

The Korean Wave: Determinants and its Impacts on Trade and FDI*

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Abstract

Over the past decade, the Korean culture has become immensely popular across the globe, even in such distant countries as Peru and Ecuador. At the same time, exports of consumer merchandize by Korea to countries that are highly influenced by Korean Wave has increased, e.g., Korean cosmetics exports have increased by more than ten folds during 2004-2014. We construct two measures of Korean Wave: first, a panel data of Korean TV exports (including dramas, music, and entertainment shows) to each other country during 1997-2014, and second, a popularity index of the Korean pop culture in each other country in 2014, based on statistics, reports and survey results published by various Korean government agencies and institutions. We find that countries characterized by higher power distance, lower individualism, higher masculinity index (Hofstede et al., 2010), and closer religious proximity to Korea are more enthusiastic about (and import more) Korean TV programs. We then analyze the impact of the Korean Wave, and find that Korean merchandize exports to each other country respond strongly to lagged TV program exports in sectors characterized by consumer products, but insignificantly in most sectors of capital goods. Interestingly, Korean outward FDI in sectors characterized by high cultural content such as entertainment, broadcasting, education and restaurants are also positively influenced by Korean TV exports, but not in other sectors of low cultural content. The heterogeneous impacts across sectors support a causality effect of Korean Wave on merchandize exports and FDI.

Key Words: Korean Wave, Trade, FDI, Gravity Equation, Cultural Proximity.

JEL Classification: F14

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1 Introduction

Over the past decade, the Korean popular culture, especially the television dramas and music shows along with their associated stars, has become immensely popular across the globe, even in such distant countries as Peru and Ecuador. This phenomenon is called the “Korean Wave” (or “Han-Ryu” in Chinese), a term that was coined by the Chinese media in the late 1990s and is now commonly used worldwide. For example, in 2011, the French press *Le Monde* and *Le Figaro* reported with the headlines “Korean Wave Reaches Europe” and “Korean Wave Hits Zénith,” after the successful two-day K-pop (Korean popular music) concert in Paris.¹ In 2010, the America’s CNN published an article with the headline “Korean Wave of pop culture sweeps across Asia.”² Indeed, the sudden rise of the K-pop song *Gangnam Style* released in July 2012 — which quickly rose to the top in music charts of many countries such as the UK, France, Belgium, Spain, Denmark, Finland, Australia, Canada, US (number two on the *billboard Hot 100* for seven consecutive weeks), and so on — was not so surprising to the already existing K-pop fans all over the world.

Although K-pop is better known in the western world, it is the Korean soap operas that initially lead the wave in Asia and many countries in the Middle East and South America. The Korean Wave first began in China with the Korean drama series *What is Love All About?*, which was broadcast multiple times on the Chinese Central Television Station (CCTV) in 1997. The drama recorded a 15% audience share (second highest ever for a foreign program at that time), meaning that over 150 million Chinese watched it. Since then, the Chinese audience has become interested in other Korean dramas, actors/actresses as well as singers, as if they had discovered a whole new territory. Meanwhile, the arrival of the wave in Japan is traced back to 2004 when the NHK TV aired the Korean drama series *Winter Sonata*. The result was sensational, with a 22.5% audience rating. After then, the drama was given multiple encore runs, and for its fourth run the NHK aired it with Japanese subtitles to meet the audience request to preserve the Korean stars’ voice — which was very unusual for Japanese TV. Koreans were pleasantly surprised by this, because in Japan, Korean cultural contents had hardly received any attention previously despite the geographical proximity.

¹Tickets for the joint performance of Korean singers were all sold out within 15 minutes, and the 7,000-seat Le Zénith de Paris was fully packed with fans in their teens or 20s from all over Europe (the price was over 67 Euros per seat).

²In 2006 the Seattle Times also reported that ‘Han-Ryu – the Korean Wave – is rolling over Asia with pop music, TV dramas and movies that dazzle audiences from Tokyo and Beijing to Seattle.’

Similarly, many other Asian countries fell for Korean dramas and K-pop after a great success of some Korean drama series in 2002–2004 (Vietnam, Thailand, Singapore, Taiwan, Malaysia, Indonesia, Kazakhstan, Mongolia, Philippines, Uzbekistan, Myanmar, Cambodia, Kyrgyzstan, and Tajikistan). The popularity has since grown dramatically and spread beyond Asia to the Americas and the Middle East. Korean dramas have aired in Mexico, Peru, Ecuador, Panama, Bolivia, El Salvador, Costa Rica, and Puerto Rico, since 2009. Among those, Peru has the largest and most devoted fans. It is reported that Channel 7, one of the most influential national channels of Peru, aired Korean dramas, instead of the news, in its prime time slot. In Ecuador, one of the farthest countries from Korea, the Korean Wave started in 2009 with the drama series *Stairway to Heaven*, which records a phenomenal 55% audience rating. More surprisingly, in Cuba, the two drama series *Take Care of My Lady* and *My Wife is a Superwoman* recorded more than 80% audience ratings in 2012-2013. Last but not the least, in Iran, *Jewel in the Palace* was aired by IRIB (Islamic Republic of Iran Broadcasting), and it is reported by IRIB that it was ranked as the most popular drama from March to April in 2007, with 57 % audience rating and 97 % satisfaction.

Observing the rapid global spread of such cultural contents, this paper addresses two questions: (1) What are the determinants of the Korean Wave phenomenon? (Why are some countries enthusiastic about the Korean pop culture while some others are not?); (2) What are the economic impacts of this global diffusion of the Korean pop culture on merchandize trade? To this aim, we construct two measures of Korean Wave. The first is a panel data of Korean TV exports (including dramas, music, and entertainment shows) to each other country during 1997-2014. This measure, although objective, may significantly underestimate the extent of Korean culture export to a country, because many viewers (for example in China) watch these dramas on internet rather than TV networks. We thus construct a subjective popularity index of the Korean pop culture in each country for 2014 using criteria explained in Section 2. The TV program export data and the information we rely upon to construct the popularity index are sourced from statistics, reports and survey results published by various Korean government agencies and institutions. These measures help us quantify the rise of the Korean culture popularity, its reach and determinants. Using the cross-country cultural dimension measures of Hofstede et al. (2010), we find that countries with higher power distance, lower individualism, and higher masculinity index are more enthusiastic about (and import more) Korean culture. The Korean Wave also tends to be stronger in countries

with closer religious distance from Korea, while linguistic distance do not appear to matter.

We then analyze how such exports of Korean pop culture affect Korean merchandise trade and FDI flows across destinations and products. We find that with typical gravity factors controlled for, Korean merchandise exports to a country respond strongly to lagged TV program exports to the same destination, but mostly in sectors characterized by consumer products. These include, in UN Broad Economic Categories, food and beverages, and other consumer goods (in particular, semi-durable and non-durable goods). In contrast, trade in capital goods is not systematically affected by trade in culture contents. The pattern is similar if we use the popularity index as the measure of the Korean Wave instead of TV program exports. The effect is economically significant. For example, an increase in Korean TV program exports to a destination by 1% leads to an increase in exports of processed food and beverage for household consumption by 0.156%. Alternatively, the Korean aggregate exports increase by approximately 34.7% when the popularity index increases by one level. This corresponds to an economic value of about 199 billion US dollars in 2014 Korean annual exports.

We then look into the types of consumer goods that are likely to have been affected by Korean Wave based on the UN HS1996 classification at highly disaggregate levels. We find that Korean exports of most consumer goods increase with lagged TV exports. These include cosmetics, clothing, jewelry, air conditioners, refrigerators, laptops, desktops, and cellular phones. These are the consumer goods often put on display (indirectly advertised) in Korean dramas. For example, Korean cosmetics exports increase by 0.207% when its lagged TV exports to a destination increase by 1%. Other consumer goods that are less conspicuous on Korean drama settings, or that tend to be produced in foreign plants by Korean companies (and hence not directly exported from Korea) are not significantly affected: these include washing machines, vacuum cleaners, cooking appliances, line telephones, TV, and passenger vehicles.

Finally, we also analyze the impact of Korean Wave on Korean FDI. For obvious reasons, FDI in entertainment and broadcasting is heavily influenced by lagged TV exports. For each 1% increase in TV exports, FDI in these two sectors each increases by around 0.263%. Following that, FDI in education and restaurant also increases significantly with Korean TV exports (with an elasticity of 0.245 and 0.203, respectively). These two types of services provide direct consumption of Korean culture such as its language and cuisine, and hence are expected to grow with the Korean Wave.

It appears that more intense exposure to Korean culture also facilitates FDI in other business and personal services, including business support services, health/social services, wholesale/retail, and other personal services such as hair salons. On the other hand, FDI in estate, professional/research services, transportation, manufacturing, and mining, does not have a robust relationship with TV exports as expected. All in all, such heterogeneous impacts across sectors support a causality effect of Korean Wave on merchandize exports and FDI.

Indeed, spending a long time watching Korean dramas and music videos has led to a growing interest in Korean culture. This has eventually generated a strong preference for other Korean products such as cosmetics, food, fashion, electronics, and mobile phones.³ Such change of consumer preferences has occurred through several ways, as supported by numerous survey results and reports by the MOFA (Ministry of Foreign Affairs), KOTRA (Korea Trade-Investment Promotion Agency) and KOFICE (Korea Foundation for International Culture Exchange).⁴ First, foreign consumers form favorable national images of Korea while watching the dramas, as they naturally experience a chance to learn and appreciate the Korean culture. In the past, people tend to associate national images of South Korea negatively with the Korean War or North Korea, but nowadays such images are giving way to the charming, fun, and lively images of entertainments and the state-of-the-art technologies. Such a change of national image enhances consumer preferences for products with the “Made in Korea” label.

Second, Asian consumers tend to have stronger preferences for products that are advertised by their favorite stars. The survey results show that the top reason why Korean dramas and pop music are popular in other countries is attributed to attractive appearances of actors/actresses/singers. Using this psychological factor, many Korean companies hire popular Korean celebrities to advertise their products in highly affected countries. Lastly, watching what the celebrities are wearing, using, and eating in the dramas, the audience develops a desire to consume the same things. In fact, many Korean companies selling cosmetics, clothes, mobile phones, cars, refrigerators, washing machines, etc, often sponsor the production of TV dramas and engage in embedded advertising. The results have been immediate and highly effective. For example, the lipstick and facial cream that the main

³For example, people in Brunei spend one to four hours everyday watching Korean dramas, according to “2015 Global Trend in Korean Wave,” by Ministry of Foreign Affairs and Korea Foundation. Note that a Korean drama series typically constitutes of 16-50 episodes which runs about an hour each.

⁴See “Economic Impacts of Korean Wave, 2015” and “The 2015 Report on Korean Wave Overseas”, for example.

actress used were all sold out within several days in a Korean online shopping website for Chinese, when the Korean drama series *Descendants of the Sun* was released on the Chinese internet video website Iqiyi. In these ways, the Korean Wave has led to large increases in merchandise exports.

