Yu, (2002) by taking it one step further to explore the relationship between immigration stocks and the trade of cultural goods.
- Geographic distances. It measures the geographic distances between two countries. In the case of this research it is used to measure the distance between Canada and its trading partners. The variable not only represents distance but also acts to a certain extent as a proxy for transportation costs involved in trade (Gómez-Herrera 2013). Consequently,

in accordance with results from previous research (Melitz 2008) a larger recorded geographical distance between Canada and a trading partner is predicted to have a negative impact on the trade of cultural goods.

- GDP is generally used as a proxy measurement of a country's economic size (Gómez-Herrera 2013). Since the variable is recorded per year it is the total market value of all final goods and services produced within the year. It is generally assumed that the wealthier a country is, the more open to international trade they will be.
- GDP per capita. About half of the studies reviewed in this research use some form of a variable to represent the standard of living and per capita purchasing power. The most frequently used proxy for capital-labour intensities is GDP per capita (Gómez-Herrera 2013). It is presumed that the higher the purchasing power of a country's inhabitants the larger the volume of trade will be (Qu and Han 2011).
- Cultural distance. In addition to the spatial distance between countries, which is calculated with the variable geographic distance, Marvasti and Canterbury (2005) noted the importance of also accounting for the effect of a nonphysical distance. Cultural distance is used as an indication of the cultural differences between Canada and its trading partners. Previous research has found that the larger the cultural distances between trading partners the more negatively trade flows will be influenced (Cyrus 2012).

#### 4.1.3 Dummy variables – shared official common language

Dummy variables are included in most models to capture a series of historical, geographic and trade factors that can influence trade. They are regarded as stable over time and are measured on a zero-one scale, one meaning that the variable is present; zero indicating that it is not. Commonly used dummy variables include: shared official common language, same coloniser, shared border and trade agreement. In the early stages of this research it was planned to use the four previously mentioned dummy variables. However, after further exploration of the data set two obstacles were presented. Firstly, within the data of the countries studied collinearity between two or more variables was present, causing a singular matrix error. Ultimately, this was due to one or more overlaps of the dummy variables for countries such as the United Kingdom and France where the dummy variables coloniser and shared official common language both had values of one. Secondly, the number of regressors was too large for the number of observations being tested, ultimately leading to the error "insufficient number of observation". Consequently, this research only makes use of one dummy variable: shared official common language.

The variable of official common language shared between Canada and trading partners is recorded if both have either French or English as an

official language. This was chosen as a variable because language ties can facilitate business relations and reduce transaction costs between trade partners. Furthermore, a shared language could also indicate past historical ties and cultural similarities. Past research has verified that a shared language can have a positive impact on trade between two nations (Dunlevy and Hutchinson 1999, Hutchinson 2002, Melitz 2008, Qu and Han 2011). Data on shared official common language was sourced from the 'Distance' database of CEPII (Centre d'Etudes Prospectives et d'Informations Internationales).

#### 4.2 Construction of the regression equation

As mentioned in previous sections the gravity model, which is a multiple regression model, has been used in numerous past studies regarding international trade. According to Qu and Han it remains a common method due to three factors: «simple principles, available data and models easy to empirical study» (2011, p. 12). Like many of the other studies this research uses an augmented version of the model with several explanatory variables. This study uses the following regression:

$$\ln imports_{jt} = a + b_1 \ln gdp_{it} + b_2 \ln gdp\_p_{it} + b_3 \ln gdp_{jt} + b_4 \ln gdp\_p_{jt} + b_5 \ln geodist_{ij} + b_6 \ln immstock_{ijt} + b_7 \ln cultdist_{ij} + b_8 d1lang_{ij} + \varepsilon$$

Where:

$a$  is the constant;  $\varepsilon$  is the error term.