This paper is related to the literature studying the determinants and implications of cultural or information service flows. Hanson and Xiang (2011) study the export of the US motion picture and find that its intensive margin decreases in linguistic and geographical distance. In this case, these dissimilarities may capture both contractual costs and preference bias, since the physical transportation cost for films is minimal. Blum and Goldfarb (2006) further show that even for internet activities with no purchases involved, distance still has a dampening effect especially for taste-dependent services such as music and games. This suggests that preferences tend to differ with distance.⁵ The work by Bursztyn and Cantoni (2016) show that the incidental exposure to Western TV signals by residents in East Germany pre-unification tilts the ex-post consumption composition towards goods class with higher advertisement intensity, although the effect decays within a decade.

Another closely related is the literature which studies the role of information and cultural proximity on trade. Guiso et al. (2009) document that cultural factors can influence trust between countries, and show that lower trust reduces bilateral trade. Felbermayr and Toubal (2010) and Disdier and Mayer (2007) construct proxies for cultural proximity and show that the cultural flows have a positive influence on trade volumes. Rauch and Trindade (2002) and Wagner et al. (2002) find that ethnic networks facilitate information flow and help match foreign buyers and sellers, which promotes international trade by lowering search costs. Rauch (2001) and Combes et al. (2005) argue that business and social network not only help locate foreign partners but also maintain complicated business relationships and overcome cultural/linguistic barriers. Melitz and Toubal (2014) and Melitz (2008) show that the ease of communication, especially direct communication rather than the ability to translate, facilitates bilateral trade. Similarly, Cristea (2011) shows that high quality information flow realized by in-person business meetings increases international trade. In our paper, we will use the size of Overseas Korean residing in a country as a control for the network effect emphasized by the above literature. This helps us isolate the demand-side

⁵Ferreira and Waldfogel (2013) use data on popular music charts across countries and show that consumption bias towards domestic music has been substantially increased over the past decade.

information acceptance by the consumer as an important alternative determinant of trade.

The remainder of this paper is organized as follows. We explain in Section 2 how we construct the measures of the Korean Wave. In Section 3, we then document the development and analyze the determinants of the Korean Wave. Section 4 proposes four potential mechanisms through which the exports of Korean programs affect its merchandise exports/FDI, and Section 5 provides the empirical estimate of such impact. Section 6 concludes.

2 Korean Wave: The Measure

We construct two measures of Korean Wave. The first is based on the value/quantity of Korean TV program exports to a country, and the second is a subjective rating of the Korean culture popularity in a country based on our reading of a whole array of documents/reports/surveys.

Korean TV program exports. The export (and import) data of the Korean television programs are compiled from the *Annual Report on the Actual Condition of Korean Broadcasting Industry* (published annually since year 2000, but with data dating back to year 1997) by Korea Communications Commissions, a Korean government agency. This publication reports the total value and the number of episodes that are exported to and imported from each other country. It is further disaggregated by genre (drama, reality shows, music, documentary, sports, movies, etc.) and by the mode of broadcasting (terrestrial networks, or cable networks). This allows us to construct a panel data of TV program exports for year 1997–2004 to more than 100 destination countries.

The TV program exports (in value or quantity) likely will underestimate the actual popularity of the Korean pop culture, because culture contents could be consumed in many ways other than TV networks, including internet, or CDs and DVDs sold legally/illegally.⁶ In addition, the TV program exports may not fully reflect the audience ratings and the intensity of the popularity. Thus, we construct an alternative measure of Korean Wave based on our reading of the following reports, surveys, and supplementary documents. These include: (1) “2015 Global Trend in Korean Wave,” published by Ministry of Foreign Affairs and Korea Foundation, (2) “Korean Wave White

⁶For example, the Korean drama series *My Love from Another Star* (2014) and *Descendants of the Sun* (2016) have been viewed over 3.5 billion and 4 billion times on the Chinese internet video website Iqiyi. The Korean Drama production company sold the former drama series only at about 3.5 million US dollars, while Iqiyi enjoyed 100 million US dollar profit in 2014.

Paper (2014 and 2015),” published by Korea Foundation for International Culture Exchange, (3) various reports and articles provided by KOTRA (Korea Trade-Investment Promotion Agency), KOCCA (Korea Creative Content Agency), and IIT (Institute for International Trade). These reports provide information on what dramas were popular in each of more than 100 countries, the audience rating survey results, the time slots and the name of channel via which the dramas were aired. In addition, they also provide information about the viewership of Korean drama on various major internet video websites and the people who watch them; the number of online communities for Korean Wave and the size of membership worldwide. Furthermore, the reports also contain various survey results on the degree of popularity of the Korean culture or instead the degree of hostility toward Korea and Korean pop culture. These sources also report general observations made for each of the country surveyed, for example, how easily one can hear Korean pop music on the street, the knowledge of general population about simple Korean words often used in the dramas, and the popularity of Korean restaurants in these countries; what people say in the country about the Korean pop culture and why they like it. Finally, the reports also record what the country’s popular news and newspapers say after big success of dramas and K-pop performances.

K-wave Popularity Index. Based on the reports and articles described above, we classify countries into five categories depending on the intensity of the Korean Wave. We summarize what each level implies and the criteria for a country to belong to the category. As these reports are published around 2014, we take it that the index reflects the degree of Korean culture popularity in 2014 for the cross section of countries.

Level 1 (Not Interested): Most people are not interested in Korean TV shows and K-pop music; E.g., India, Pakistan, Switzerland, Austria, Colombia, etc.

Level 2 (Recognized): Many people recognize the K-pop popularity from the national news and newspapers, as there exists a small fraction of population — among teens and early twenties — who are very enthusiastic about K-pop. Major newspapers of the countries in this category have given major coverage to the Korean wave phenomenon, after series of highly successful K-pop concerts in the country (eg., France, UK, US, Canada, Mexico, Brazil, etc.). However, the general population does not enjoy the Korean pop culture, and these countries hardly import Korean TV shows (except US, Canada, and Australia, where many Asian immigrants reside).

Level 3 (Somewhat Popular): Several Korean dramas have become big hits in these countries

nationwide. For example, in Hungary (Iran), the *Jewel in the Palace* recorded a 51% (57%) audience rating in 2009 (2006), and in Cuba two Korean drama series recorded more than 80% audience ratings. As a result, the majority of the population have experiences watching Korean dramas. However, it is unclear whether they continue to consume other dramas or music after the major hits. For example, the majority of Cubans only started watching the drama in 2013. In Hungary, it is reported that Korean dramas are much less popular nowadays, while K-pop music is constantly popular among the youth.

Level 4 (Popular): Almost everyone in the country is likely to admit that the Korean dramas and music have been popular for many years. Due to its popularity, the major channels of the country have been airing a number of Korean TV shows during prime time slots for many years (7 to 12 years). Many drama series have become extremely popular starting 2004-2009, frequently making the front page on the newspapers and internet of the country. The population has a strong interest in learning the Korean language, and it is easy to find people who can speak several Korean words in the country. These countries take initiative to contact Korean agencies to import Korean TV shows with proper payments. K-pop music and singers are very popular among teenagers and early twenties, and there exist many online communities sharing their interests on Korean singers or actor/actresses.

Level 5 (Very Popular): The Korean Wave started from these countries. The most distinct feature of the countries in this category is that even entertainment/reality shows from Korea are highly popular, beyond dramas and K-pop. The Korean pop culture has been so popular in these countries to the extent that the governments express concerns over the cultural effects on their citizens. Due to the dominance, some countries started actively restricting the inflow of the Korean pop culture and activities of the associated Korean stars in their territory (eg., starting with China in 2006, Japan, Kazakhstan, etc.). Nevertheless, Korean fans in these countries follow new and current Korean TV shows via internet simultaneously or right after they are aired in Korea. The country has been importing thousands of episodes of Korean TV shows regularly with proper payments for more than 10 years. People in these countries also actively visit Korea for shopping, to see Korean singers/actor/actresses, to go to concerts, or to go to places where their favorite Korean dramas were made. Many Korean restaurants exist and are very popular in these countries. Advertisements by their favorite Korean actor/actresses/singers are highly effective on

merchandise sales.

Figure 1 illustrates the aggregate trend of the Korean TV program exports, which have seen a substantial increase from 8 to 336 million US dollars during the period 1997–2014. Meanwhile, its imports only slightly increased from 57 to 64 million US dollars.⁷ Korea has thus transformed itself from a net importer to a highly popular exporter of TV shows. Figure 2 displays the bilateral exports of the Korean TV programs for a subset of destinations. We see a similar exponential increase of Korean TV exports during the decade between 2003-2004 to 2013-2014 across several destinations. Figure 3 shows the genre composition in exports and imports of the TV programs on average during the period 2010–2013. Drama accounts for 90% of total exports, and reality show comes second highest at 5%. In contrast, movie accounts for 54%, and drama 25% of total imports.

The map in Figure 4 summarizes the geography of countries that have been highly affected by the Korean pop culture (with a K-wave popularity index of 3 and above). The countries with a popularity index of 5 are typically East Asian, South East Asian, and Central and West Asian countries. These countries represent a total of over 1/4 of the world population. The Korean Wave extends beyond the immediate neighbors and reaches countries as far as Chile and as unexpected as Egypt, Cuba or Turkey.

Development of the Korean Wave. We document below the origin and the development of the Korean Wave. In countries where the Korean pop culture is immensely popular nowadays, the wave typically started with a surprising hit of a particular drama series (eg., *Stairway to Heaven* in Ecuador, *Autumn in My Heart* in Thailand, and *Winter Sonata* in Japan), which initiated the enthusiasm for Korean TV dramas and pop music. These countries include Vietnam, Thailand, Singapore, Taiwan, Malaysia, Indonesia, Kazakhstan, Mongolia, Philippines, Uzbekistan, Myanmar, Cambodia, Ecuador, Peru, Panama, Kyrgyzstan, Tajikistan, and Brunei. Coincidentally, they have embraced the Korean cultural contents without much promotion effort by Korea ever since 2002-2004, and their interest has gone deeper nowadays to include even reality shows (beyond dramas and pop music). The birth and development of the wave in these countries during 2002-2008 is generally considered as the initial stage of the Korean Wave by Korean research institutes such

⁷To understand the spikes in imports of TV shows in 2009 and 2011, note that cable TV networks are legalized in Korea since 2009, which changed the scene of the Korean broadcasting industry of initially four major public channels. The new cable channels started by purchasing and broadcasting expensive movies from the US or UK to attract viewers. As they experience more success with in-house productions of dramas and reality shows, however, they began to reduce the dependence on imports.

as KOTRA and SERI.

The subsequent stage of the Korean Wave (2009–) has been assisted through two channels: (1) the internet and the rapid growth of social media; and (2) the efforts made by Korean government agencies. Thanks to the ubiquitous internet service and development of mobile devices, the Korean cultural contents have been propagated beyond its comfort zone, Asia. The rise of social media such as YouTube and Facebook offered plenty of outlets to present, consume, and share the cultural contents. In this manner, K-pop fans — mostly in their teens or twenties — have been generated in South America and Europe (in these regions, K-pop music is more popular than the dramas). The Korean Ministry of Foreign Affairs reported that in 2015 there existed over 1,500 K-pop online communities with about 36 million members worldwide outside Korea (10 million members outside Asia). Interestingly, most Korean Wave fans in Europe first learned the K-pop through the internet, and they flocked to watch the K-pop performances in Paris in 2011 despite the fact that no albums had ever been released in Europe. Figure 5 shows that during 2005-2014, Korean exports of music increased exponentially from 22 to 335 million US dollars, while imports increased only from 8 to 13 million US dollars.⁸

Meanwhile, Korean government agencies have also taken initiatives to promote the Korean pop culture in countries unfamiliar with its content. For example, they approached television networks in these countries and asked them to air Korean TV dramas and music (free of charge!).⁹ Such efforts are getting rewarded in some South American and Middle Eastern countries — such as Argentina, Mexico, Chile, UAE, Iran, and Iraq.¹⁰ Nowadays, these countries have started importing Korean TV shows with proper payments. The Korean agencies even reached out to African countries. For example, even in Ghana, Korea Creative Content Agency (KOCCA) distributed several Korean drama series such as *My Name is Kim Samsoon* and *Sungkyunkwan Scandal* for them to be aired on TV3 GTV, one of the main channels in Ghana.