$i$  represents Canada

$j$  represents the trading partner countries included in this research

**imports** represents the total imports of cultural goods from country  $j$  to country  $i$  (Canada) in year  $t$ .

**gdp<sub>it</sub>** is the GDP of country  $i$  (Canada) in year  $t$

**gdp\_p<sub>it</sub>** is the GDP per capita of country  $i$  (Canada) in year  $t$ .

**gdp<sub>jt</sub>** is the GDP of country  $j$  in year  $t$

**gdp\_p<sub>jt</sub>** is the GDP per capita of country  $j$  in year  $t$ .

**geodist<sub>ij</sub>** is the physical distance between country  $i$  and country  $j$ .

**immstock<sub>ijt</sub>** is the number of first generation Canadians living in country  $i$  from country  $j$  at time  $t$

**cultdist<sub>ij</sub>** is the calculation of cultural distance between country  $i$  and country  $j$

**d1lang<sub>ij</sub>** is a dummy variable to indicate whether country  $i$  and  $j$  share an official common language.

The statistical package EViews 8.0 (Econometric Views) was used to run the augmented model using the OLS method. The data set for this analysis covers a period of 15 years (1996 to 2010) and a total of 225 observations. In addition to Canada the 15 countries included in this analysis are countries that have remained in the list of top 20 countries for imports of cultural goods to Canada, these countries are: China, France, the United Kingdom, Germany, Italy, Japan, Singapore, Spain, Mexico, Belgium, South Korea, Taiwan, Switzerland, India and Australia.

## 5 Results

As detailed in Paragraph 2, the hypothesis we want to test is whether immigration can stimulate the imports of culture goods to Canada because immigrants bring in their home country preferences for culture goods, ultimately increasing imports of culture goods. The first test uses all 15 countries included in this research. This is followed by a secondary test where we try to understand if there are some countries that dramatically decrease the R-squared. Within this research a relationship between variables is considered as significant at a significance level of 5%.

### 5.1 Regression results for all 15 countries

We put the culture goods trade panel data between Canada and all 15 countries into the model, and used OLS regression. In Table 1 we see that the  $R^2$  obtained is 0.5699, this means that 56.99% of the variance of the dependent variable (culture goods imports) can be explained by the independent variables (GDP, GDP per capita, geographic distance, immigration stock, cultural distance and shared official common language). The first results show that the independent variables GDP and GDP per capita of Canada are both insignificant. The OLS regression results suggest that exporter country GDP and GDP per capita both have highly statistically significant positive effects on Canada's import of culture goods. As expected the independent variable of geographic distance has a negative effect on imports of culture goods, the coefficient reported is 0.287 and is statistically significant. The most interesting independent variable in this research is immigration stock, which has a coefficient of 0.512 and a P-value of 0.00. Indicating that immigration stock has a positive effect on the import of cultural goods to Canada. Lastly, cultural distance and the dummy variable shared official common language both have positive coefficients and are highly significant. It is important to note that in multiple regressions, the coefficients describe the effect of independent variables, if the effects of the other independent variables are held constant.

Table 1 - OLS regression results for all 15 countries

Dependent Variable: Imports of Cultural Good – all 15 countries

Method: Panel Least Squares

Sample: years from 1996 to 2010 Periods included 15 Cross-sections included 15

Total panel (balanced) observations: 225

$$\text{LNIMPORTS} = C(1) + C(2) * \text{LNGDP} + C(3) * \text{LNGDP\_PCA} + C(4) * \text{LNGDP} + C(5) * \text{LNGDP\_P} + C(6) * \text{LNGEODIST} + C(7) * \text{LNIMMSTOCK} + C(8) * \text{LNCULTDIST} + C(9) * \text{D1LANG}$$