⁸The data on music trade of Korea is collected from various music production agencies and published by Korea Creative Content Agency (KOCCA). Each agency/company reports how much profit they earn from sales abroad, including sales of the music content online or offline.

⁹Korean embassies, Korea Foundation (KF), and Korea Creative Content Agency (KOCCA) also conduct research on the trends, the degree of diffusion of Korean culture, audience preferences, and capacity of the media industries in a number of destination countries.

¹⁰For example, in Iran Kurd area, *The Legend of Prince Joomong* had an audience rating 86%.

3 Korean Wave: The Determinants

In this section, we look into the cultural and economic factors that determine the popularity of the Korean pop culture in a destination, based on both the TV program exports of Korea (a panel of more than 100 destinations during 1997-2014) and the popularity index (a cross-section of more than 100 destinations in 2014). As listed in Table 1, the economic factors we consider include the economic size (GDP), development level (GDP per capita), physical distance, the presence of Korean embassy, and the size of Overseas Korean community in the destination. For cultural factors, we take into account the genetic and religious distance (Spolaore and Wacziarg, 2016) of the country to Korea, and six measures of culture dimensions constructed by the well-known psychologists Hofstede et al. (2010).

Hofstede Cultural Indices. The authors studied how culture can affect values in the workplace, by analyzing a large database of the IBM’s employee value scores during the period 1967-1973, which covers more than 70 countries. Hofstede et al. (2010) characterize culture by the following six dimensions: (1) Power Distance Index (PDI), which expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally; (2) Individualism versus Collectivism (IDV), which measures the degree of preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families; (3) Masculinity versus Femininity (MAS), which represents a preference in society for achievement, heroism, assertiveness and material rewards for success; (4) Uncertainty Avoidance Index (UAI), which expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity; (5) Long Term Orientation versus Short Term Normative Orientation (LTO), which expresses the degree to which the society encourages thrift and efforts in modern education as a way to prepare for the future; (6) Indulgence versus Restraint (IND), which measures the degree to which a society allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. These indices typically lie in $[0,100]$ and can thus be interpreted as percentile indices. We divide the original number by 100 to ease the interpretation of their regression coefficients.

Zero TV exports are prevalent in early years and for some destinations in this dataset, so we apply the PPML estimator of Silva and Tenreyro (2006) to accommodate the zero observations.

The first column in Table 1 reports the basic estimation results when the Hofstede et al. (2010) indices are excluded, and the second column the extended results including all regressors. The sample of countries is smaller in the second specification because of the smaller country coverage for the Hofstede et al. (2010) indices.¹¹ Overall, larger countries import more Korean TV programs, physical distance does not matter once full set of culture factors are taken into account, and the overseas Korean population has a large impact: a destination with a Korean population that is 1% bigger imports 0.5% more Korean TV shows (in value). Culture factors play quite an important role. Countries whose culture has a higher power hierarchy, less individualistic, more masculine, and more fun-seeking tend to be more enthusiastic about Korean TV shows, and the economic impact is large. The TV program exports increase on average by 4% as the power distance or the masculinity index increases (or as the individualism index decreases) by one percentage point. The effect almost doubles with respect to the indulgence index. Last but not the least, countries that are closer to Koreans in terms of religion composition in the population are also more receptive of the Korean TV contents. The year fixed effects in Table 1 also capture the general upward trend in the magnitude of Korean TV exports during 2001–2014, in contrast with the period before (a negative and significant constant).

It is more challenging to conduct an econometric analysis based on the K-wave popularity index, because the sample size with both observations on the index and the Hofstede et al. (2010) culture indices is small at around 60 (the number varies across the culture index). Thus, we will present simple correlations of the popularity index and potential determinants. Table 2 reports the descriptive statistics of country characteristic variables separately across four groups of countries categorized by the K-wave popularity index. Note that we combine the two groups of countries, indexed 4 and 5, into one larger group, as there are only 6 countries with an index of 4. First, we note that the index does not monotonically increase in the value of TV program exports. This could reflect the discussions above that Korean Wave may exert its influence via many alternative channels, and TV exports do not fully reflect the degree of Korean culture popularity in a destination. Next, we see that the K-wave popularity index tends to decrease in genetic distance, but not systematically in religious distance. Third, it is interesting to note that the popularity

¹¹The variable Embassy is dropped in the second specification because for this smaller set of countries, the embassy status does not vary across destinations.

index consistently increases with Power Distance. The reverse is true for Individualism. There is some similar pattern in terms of Masculinity and Indulgence, but the relationship is not uniformly monotonic. The popularity index tends to increase with Masculinity, but decrease with Indulgence. Collectively, these patterns are thus very similar to the results presented above based on the panel data of TV program exports. Korean pop culture tends to be popular in countries with higher tendency to accept hierarchical orders with no further justification, with lower degrees of individualism, and with a preference for achievement and material success. Other culture factors such as genetic and religious distance appear to matter as well but with less robust effects across the two sets of analysis.

In what follows, we supplement the above quantitative evidence with survey results and case studies. First, early research (Han and Park, 2005; Kim, 2004) suggested that the wholesome presentation of human interactions and relations plays a key role in the success of Korean TV programs. With the intermixed themes of romance, family, business, and history, the Korean dramas often portray involved emotional investment in human relations, which appeals to the female audience. In contrast to American and British TV shows, the Korean dramas also tend to show repressed emotions, fill the scenes with beautiful and calm images, and avoid explicit sexuality and violence. For example, a recent survey (Korea Foundation, 2015) indicates that Asians appreciate the common Confucian tradition embedded in the Korean dramas, viewers in the Middle East find the Korean dramas less explicit and safe to watch (which is an important factor as the Muslim families have a tradition of watching TV together), and the western audience find the dramas uncomplicated and relaxing. In addition, the attractive appearances of actors/actresses, the lifestyles they project (fashion, make-up, food, accessories, etc), and the creative story lines are also cited as important draw factors.¹²

The fact that Peru, Panama, Cuba, Costa Rica, Ecuador, and El Salvador are among the set of countries highly affected by Korean Wave is the most unexpected outcome, for two reasons: distance and telenovelas (Latin American soap operas). These six countries are all located on the opposite side of the globe from Korea with nearly 180 degrees longitudinal difference. The countries are also located near the large net exporters (Mexico and Brazil) of telenovelas and share

¹²The survey included over 6500 foreign participants (55% in Asia, 15% in the Americas, 20% in Europe, 5% in Middle East, 5% in Africa).

the same/similar languages with them. Typically, neighboring countries of heavy net exporters of movies, TV, and music entertainment (such as Bollywood of India, UK, USA, Mexico, and Brazil) tend to be enthusiastic only about those produced nearby, leaving little room for other foreign culture. For example, Nepal, Sri Lanka, and India show no interest in Korean dramas at all due to the dominance of the Bollywood productions. Given our quantitative results shown above, we may offer one plausible reason why Ecuador, El Salvador, Panama, and Peru are highly affected by Korean wave. As indicated by Table 3, these countries are relatively similar to Korea in terms of Power Distance, Individualism and Masculinity (these measures are missing for Cuba). In other words, these countries appear to have similar cultural and psychological traits as Korea. It is also interesting to contrast these highly affected countries with the less affected such as Mexico and Colombia. These two Latin American countries are relatively distant from Korea in terms of these cultural dimensions.¹³

There also exist country specific reasons why Korean dramas are popular. A survey conducted by Korea Foundation (year) indicates that Panamanians like Korean dramas because they are wholesome and impart moral virtues in various themes, while Latin American telenovelas often contain violent and sensual scenes. Cubans, who used to watch Brazilian telenovelas, enjoy the fresh cultural content that Korean dramas offer. As reported by the Korean press Chosun Ilbo (date), the Cubans say, “The leisurely pace and somewhat stationary acting of the Korean fare apparently contrasts with the endless high-octane histrionics of Latin American telenovelas.” Meanwhile, in Iran, the Korean historical drama *Jewel in the Palace* was highly popular with 57% viewership. Critics say this was due to similar cultural settings in Iran and in old-time Korea. For example, in Iran, women are supposed to cover their body, and women in the drama wore Korean traditional costume that exposes only face and neck. In the case of China, there are several possible reasons. First, the Chinese people’s desire for entertainment has grown significantly following the country’s rapid economic development. Second, the growing demand is not met by the American pop culture, which in many aspects is foreign and distant to the Chinese. On the other hand, the Japanese pop

¹³To elaborate further on how popular the Korean dramas are in some Latin American countries: in Panama, *My Lovely Sam-Soon Kim* ranked top in the audience share in 2010, and was given encore run four times in the same year. Since then, Panama’s main channel SERTV broadcast more than 50 serials of Korean dramas (by August 2015). It is even more surprising that more than 80% of the total population in Cuba said they enjoyed the two Korean dramas, *Queen of Housewives* and *Take Care of My Lady* in 2013, and that yet a different drama, *Stairway to Heaven*, recorded a 55% audience share in Ecuador in 2009. The Korean press Chosun Ilbo reported that even Alex Castro, son of Cuba’s former leader Fidel, admitted that he watched Korean dramas with his family.

culture fails to sustain its popularity because of deep-rooted hostility between the two countries. Third, the Chinese media industry has expanded rapidly following its liberalization. The Korean pop culture thus captures the Chinese market at the right timing and with a right recipe.

4 Korean Wave and its Influence on Consumer Behaviors: Mechanism

Importantly, the spread of Korean pop culture changed foreign consumer's perception about Korea and partly affected their behavior and lives. It is reported that increasing number of foreigners are learning Koreans, travel to Korea, emulate Korean beauty and fashion styles, enjoy Korean food, and purchase products from Korea. While the previous section focused on why Korean pop culture became popular in particular countries, the rest of the paper focuses on its impact on trade. In this section, we present plausible mechanisms through which the global diffusion of one country's pop culture leads to increased exports of related industries. We suggest that there exist four channels: country of origin effect through country image, diffusion of preferences, celebrity branding, and product placement (naturally exposing a particular product in the TV shows). The first two can be considered as indirect channels, while the other two can be viewed as direct channels. These mechanisms are summarized in Figure 6.

First, the foreign consumers who spend many hours on Korean dramas are likely to form different images about Korea, which may affect their decision making process in purchasing goods associated with Korea. To support this channel, we briefly document several survey results. In year 1990, 51% of the Japanese respondents had negative feelings about Korea, and only 9.5% had a positive image of Korea, according to a survey conducted by the Japan-Korea 21st Century Association. However, after the Korean drama *Winter Sonata* became a sensational success in Japan with multiple encore runs during 2003-2004, the Japanese perceptions of Korea had dramatically turned around. In 2004, 66.6% of the respondents had a positive image about Korea, and the rate increased to 77.8% in 2005, according to the *2005 Report on Korea's National Image* by KOTRA.

Then, will foreign consumers take the national image of Korea into consideration when purchasing Korean brand products? The survey by KOTRA (2005) finds that 64.2% (66.6%) of the Japanese (Chinese) respondents replied 'yes' to the question. For example, Samsung and Hyundai

are deeply associated with Korea in the foreign consumers' mind, just as consumers across the world know that Sony and Toyota are Japanese brands. This phenomenon can be associated with two effects: the halo effect and the country of the origin effect. The halo effect refers to the situation in which one particular feature of an object affects the overall assessment about the object including other features (Nisbett and Wilson, 1977; Leuthesser et al., 1995). The country of origin effect can be considered as the halo effect caused by the image of the origin country in assessing the product for a purchase (Ozsomer and Cavusgil, 1991; Elliott and Cameron, 1994). Obermiller and Spangenberg (1989) suggest that the effect involves three step process. First, the consumer recognizes the origin country in which the product was made, and takes it into consideration for assessing the product (recognition process). Second, the consumer generates an emotional reaction toward the origin country, which affects the assessment (emotional process). Third, the consumer forms a normative mechanism on their purchase intention and assessment (normative process). This way, foreign consumers who frequently watch Korean dramas may develop positive images about Korea, and the country of origin effect can affect their purchasing decision process when it comes across the Korean brand products.

Next, overseas Korean drama fans indirectly experience the Korean culture and life styles through the dramas, which may alter the foreign consumers' preferences. KOFICE (2015) provides some direct evidence on this based on surveys of over 6,500 foreign participants across the world who have experienced Korean pop cultural contents. Interestingly, 54.2% of the total sample replied that they became highly interested in eating Korean foods after experiencing the Korean TV dramas, movies, or K-pop. Given that the demand for a certain country's food is highly dependent on the consumers' taste and cultural desire, rather than objective quality of the product such as technology, this report provides direct evidence that the Korean Wave causes the global diffusion of consumer preferences. Furthermore, 51.6% of the respondents replied that they developed the desire to travel to Korea, and 41% the desire to purchase electronics and beauty products from Korea, after experiencing the Korean pop culture. These are in line with Stigler and Becker (1977), who argue that consumer preferences of two countries will converge if the pair actively engage in FDI, international trade in goods and services, or immigration.

Third, in many Asian countries, celebrity branding — which uses a popular celebrity to advertise a certain brand or product — is a highly effective way to promote sales. For example, in Japan,

China and Korea, popular actors/actresses, singers, and sports stars sell almost everything from beverages and detergents to cars and even branded apartments. There exist many Korean celebrities who are K-pop singers or starred in Korean dramas and become extremely popular in Asia thanks to the Korean Wave. Accordingly, many Korean multinational companies (Samsung, LG, Hyundai, and many other beauty and fashion related companies) strategically use internationally popular Korean celebrities to boost their sales abroad. To illustrate, when the Korean drama *Descendants of the Sun* had a sensational hit in China, Taiwan, and Singapore, from February to April in 2016, the two multinational Korean brands (J.Estina and Laneige of Amore Pacific) that sell jewelry and skin-care/make-up products enjoyed a sudden boost in sales and large increases in their stock prices during the time when the drama was aired. In fact, the two brands were using the main actress of the drama, Hyekyo Song, in their advertisements. Note that highly popular Korean celebrities often contract with foreign brands based in other Asian countries (China, Japan, Singapore, Thailand, Vietnam, etc.) for advertisements in their domestic markets. This directly shows that these Korean Wave celebrities have marketing power even on the products not associated with Korea.

Fourth, Korean firms often sponsor the production of TV dramas with a condition that their certain products naturally appear in the drama, as a way to advertise the products. In many Asian countries, this often captures the audience's attention, and they share the information about the product on the internet, which immediately leads to sudden increases in sales of the products. Especially, many Asian drama fans tend to admire the stars and try to emulate their styles. Hence, when their favorite celebrities appear to wear or use certain products in the TV shows, the consumers are easily tempted to purchase the same products. For example, for two months starting February 2016, each episode of the *Descendants of the Sun* was released every Wednesday and Thursday, through the Chinese online video website Iqiyi, simultaneously with the drama's broadcasting schedule in Korea (at that time the Chinese government banned broadcasting Korean dramas in TV networks). All the Korean press and the media reported that the drama was extremely popular in China hitting more than 2.6 billion viewership within the two months. During the same time period, many product items used by the main actor and actresses were sold very well in China. For example, the Korean press Kookmin Ilbo reported that the sales of the compact powder used by the actress in the drama increased by 10 times compared to the same period in the previous year, and the lipstick that she used in the drama was immediately sold out within three

days, in one of the largest online shopping websites selling products from Korea (this website is run by a Korean firm SK Planet).

5 Korean Wave: Implications on Merchandize Trade and FDI

As discussed in the previous section, culture exports could affect consumer preference and purchasing decisions. As the New York Times reports in 2005, “The booming South Korean presence on television and in the movies has led Asians to buy up South Korean goods and to travel to South Korea, traditionally not a popular tourist destination.” For example, directly affected is cosmetic and beauty products, which are intensively advertised by famous Korean actresses. As shown in Figures 7 and 8, the substantial growth of beauty product exports to countries affected by Korean Wave highly resembles the pattern of TV program export growth in Figure 1. In other words, the Korean beauty products sell well when and where its pop culture gains popularity. On the other hand, in countries where Korean pop culture does not interest the general population — such as France, Germany, and UK — the level of beauty product exports is distinctively lower, and the growth is not obvious either (see Figure 8).

As another example, in 2004, 74 thousands of Japanese traveled to Kangwon-do in Korea, after seeing the Korean drama *Winter Sonata*. The province enjoyed a 884% increase in the number of tourists compared to the previous year. Similarly, a number of “Korean Wave” tourism destinations have emerged over the past decade in Korea due to the dramas, popular K-pop music videos, and their concerts. As a result, the number of visitors to Korea has increased substantially. It increased by 13% on average each year from 2009 to 2012 (see Figure 9), compared to the average 3% yearly increase in total visitors in the world in the same period (UNWTO, 2012). Figure 10 shows the percentage ratio of male and female visitors to Korea. The top seven countries (Japan, China, Hong Kong, Singapore, Taiwan, Thailand, and Malaysia) are the ones that are most affected by the Korean Wave. Interestingly, 22 percentage more women visit Korea from these countries on average, while there are 30 percentage more male visitors from other countries. Numerous survey results show that women are much more passionate about Korean dramas and stars. Together with the fact that these countries are also among the top 10 countries with the largest number of visitors to Korea, Figure 10 implies that the substantial growth of tourism in Korea is due to the Korean

Wave phenomenon.

In what follows, we estimate the economic impact of Korean Wave on Korean merchandise exports and FDI for year 1997–2014. We first use the Comtrade sectoral trade data by the UN Broad Economic Categories. The sector classification is listed in Table 4 for ease of reference. Table 5 reports the results when we measure the Korean Wave by TV program exports to a destination. Again, we use the PPML estimator to account for zero merchandise exports. The sample is however constrained to destinations and years with positive TV program export values, because the continuous regressors are in their logs when entering the PPML estimation equation. We regress the current sectoral merchandise export of Korea on its TV program export to the same destination (lagged by one year) and other gravity variables (including destination market size, income level, bilateral distance, RTA, Korean embassy, and the population of Korean immigrants). Interestingly, the lagged TV program exports have a positive and economically significant effect on the Korean exports of most consumer goods (see Sector 111–63). In particular, Korean exports of food and beverages, and other consumer goods (nes, semi-durable and non-durable) increase with lagged TV program exports. For example, an increase in Korean TV program exports by 1% leads to an increase in exports of processed food and beverage for household consumption by 0.156%. Exports of primary or processed food and beverage for industry also increase and indeed by more (up to 0.521%). This likely reflects the use of Korean ingredients for further processing at the destination by Korean production plants or by the Korean restaurants/eateries at the destination. In contrast, capital goods, fuel, and transport equipment (that embody less culture content) do not respond to TV program exports (see Sector 3–522). Such heterogeneous impacts across sectors support a causality effect of Korean Wave on merchandise exports.

We also use the Popularity Index as an alternative measure of the Korean Wave. The sample in this case is limited to a cross section in year 2014, because the K-wave Index is available only for one year. Table 6 reports the estimation results. Korean exports of food and beverages (primary or processed, mainly for household consumption), and other consumer goods (nes, non-durable) again increase with the popularity index by economically and statistically significant magnitudes. For example, a country with a popularity index of 5, instead of 4, will on average import close to $\exp(0.56) - 1 \approx 75\%$ times more food and beverages (primary, mainly for household consumption) and other non-durable consumer goods by $\exp(0.288) - 1 \approx 33.4\%$. The K-wave Index on the other

hand has no significant impact on capital goods and transport equipment. Overall, the effect is significant at the aggregate (Sector 99): the Korean aggregate exports increase by approximately $\exp(0.298) - 1 \approx 34.7\%$ when the popularity index increases by one level. This corresponds to an economic value of about 199 billion US dollars in 2014 annual exports.

Given the above findings using the UN Broad Economic Categories (that span across all sectors at relatively aggregate levels), we look into the types of consumer goods that are likely to have been affected by Korean Wave. We use the bilateral trade flows based on the UN Harmonized System 1996 classification at highly disaggregate levels (year 1997–2014). The list of goods we study are given in Table 7. These include cosmetics (33), clothing (61, 62), jewelry (7113, 7117), home appliances (8415, 8418xx, 8450, 850910, 851660, 8517, 8528), computers (8471xx), cellular phone (852520), and passenger vehicles (8703). The use of cellular phone is a relatively recent phenomenon, and the HS 1996 nomenclature does not have a perfect match for this good, so we also use the HS 2007 nomenclature for cellular phone (851712) to capture its trade flows since 2007. From now on, we focus on the effects of lagged TV exports, given its larger sample size than the K-wave popularity index. The estimation results are summarized in Table 8. We see that Korean exports of most consumer goods increase with lagged TV exports. These include cosmetics (33), clothing (61, 62), jewelry (7113, 7117), air conditioners (8415), refrigerators (sum of 841821, 841822, 841829), laptops (847130), desktops (847141), and cellular phones (852520 by HS1996, or 851712 by HS2007). These are the consumer goods often put on display (indirectly advertised) in Korean dramas. For example, Korean cosmetics exports increase by 0.207% when its lagged TV exports to a destination increase by 1%. Consumer goods that are not significantly affected are washing machines (8450), vacuum cleaners (850910), cooking appliances (851660), telephones (8517), TV (8528), and passenger vehicles (8703). They tend to be home appliances that are less conspicuous on Korean drama settings, or they tend to be produced in foreign plants by Korean companies (and hence not directly exported from Korea). For example, Samsung has foreign production plants of TVs in Mexico, and washing machines and refrigerators in Mexico and China. Similarly, LG has foreign production plants of TVs and refrigerators in Mexico and washing machines in Vietnam. Hyundai Motor has several foreign factories including US, China, India, Czech Republic, Russia, Brazil, and Turkey, while Kia has production facilities in US, China, and Slovakia. Next, we note that the sign on distance is significantly positive for several goods, contrary to typical predictions

based on gravity forces. This may be understood by the fact that the consumer goods exported directly from Korea are typically of the higher quality versions, and they tend to be exported to higher-income and more distant countries such as the US and Canada. For example, both Samsung and LG tend to make only high-end premium appliances in Korea, while their electronics/appliances of medium quality grades are offshored to Mexico, Vietnam, or China. This is in a way consistent with the finding of Hummels and Skiba (2004), where they find that good quality products are shipped further.