	Coefficient	Std. Error	t-Statistic	Probability
Constant	-63.00620	75.96738	-0.829385	0.4078
GDP Canada	3.396135	4.768891	0.712144	0.4771
GDP per capita Canada	-4.299414	5.398268	-0.796443	0.4266
GDP	0.574879	0.083920	6.850335	0.0000
GDP per capita	0.429056	0.065400	6.560472	0.0000
Geographical Distance	-0.287280	0.141777	-2.026274	0.0440
Immigration Stock	0.511910	0.063546	8.055736	0.0000
Cultural Distance	0.561783	0.073133	7.681617	0.0000
Common Language	0.832404	0.144044	5.778805	0.0000
R-squared	0.569900	Mean dependent variable		9.909053
Adjusted R-squared	0.553970	S.D. dependent variable		1.256718
S.E. of regression	0.839305	Akaike info criterion		2.526692
Sum squared residual	152.1574	Schwarz criterion		2.663336
Log likelihood	-275.2529	Hannan-Quinn criterion		2.581842
F-Statistic	35.77610	Durbin-Watson statistic		0.208748
Prob (F-Statistic)	0.000000			

## 5.2 Regression results for 13 countries (excluding India and Australia)

In addition to running the model on all 15 countries we decided to try to understand if there were some specific countries that dramatically decreased the R-square. Ultimately, we found that India and Australia, the countries with the smallest overall exports of culture goods to Canada over the 15-year period studied, decrease the R-square considerably. Consequently, we ran a regression analysis with the data from 13 countries (excluding India and Australia). The regression results are visible in Table 2. In this test the  $R^2$  obtained is significantly higher with a value of 0.8236. Ultimately this means that the model can explain 82.36% of the variance of the dependent variable culture goods imports when tested with 13 countries instead of all 15. This means that the reduced data set fits the regression model well and has a rather good capability to predict. Similarly to the above discussed regression results with all 15 countries, the independent variables for Canada's GDP and GDP per capita both present insignificant results. Additionally, while exporter country's GDP is positively correlated,

GDP per capita is negatively correlated, and both are significant. Interestingly geographic distance is now positively correlated; this is contrary to expected results. Furthermore, immigration stock and shared official common language are both positively correlated and significant. Lastly, the independent variable of cultural distance produces insignificant results.

Table 2 - OLS regression results for 13 countries (excluding India and Australia)

Dependent Variable: Imports of Cultural Good – 13 countries  
 Method: Panel Least Squares  
 Sample: years from 1996 to 2010 Periods included 15 Cross-sections included 13  
 Total panel (balanced) observations: 195

$$\text{LNIMPORTS} = C(1) + C(2) * \text{LN}GDP_{PCA} + C(3) * \text{LN}GDP\_PCA + C(4) * \text{LN}GDP + C(5) * \text{LN}GDP\_P + C(6) * \text{LN}GEODIST + C(7) * \text{LN}IMMSTOCK + C(8) * \text{LN}CULTDIST + C(9) * D1LANG$$

	Coefficient	Std. Error	t-Statistic	Probability
Constant	-72.67999	49.15687	-1.478532	0.1410
GDP Canada	3.513425	3.084868	1.138923	0.2562
GDP per capita Canada	-3.687811	3.492005	-1.056073	0.2923
GDP	0.842158	0.053564	15.72261	0.0000
GDP per capita	-0.642616	0.070377	-9.131091	0.0000
Geographical Distance	0.473367	0.111979	4.227301	0.0000
Immigration Stock	0.201471	0.050255	4.009008	0.0001
Cultural Distance	-0.055981	0.077252	-0.724656	0.4696
Common Language	1.717264	0.097777	17.56315	0.0000
R-squared	0.823587	Mean dependent variable		10.14369
Adjusted R-squared	0.815999	S.D. dependent variable		1.178330
S.E. of regression	0.505448	Akaike info criterion		1.518311
Sum squared residual	47.51882	Schwarz criterion		1.669372
Log likelihood	-139.0353	Hannan-Quinn criterion		1.579474
F-Statistic	108.5431	Durbin-Watson statistic		0.484205
Prob (F-Statistic)	0.000000			

## 6 Conclusion and recommendations

### 6.1 General discussion

The empirical regression results suggest that Canada’s GDP and GDP per capita are insignificant to predicting the import flow of cultural goods. This is interesting because this study is specifically focusing on imports that could reflect national consumption and purchasing power. Nevertheless in this case they are not considered as significant variables. Alternatively, GDP of the export countries is positively correlated with imports and is

highly significant. Suggesting that the economic masses of the export countries are an important determinant of the flows of imported cultural goods to Canada. Results for GDP per capita were all significant however they had mixed effects depending on the data set used.