We next look at the impact of Korean Wave on Korean foreign direct investment (FDI) across the whole spectrum of potential sectors. The data (1997–2014) are sourced from the Export-Import Bank of Korea, which belongs to the Korean government.¹⁴ The list of sectors and their scope is explained in Table 9. Based on the same estimation specification as goods trade but with bilateral FDI flows as the dependent variable, the results are reported in Table 10. We see that for obvious reasons, FDI in entertainment and broadcasting is heavily influenced by lagged TV exports. For each 1% increase in TV exports, FDI in these two sectors each increases by around 0.263%. Following that, FDI in education and restaurant also increases significantly with Korean TV exports (with an elasticity of 0.245 and 0.203, respectively). These two types of services provide direct consumption of Korean culture such as its language and cuisine, and hence are expected to grow with the Korean Wave. It appears that more intense exposure to Korean culture also facilitates FDI in other business and personal services, including business support services (0.240), health/social services (0.200), wholesale/retail (0.136), and other personal services such as hair salons (0.088). Ex ante, we do not expect FDI in back-end or infrastructure services to be promoted by Korean Wave in a robust manner, as they are not directly/clearly visible to end consumers. For example, these include construction, estate, professional/research services and transportation. Finally, we note that FDI in manufacturing does not depend on TV exports. This indicates that the production cost consideration dominates the market proximity incentive in Korean companies' location choice of FDI in manufacturing. FDI in agriculture and mining, which depends to a large extent on natural comparative advantage, does not have a robust relationship with TV exports as expected. As a final remark, we note two exceptions in electricity and waste treatment, which vary with TV exports positively, when these two types of services embody little culture content. We speculate that this

¹⁴See <https://stats.koreaexim.go.kr/odisas.html>.

could be due to the state-controlled nature of Korea Gas Corporation (KOGAS) and Korea Electric Power Corporation (KEPCO), which are respectively the top 4th and 8th Korean multinationals in 2013. South Korea strongly promoted investment in energy during the five years of the Lee Myung Bak administration (2008-2012), and the proportionality of these foreign investment tends to coincide with the intensity of the Korean Wave, for example with the list topped by Asia and reared by Africa and Middle East (Moon and Yin, 2015). Electricity generation (by nuclear or fossil fuels) produces waste at each step of the fuel cycles: mining, fuel preparation, power production, and decommissioning, in gaseous, liquid, and solid forms (Tsyplenkov, 1993). Thus, waste management by environmental regulations is a production process that must accompany energy production. This may help explain the simultaneous rise of outward Korean FDI in electricity and in waste management.

6 Conclusion

This paper documents the Korean Wave phenomenon in which many countries across the world import the Korean TV shows and are influenced by its cultural contents. We investigated the determinants of the Korean Wave using genetic and religious distance, and the Hofstede et al. (2010)'s six cultural dimension indices, among other gravity controls. We find that Korean pop culture tends to be popular in countries with higher tendency to accept hierarchical orders with no further justification, with lower degrees of individualism, and with a preference for achievement and material success. Other culture factors such as genetic and religious distance appear to matter as well but with less robust effects. We then propose four mechanisms through which the Korean Wave stimulates its exports and FDI to highly affected destinations: the country of origin effect, diffusion of preferences, celebrity branding, and product placement. We empirically test these hypotheses using a panel of data on Korean TV program exports, merchandise exports and FDI. We find that the effects are economically and statistically significant, but focused in consumer merchandise exports (such as food and beverages, clothing, home appliances, computers and cellular phones) and FDI in services (related to entertainment, broadcasting, education, restaurant, and business and personal services).

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A Data Appendix

(To complete)

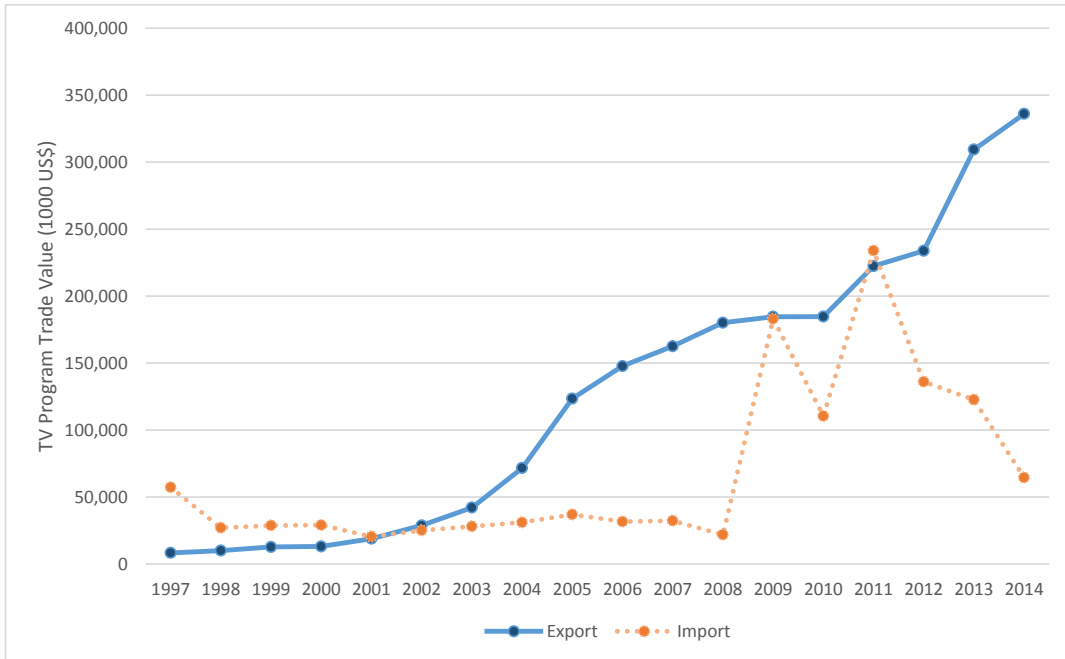


Figure 1: TV Program Exports and Imports of South Korea

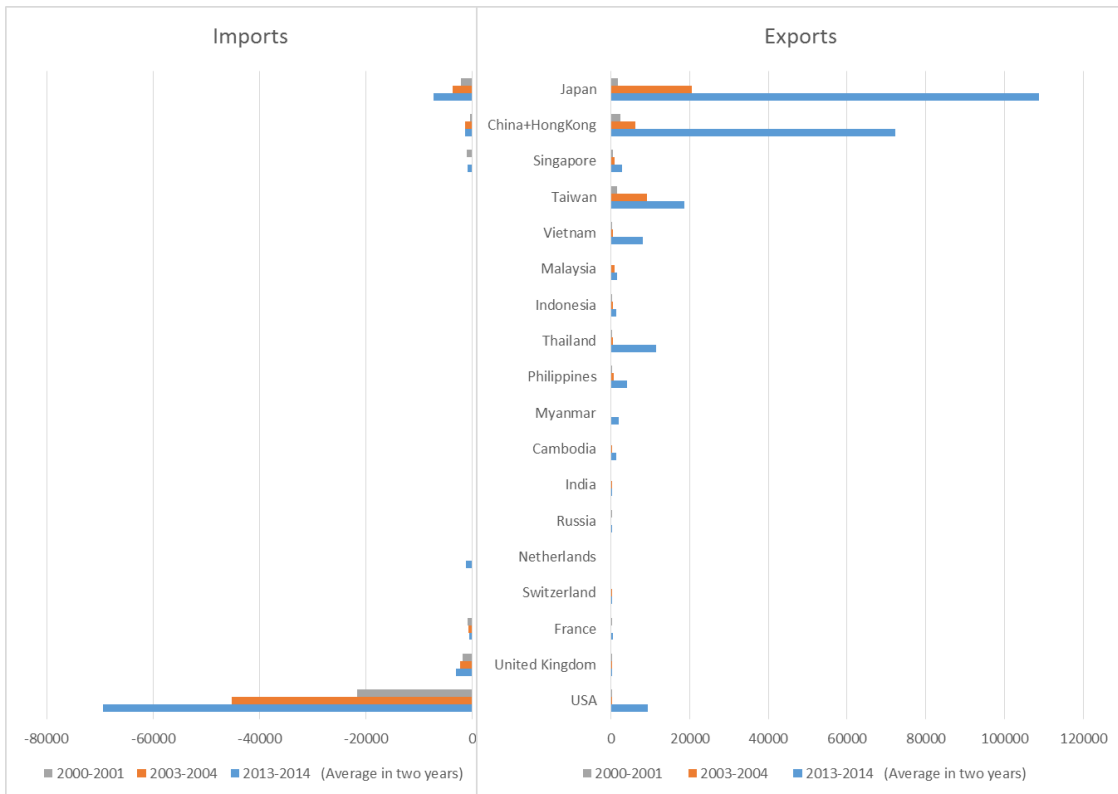


Figure 2: TV Program Exports of South Korea across Destinations

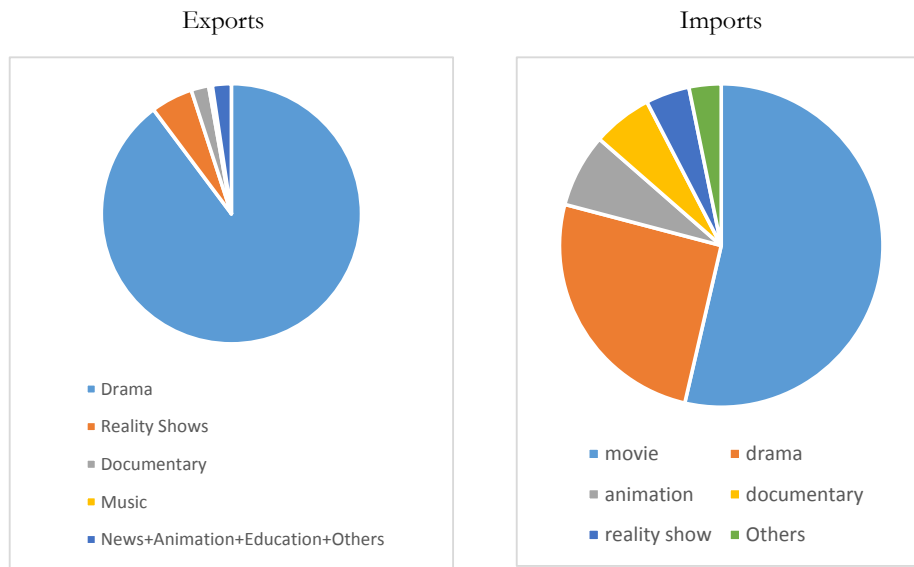


Figure 3: Genre Composition in TV Exports vs. Imports of Korea (2010–2013)