According to theory, the increasing geographic distance is expected to have a negative impact on trade as a result of increases in transport and trade costs. In this study, geographic distance was negatively correlated in the regression analysis using all 15 countries with a significant P-value however; the second test using a smaller data group of 13 countries produced a significant positive correlation. As for cultural distance it is also expected to have a negative correlation with trade. Meaning that a larger the cultural distance is expected to impact trade negatively. The empirical results are mixed, showing an unexpected positive correlation for the test of all 15 countries and insignificant results for the test using 13 countries.

Considering now the most important variable for this research, immigration stock, the coefficients show a positive correlation between immigration stock and the imports of cultural goods when significant.

Table 3 - Regression estimation results

Variables	All 15 Countries		13 countries (no India and Australia)	
	Coefficient	P-value	Coefficient	P-value
Constant	-63.00620	0.4078	-72.67999	0.1410
lnGDPCA	3.396135	0.4771	3.513425	0.2562
lnGDP_PCA	-4.299414	0.4266	-3.687811	0.2923
lnGDP	0.574879	0.0000	0.842158	0.0000
lnGDP_P	0.429056	0.0000	-0.642616	0.0000
lnGEODIST	-0.287280	0.0440	0.473367	0.0000
lnIMMSTOCK	0.511910	0.0000	0.201471	0.0001
lnCULTDIST	0.561783	0.0000	-0.055981	0.4696
d1lang	0.832404	0.0000	1.717264	0.0000
F-statistic	P-value	0.0000	P-value	0.0000
Goodness of fit	R-squared	0.5699	R-squared	0.8236

## 6.2 Conclusions

The empirical analysis provides results that create a first step into the research of the relationship between immigration and the trade of cultural goods. It seems that countries demographics have a significant effect on the import of cultural goods. Results show that as predicted immigration stock is positively correlated with the imports of cultural goods to Canada and highly significant. This means that the demand for cultural goods in a country can be dependent largely on the immigration statistics. At least,



this was the outcome in the context of Canada. Moreover, further conclusions could be derived from these results when looking at immigration in detail. Canada is a country with a relatively large immigrant population, which would suggest that when the imports are positively correlated with levels of foreign-born population, it could be concluded that Canada has not only a vibrant multicultural population but also a varied demand for cultural goods as a result. Naturally, this is a derived conclusion based on the results we have in this study.

### 6.3 Limitations

As highlighted by Towse (2011) the biggest limitation involved with studies focusing on the trade of cultural good is the difficulty of obtaining exact measures of actual trade. Furthermore, as previously discussed the import levels only calculate trade that has physically crossed the border, which means that digitized content is not counted. Consequently, the trade numbers are possibly underestimated and it is important to keep in mind that the above estimations may not reflect the complete picture. Additionally, in regards to data limitations the estimation of immigration between census years might not reflect the reality 100% due to the unavailability of precise data.

## Bibliography

- Acheson, Keith; Maule, Christopher (2006). «Culture in international trade». In: Ginsburgh, Victor A.; Throsby, David (eds.), *Handbook of the economics of art and culture*. Amsterdam: North-Holland, pp. 1141-1182.
- Boisso, Dale; Ferrantino, Michael (1997). «Economic distance, cultural distance, and openness in international trade: Empirical puzzles». *Journal of Economic Integration*, 12(4), pp. 456-484.
- CEPII (2011). GeoDist. Availability online: [http://www.cepii.fr/CEPII/en/bdd\\_modele/presentation.asp?id=6](http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6) (2015-09-15).
- Cultural goods (2010). *Statistics Canada*. Available online: <http://www.statcan.gc.ca/pub/87-007-x/2011001/part-partie1-eng.htm> (2013-06-19).
- Cyrus, Teresa L. (2012). «Cultural distance and bilateral trade». *Global Economy Journal*, 12(4), pp. 1-25.
- Disdier, Anne-Célia; Tai, Silvio H.T.; Fontagné, Lionel; Mayer, Thierry (2009). «Bilateral trade of cultural goods». *Review of World Economics*, 145(4), pp. 575-595.
- Dunlevy, James A.; Hutchinson, William K. (1999). «The impact of immigration on American import trade in the late nineteenth and early twentieth centuries». *The Journal of Economic History*, 59(4), pp. 1043-1062.

- Eichengreen, Barry; Irwin, Douglas I. (1998). «The Role of History in Bilateral Trade Flows». In: Frankel, Jeffrey A (ed.), *The Regionalization of the World Economy*. National Bureau of Economic Research Project Report series. Chicago: University of Chicago Press.
- Faustino, Horácio C.; Peixoto, João. (2013). «Immigration-trade links: Evidence from Portugal». *Ekonomiska Istrazivanja*, 26(1), pp. 155-170.
- Girma, Sourafel; Yu, Zhihao (2002). «The link between immigration and trade: Evidence from the United Kingdom». *Weltwirtschaftliches Archiv*, 138 (1), pp. 115-130.
- Gómez-Herrera, Estrella (2013). «Comparing alternative methods to estimate gravity models of bilateral trade». *Empirical Economics*, 44(3), pp. 1087-1111.
- Government of Canada (2012). *Canadian multiculturalism: An inclusive citizenship*. Available online at <http://www.cic.gc.ca/english/multiculturalism/citizenship.asp> (2015-09-15).
- Head, Keith; Ries, John (1998). «Immigration and trade creation: Econometric evidence from Canada». *The Canadian Journal of Economics / Revue Canadienne d'Economie*, 31(1), pp. 47-62.
- Hutchinson, William K. (2002). «Does ease of communication increase trade?: Commonality of language and bilateral trade». *Scottish Journal of Political Economy*, 49(5), pp. 544-556.
- Kesten, Myles (1992). «The Canada-U.S. Free Trade Agreement: Provisions Directly and Indirectly Affecting Trade in Cultural Product». In: Towse Ruth; Khakee Abdul (eds.), *Cultural Economics*. Berlin: Springer, pp. 163-171.
- Marvasti, Akbar (1994). «International trade in cultural goods: A cross-sectional analysis». *Journal of Cultural Economics*, 18(2), pp. 135-148.
- Marvasti, Akbar; Canterbury, Ray (1991). «Intra-Industry Trade in Culture: The United States and Canada». *International Trade and Finance Association Proceeding*, pp. 159-174.
- Marvasti, Akbar; Canterbury, Ray (2005). «Cultural and other barriers to motion pictures trade». *Economic Inquiry*, 43(1), pp. 39-54.
- Melitz, Jacques (2008). «Language and foreign trade». *European Economic Review*, 52(4), pp. 667-699.
- OECD (2007). *Factbook 2007—economic, environmental and social statistics*. Paris: OECD Publishing.
- OECD (2013). *International Migration Outlook*. Paris: OECD. Available online: [http://www.oecd-ilibrary.org/social-issues-migration-health/international-migration-outlook\\_1999124x](http://www.oecd-ilibrary.org/social-issues-migration-health/international-migration-outlook_1999124x) (2015-09-15).
- Park, Young Seon (2014). «Trade in cultural goods: a case of the Korean wave in Asia». *Journal of East Asian Economic Integration*, 18(1), pp. 83-107.
- Qu, Ru-xiao; Han, Li-li (2011). *The Factors on Trade of Chinese Cultural Goods: an empirical analysis based on panel data*. Paper presented at the Chinese – Hungarian International Conference – Economics of Crisis, Education and