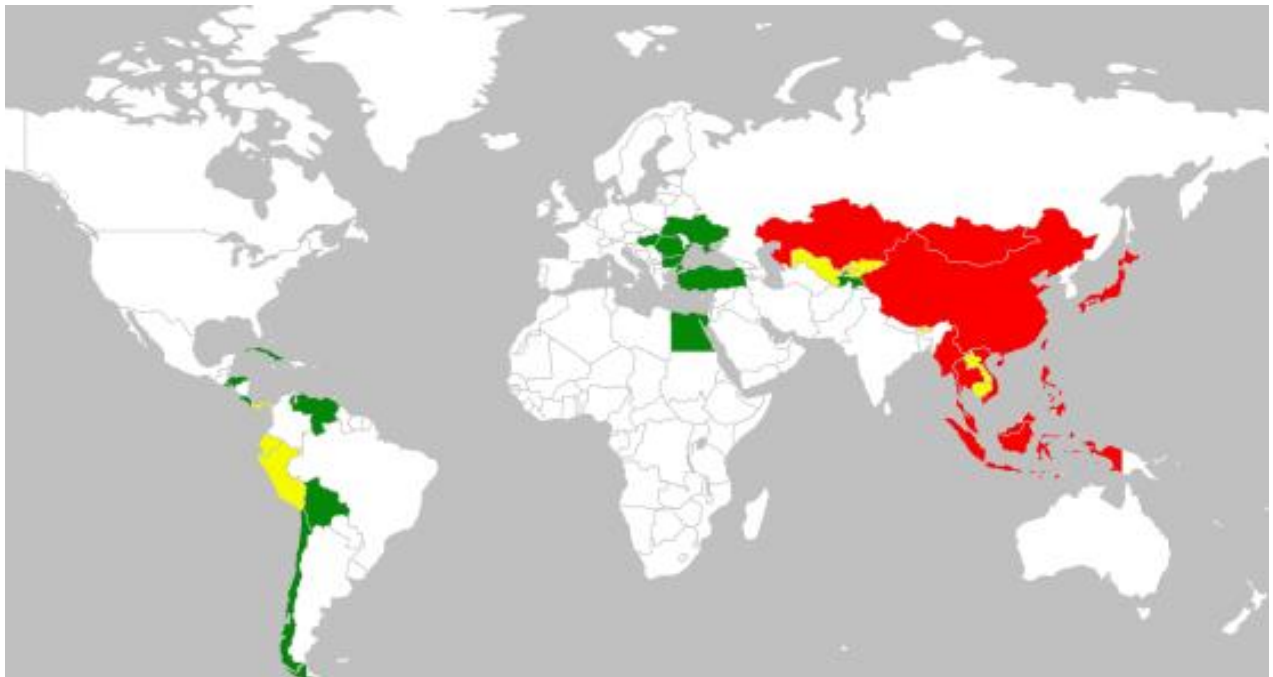


Figure 4: Highly Affected Countries by Korean Wave (Red = Index level 5; Yellow = Level 4; Green = Level 3)

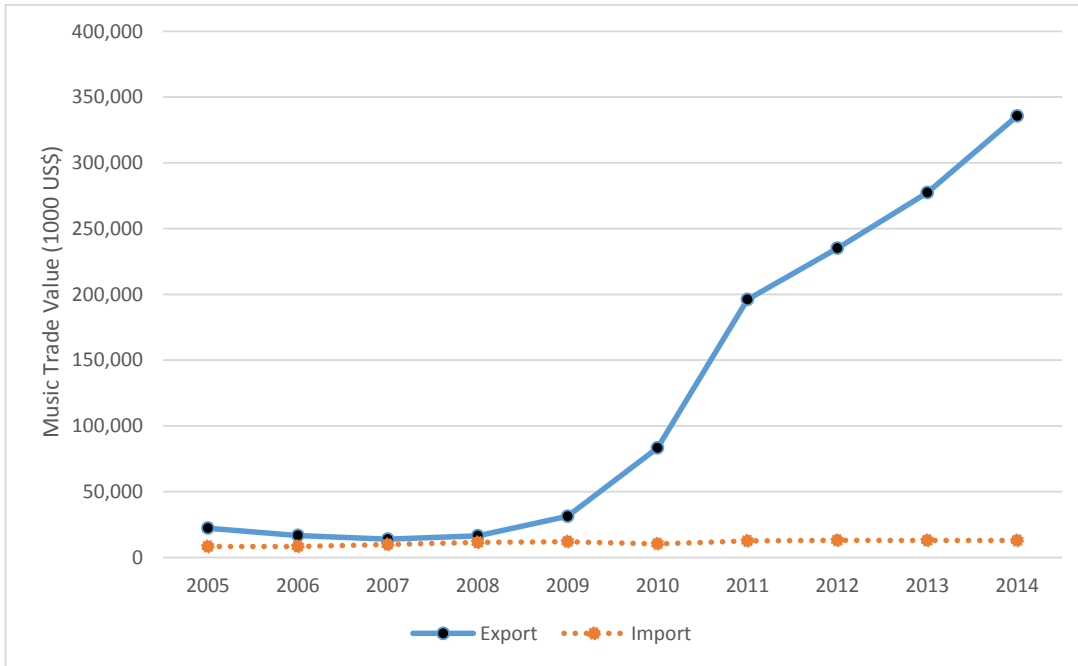


Figure 5: Music Trade of Korea

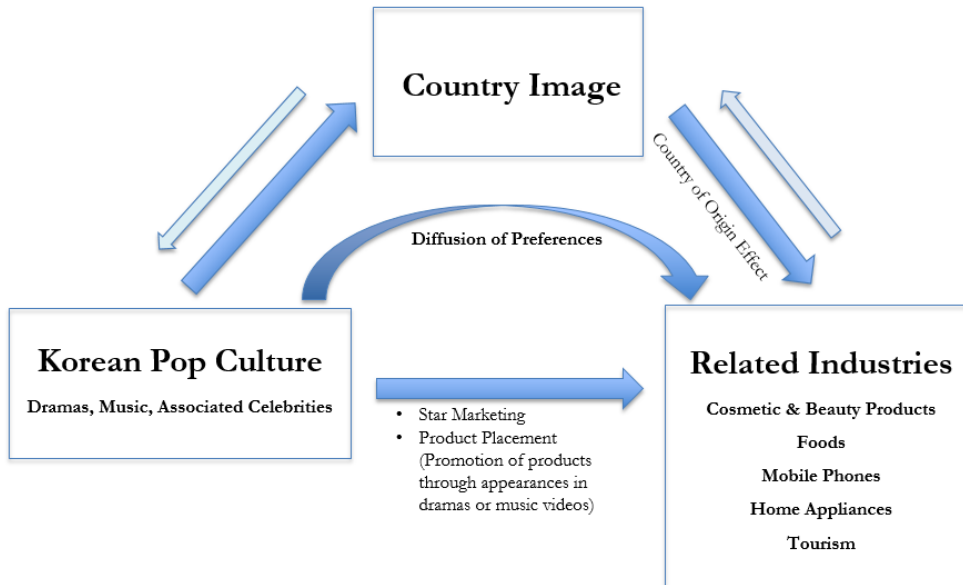


Figure 6: Korean Wave, Country Image, and Merchandize Trade

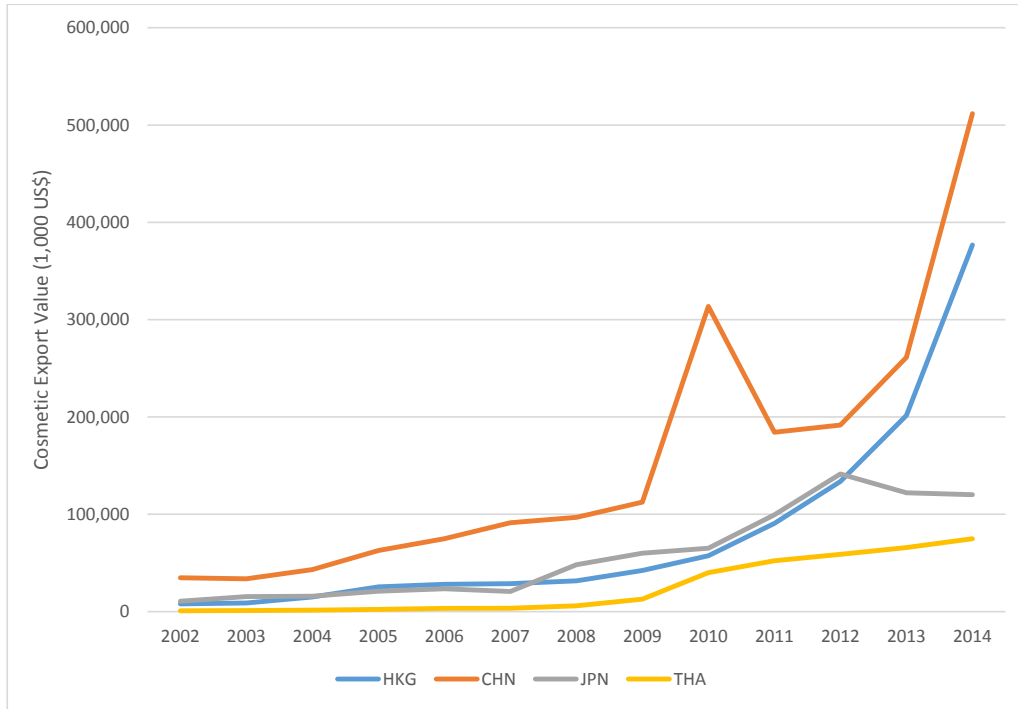


Figure 7: Growth of Cosmetic Product Exports from South Korea to Selected Destinations