- Labour, 30th June -1st July 2011, Budapest, HG. [online] [http://www.econ.core.hu/file/download/sebawsh/QU\\_RUXIA0.pdf](http://www.econ.core.hu/file/download/sebawsh/QU_RUXIA0.pdf) (2015-09-15).
- Rauch, James E.; Trindade, Vitor (2002). «Ethnic Chinese networks in international trade». *Review of Economics and Statistics*, 84(1), pp. 116-130.
- Santos Silva, Joao; Tenreyro, Silvana (2006). «The log of gravity». *The Review of Economics and Statistics*, 88(4), pp. 641-658.
- Schulze, Günther G. (1999). «International trade in art». *Journal of Cultural Economics*, 23(1-2), pp. 109-136.
- Schulze, Günther G. (2003). «International trade». In: Towse, Ruth (ed.), *A handbook of cultural economics:International trade*. Cheltenham: Elgar, pp. 236 -244.
- Statistics Canada (2011b). *Culture Goods Trade: Data Tables*. Available online: <http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=87-007-X&chropeg=1&lang=eng> (2015-09-15).
- Statistics Canada (2011d). *Immigration and Ethnocultural Diversity in Canada*. Available online: <http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-010-x/99-010-x2011001-eng.cfm> (2015-09-15).
- Statistics Canada (2013a). *Permanent Residents, Foreign Students, Temporary Foreign Workers by Country of Last Permanent Residence, Country of Citizenship, and Country of Birth, 1980-September 2013* [Data file and code book]. Retrieved by email from Immigration Canada - Citizenship and Immigration, Statistics and Cost Recovery.
- Statistics Canada (2013b). *Culture goods trade for top twenty trading partners, 2003 to 2010*. Available online: <http://www.statcan.gc.ca/pub/87-007-x/2011001/t007-eng.htm> (2015-09-15).
- Towse, Ruth (2011). *A handbook of Cultural Economics*. Cheltenham: Elgar.
- Umana Dajud, Camilo (2013). «Political proximity and international trade». *Economics & Politics*, 25(3), p. 283-312.
- UNESCO (2005). *International flows of selected cultural goods and services, 1994-2003*. Montreal: UNESCO Institute for Statistics.
- Wagner, Don; Head, Keith; Ries, John (2002). «Immigration and the trade of provinces». *Scottish Journal of Political Economy*, 49(5), pp. 507-525.

## Sitografhy

- CHASS Canadian Census analyser (2014). Immigrant status and period of immigration and Place of Birth of Respondent. Available online: <http://dc1.chass.utoronto.ca/cgi-bin/census/1996/displayCensusCD.cgi?c=cip> (2015-09-15).
- Hofstede Center (n.d.). Available online: <http://geert-hofstede.com/faq.html> (2015-09-15).
- Statistics Canada (2001). Immigrant status and period of immigration and Place of Birth of Respondent. Available online: <http://www12.statcan.gc.ca>

gc.ca/english/census01/products/standard/themes/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=62124&PRID=0&PTYPE=55430,53293,55440,55496,71090&S=0&SHOWALL=0&SUB=0&Temporal=2001&THEME=43&VID=0&VNAMEE=&VNAMEF (2015-09-15).

Statistics Canada (2006). Immigrant status and period of immigration and Place of Birth of Respondent. Available online: <http://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=89424&PRID=0&PTYPE=88971,97154&S=0&SHOWALL=0&SUB=723&Temporal=2006&THEME=72&VID=0&VNAMEE=&VNAMEF> (2015-09-15).

Statistics Canada (2011). Total immigrants and period of immigration. Available online: <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/dt-td/Rp-eng.cfm?LANG=E&APATH=3&DETAIL=0&DIM=0&FL=A&FREE=0&GC=0&GID=0&GK=0&GRP=1&PID=105411&PRID=0&PTYPE=105277&S=0&SHOWALL=0&SUB=0&Temporal=2013&THEME=95&VID=0&VNAMEE=&VNAMEF> (2015-09-15).

Statistics Canada (2013). Culture goods trade. [Data file and code book]. Available online: <http://www.statcan.gc.ca/pub/87-007-x/87-007-x2011001-eng.htm> (2015-09-15).