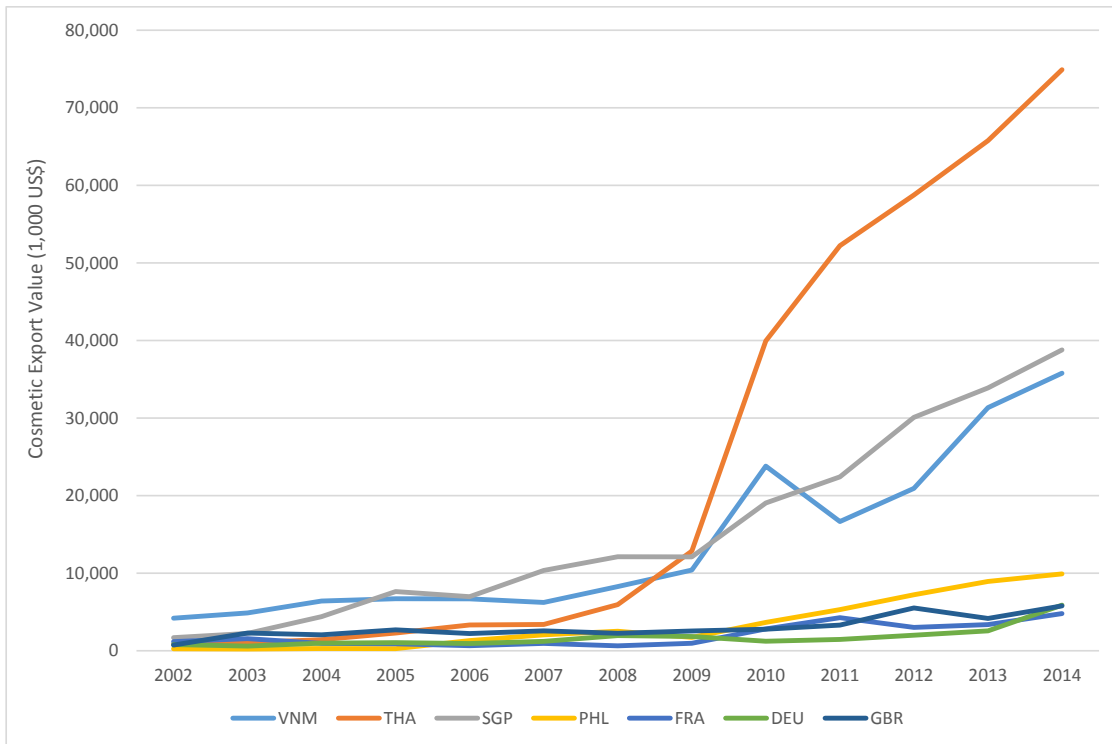


Figure 8: Cosmetic Export Growth Comparisons

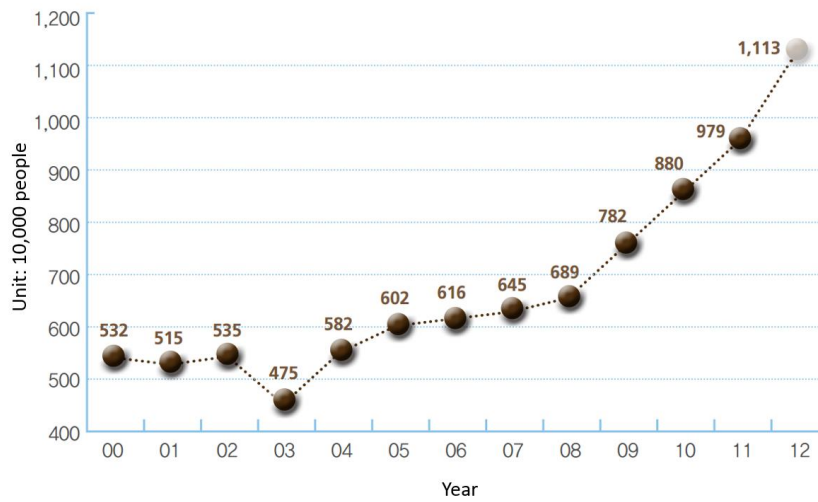


Figure 9: Total Number of Foreign visitors to Korea

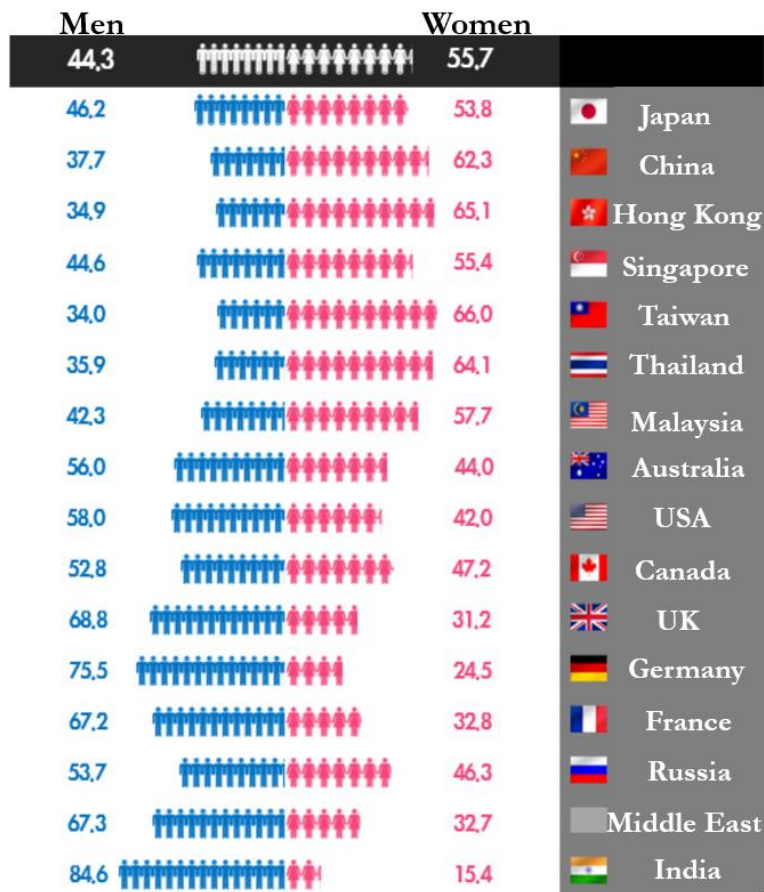


Figure 10: Foreign Visitors to Korea in 2013 (Percentage of Men vs. Women)

Table 1: PPML regression of TV program exports on potential determinants

Dependent variable: TV program exports (in thousand US\$)		
GDP	0.260 ** (0.130)	0.730 ** (0.318)
GDP per capita	0.198 (0.154)	-0.447 (0.336)
Distance	-1.533 *** (0.289)	-0.079 (0.392)
Embassy	2.252 ** (1.005)	
Genetic Distance	0.886 ** (0.397)	0.952 (0.933)
Religious Distance	-14.524 *** (2.085)	-19.174 *** (4.231)
Overseas Korean	0.440 *** (0.076)	0.526 *** (0.117)
Power Distance		4.174 *** (0.812)
Individualism		-4.353 *** (1.111)
Masculinity		4.275 *** (1.106)
Uncertainty Avoidance		0.140 (0.845)
Long Term Orientation		1.333 (1.560)
Indulgence		7.664 * (3.932)
year_2001	1.557 *** (0.458)	1.364 ** (0.536)
year_2002	1.990 *** (0.240)	1.870 *** (0.221)
year_2003	2.731 *** (0.142)	2.669 *** (0.135)
year_2004	3.757 *** (0.502)	3.777 *** (0.506)
year_2005	4.417 *** (0.496)	4.445 *** (0.492)
year_2006	4.171 *** (0.477)	4.176 *** (0.480)
year_2007	4.107 *** (0.599)	4.100 *** (0.611)
year_2008	4.203 *** (0.653)	4.240 *** (0.648)
year_2009	4.239 *** (0.602)	4.274 *** (0.597)
year_2010	4.218 *** (0.394)	4.276 *** (0.377)
year_2011	4.646 *** (0.568)	4.727 *** (0.549)
year_2012	4.730 *** (0.610)	4.816 *** (0.595)
year_2013	5.013 *** (0.598)	5.095 *** (0.561)
year_2014	4.952 *** (0.296)	5.020 *** (0.245)
cons	5.717 (4.390)	-20.824 *** (6.358)
R^2	0.958	0.956
No. of Obs.	1822	653

Note: The standard error clustered by destination is in the bracket. The variables: GDP, GDP per capita, Distance, Genetic and Religious Distance, Overseas Koreans are in log. See the text and the data appendix for the definitions of the above variables.

Table 2: Descriptive Statistics

	Mean (Standard Deviation); Observations							
	Very Popular (Index 4 & 5)		Somewhat Popular (Index 3)		Weakly Interested (Index 2)		Not Interested (Index 1)	
TV program exports (thousand US\$)	9,874 (20,455)	20	19.3 (77.3)	16	350 (1,725)	25	8.3 (28.8)	47
GDP (million US\$)	971,866 (2,503,909)	19	162,134 (220,183)	14	1,374,167 (3,493,085)	24	429,482 (797,787)	47
GDP per capita (thousand US\$)	13.5 (16.7)	19	6.1 (3.9)	14	23.6 (24.7)	24	24.5 (28.5)	47
Distance (kilometer)	5,074 (4,566)	20	10,472 (4,317)	16	10,113 (3,990)	25	9,838 (2,855)	47
Embassy	0.950 (0.224)	20	0.813 (0.403)	16	0.920 (0.277)	25	0.809 (0.398)	47
Genetic Distance $[0, 0.355]^\dagger$	0.073 (0.029)	20	0.096 (0.022)	16	0.112 (0.049)	24	0.134 (0.063)	46
Religious Distance $[0.089, 1]^\dagger$	0.842 (0.084)	18	0.921 (0.024)	16	0.915 (0.040)	24	0.916 (0.033)	42
Overseas Korean (thousand)	202.0 (589.5)	20	3.1 (5.4)	15	113.3 (431.6)	25	3.6 (9.0)	47
Power Distance $[0, 1]^*$	0.756 (0.156)	12	0.640 (0.178)	8	0.583 (0.214)	13	0.448 (0.177)	25
Individualism $[0, 1]^*$	0.213 (0.102)	12	0.330 (0.216)	8	0.524 (0.249)	13	0.574 (0.213)	25
Masculinity $[0, 1]^*$	0.538 (0.166)	12	0.490 (0.212)	8	0.526 (0.120)	13	0.466 (0.221)	25
Uncertainty Avoidance $[0, 1]^*$	0.568 (0.237)	12	0.821 (0.107)	8	0.752 (0.168)	13	0.631 (0.233)	25
Long Term Orientation $[0, 1]^*$	0.589 (0.251)	11	0.406 (0.276)	11	0.339 (0.193)	17	0.464 (0.217)	30
Indulgence $[0, 1]^*$	0.377 (0.126)	11	0.415 (0.305)	11	0.547 (0.225)	15	0.507 (0.217)	31

Note: See the text and the data appendix for the definitions of the above variables. The values for TV program exports, GDP, GDP per capita, embassy, Overseas Korean are based on those in year 2014. \dagger The bounds refer to those in the original dataset of Spolaore and Wacziarg (2016) including all country pairs. $*$ The Hofstede cultural indices typically lie in $[0, 100]$, although there are exceptions that exceed 100. We divide the original number by 100 to ease the interpretation of their regression coefficients.

Table 3: South American Countries highly/not affected by Korean Wave

Country	Power Distance	Individualism	Masculinity	Indulgence
Korea	60	18	39	29
Costa Rica	35	15	21	.
Cuba
Ecuador	78	8	63	.
El Salvador	66	19	40	89
Panama	95	11	44	.
Peru	64	16	42	46
Mexico	81	30	69	97
Colombia	67	13	64	83
Min	11	8	5	0
Median	60	46	50	43
Max	104	91	110	100
Obs	67	67	67	87

Note: See the text and the data appendix for the definitions of the above variables.

Table 4: UN Broad Economic Categories

1 - Food and beverages
11 - Primary
111- Mainly for industry
112- Mainly for household consumption
12 - Processed
121- Mainly for industry
122- Mainly for household consumption
2 - Industrial supplies not elsewhere specified
21 - Primary
22 - Processed
3 - Fuels and lubricants
31 - Primary
32 - Processed
321- Motor spirit
322- Other
4 - Capital goods (except transport equipment), and parts and accessories thereof
41 - Capital goods (except transport equipment)
42 - Parts and accessories
5 - Transport equipment and parts and accessories thereof
51 - Passenger motor cars
52 - Other
521- Industrial
522- Non-industrial
53 - Parts and accessories
6 - Consumer goods not elsewhere specified
61 - Durable
62 - Semi-durable
63 - Non-durable
7 - Goods not elsewhere specified
99 - All categories

Table 5: PPML regression of Korea merchandise exports on TV exports (BEC sectors)

BEC sectors	111	112	121	122	61	62	63	99	21	22	3	41	51	521	522
TV exports (lagged)	0.521** (0.228)	0.077 (0.051)	0.284*** (0.101)	0.156** (0.071)	0.006 (0.045)	0.084*** (0.029)	0.149*** (0.044)	0.024 (0.039)	0.046 (0.050)	0.091** (0.038)	0.023 (0.084)	0.001 (0.031)	-0.032 (0.038)	-0.103 (0.105)	-0.043 (0.083)
GDP	0.242 (0.331)	0.019 (0.179)	-0.247 (0.292)	0.193 (0.151)	0.779*** (0.197)	0.461** (0.191)	0.070 (0.156)	0.417** (0.181)	0.322** (0.144)	0.538*** (0.154)	-0.089 (0.276)	0.746*** (0.167)	0.654*** (0.150)	0.130 (0.267)	0.339 (0.219)
GDP per capita	0.424 (0.362)	0.871*** (0.084)	0.737*** (0.247)	0.486*** (0.156)	0.024 (0.157)	0.110 (0.121)	0.213* (0.129)	-0.119 (0.201)	0.088 (0.063)	-0.371** (0.163)	0.366 (0.275)	-0.354* (0.195)	-0.168 (0.222)	0.282 (0.247)	-0.113 (0.254)
Distance	-0.212 (0.331)	-1.055*** (0.058)	-0.911*** (0.208)	-0.545*** (0.141)	0.166 (0.119)	-0.011 (0.106)	0.117 (0.103)	-0.354** (0.177)	-1.209*** (0.126)	-0.464*** (0.181)	-0.730*** (0.246)	-0.113 (0.173)	1.056*** (0.301)	-0.069 (0.408)	0.612** (0.252)
Embassy	8.632*** (1.817)	5.040*** (0.889)	3.266*** (1.275)	2.498*** (0.857)	1.068 (0.954)	2.209*** (0.836)	1.024 (0.889)	2.729*** (0.645)	7.505*** (0.672)	2.472*** (0.659)	6.046*** (0.879)	2.078*** (0.722)	0.767 (0.703)	4.712*** (0.759)	5.185*** (1.350)
RTA	0.125 (0.772)	0.260** (0.132)	1.054** (0.451)	0.040 (0.207)	-0.751** (0.317)	-0.174 (0.263)	-0.228 (0.243)	0.175 (0.298)	0.166 (0.166)	0.184 (0.175)	0.882** (0.412)	-0.133 (0.142)	-0.167 (0.187)	0.992*** (0.383)	-0.270 (0.422)
Overseas Korean	-0.019 (0.310)	0.428*** (0.135)	0.457** (0.215)	0.181 (0.125)	0.025 (0.086)	0.210*** (0.076)	0.289*** (0.091)	0.196** (0.081)	0.092 (0.095)	0.072 (0.089)	0.344* (0.193)	0.151** (0.072)	0.285*** (0.071)	-0.052 (0.164)	0.045 (0.125)
R^2	0.899	0.983	0.948	0.955	0.882	0.895	0.822	0.874	0.974	0.942	0.666	0.948	0.972	0.147	0.486
Obs	241	241	241	241	241	241	241	241	241	241	241	241	241	241	241
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: The standard error clustered by destination is in the bracket. The variables: TV program exports, GDP, GDP per capita, Distance, Overseas Koreans are in log. The sectoral trade data are based on imports reported by importing countries. TV program exports are lagged by one year. See the text and the data appendix for the definitions of the above variables.

Table 6: PPML regression of Korea merchandise exports on K-wave Popularity Index (BEC sectors)

BEC sectors	111	112	121	122	61	62	63	99	21	22	3	41	51	521	522
K-wave index	0.719 (0.444)	0.560** (0.222)	0.175 (0.367)	0.350** (0.146)	0.091 (0.198)	0.265 (0.178)	0.288* (0.172)	0.298*** (0.114)	-0.220 (0.204)	0.278*** (0.090)	0.711*** (0.246)	0.094 (0.105)	0.148 (0.137)	-0.237 (0.147)	0.073 (0.260)
GDP	0.238 (0.492)	0.230 (0.267)	-0.415 (0.420)	0.223 (0.150)	0.690*** (0.255)	0.447** (0.212)	0.120 (0.184)	0.639*** (0.143)	0.367** (0.179)	0.744*** (0.171)	0.153 (0.261)	0.773*** (0.155)	0.613*** (0.218)	0.281* (0.159)	0.674*** (0.211)
GDP per capita	0.815* (0.452)	1.230*** (0.097)	0.920*** (0.312)	0.579*** (0.113)	0.100 (0.157)	0.237 (0.198)	0.466*** (0.163)	-0.056 (0.161)	0.021 (0.156)	-0.329*** (0.099)	0.573*** (0.183)	-0.114 (0.138)	0.428*** (0.142)	0.095 (0.144)	0.145 (0.282)
Distance	-0.657 (0.514)	-0.649* (0.355)	-1.825*** (0.658)	-0.415* (0.213)	-0.251 (0.248)	-0.221 (0.231)	-0.280 (0.225)	-0.201 (0.167)	-1.841*** (0.335)	-0.353** (0.145)	0.009 (0.401)	-0.264 (0.195)	0.905*** (0.297)	-0.667* (0.404)	0.087 (0.339)
Embassy	1.995* (1.189)	-1.789 (1.196)	6.804*** (0.881)	1.961*** (0.545)	1.154** (0.558)	1.726*** (0.448)	1.701*** (0.659)	1.374*** (0.324)	1.143 (0.848)	1.503*** (0.408)	2.932*** (1.086)	0.796* (0.476)	0.122 (0.420)	3.235*** (1.156)	4.233*** (0.505)
RTA	1.146* (0.625)	0.330 (0.421)	2.209*** (0.653)	0.177 (0.276)	0.089 (0.348)	0.491 (0.376)	0.090 (0.442)	0.264 (0.228)	1.236*** (0.378)	0.477** (0.228)	0.871* (0.458)	0.097 (0.240)	-0.335 (0.401)	1.200*** (0.398)	0.237 (0.536)
Overseas Korean	0.298 (0.322)	0.390** (0.179)	0.698*** (0.252)	0.335*** (0.099)	0.089 (0.144)	0.237* (0.134)	0.295** (0.121)	0.135* (0.081)	0.165 (0.121)	0.092 (0.100)	0.314** (0.158)	0.134 (0.083)	0.180 (0.131)	-0.147 (0.190)	-0.091 (0.145)
R^2	0.674	0.986	0.844	0.943	0.829	0.874	0.686	0.920	0.896	0.972	0.762	0.943	0.897	0.138	0.355
Obs	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104

Note: Robust standard error is in the bracket. The variables: GDP, GDP per capita, Distance, Overseas Koreans are in log. The sectoral trade data are based on imports reported by importing countries. See the text and the data appendix for the definitions of the above variables.

Table 7: Selected UN Comtrade HS Sectors

HS 1996 nomenclature:

- 33 - Essential oils & resinoids; perfume, cosmetic/toilet prep
- 61 - Art of apparel & clothing accessory, knitted or crocheted
- 62 - Art of apparel & clothing accessory, not knitted/crocheted
 - 7113 - Articles of jewellery and parts thereof, of precious metal or of metal clad with precious metal
 - 7117 - Imitation jewellery
 - 8415 - Air conditioning machines, comprising a motor-driven fan and elements for changing the temperature and humidity, including those machines in which the humidity cannot be separately regulated
 - 8418 - Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps other than air conditioning machines of heading No. 84.15
 - 841821[†] - Refrigerators, household type :- Compression-type
 - 841822[†] - Refrigerators, household type :- Absorption-type, electrical
 - 841829[†] - Refrigerators, household type :- Other
 - 8450 - Household or laundry-type washing machines, including machines which both wash and dry
 - 8471 - Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included
 - 847130 - Portable digital automatic data processing machines, weighing not more than 10 kg, consisting of at least a central processing unit, a keyboard and a display
 - 847141 - Other digital automatic data processing machines :- Comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined
 - 847149 - Other digital automatic data processing machines :- Other, presented in the form of systems
 - 850910 - Vacuum cleaners
 - 851660 - Other ovens; cookers, cooking plates, boiling rings, grillers and roasters
 - 8517 - Electrical apparatus for line telephony or line telegraphy, including line telephone sets with cordless handsets and telecommunication apparatus for carrier-current line systems or for digital line systems; videophones
 - 852520* - Transmission apparatus incorporating reception apparatus
 - 8528 - Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; video monitors and video projectors
 - 8703 - Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading No. 87.02), including station wagons and racing cars

HS 2007 nomenclature:

- 851712[‡] - Telephones for cellular networks/for other wireless networks, other than line telephone sets with cordless handsets

Note: The trade flows based on HS 1996 nomenclature are available from year 1996 onward and those based on HS 2007 from year 2007 onward. [†] We combine the trade flows of 841821, 841822, and 841829 of HS 1996 in the estimations. [‡] The product 851712 of HS 2007 do not have a perfect concordance in HS 1996; the closest one is 852520, which includes 851712 of HS 2007 but also other products.

Table 8: PPML regression of Korea merchandise exports on TV exports (selected HS sectors)

HS sectors	33	61	62	7113	7117	8415	8418	84182 [†]	8450	8471
TV exports (lagged)	0.207*** (0.070)	0.091*** (0.020)	0.169*** (0.055)	0.234*** (0.083)	0.133* (0.069)	0.066** (0.030)	0.035 (0.038)	0.137*** (0.049)	0.016 (0.066)	0.038 (0.055)
GDP	-0.030 (0.169)	0.927*** (0.197)	0.335 (0.230)	0.132 (0.309)	0.726*** (0.147)	0.454*** (0.168)	0.612*** (0.091)	0.461** (0.236)	0.631*** (0.102)	0.874*** (0.313)
GDP per capita	0.479*** (0.173)	0.451*** (0.083)	-0.094 (0.177)	0.935*** (0.291)	0.329*** (0.060)	-0.166 (0.168)	-0.151 (0.117)	-0.049 (0.196)	-0.103 (0.107)	-0.113 (0.222)
Distance	-0.276 (0.275)	0.116* (0.065)	0.759*** (0.195)	-0.018 (0.430)	-0.017 (0.178)	0.651*** (0.195)	0.962*** (0.092)	0.636*** (0.228)	0.975*** (0.152)	-0.144 (0.131)
Embassy	4.528*** (0.949)	0.943 (1.028)	0.852 (1.318)	3.616*** (0.986)	1.570*** (0.588)	2.297*** (0.510)	0.369 (0.823)	-0.547 (0.921)	0.012 (0.872)	2.216* (1.198)
RTA	-0.408 (0.411)	-0.406* (0.231)	-1.159* (0.601)	-0.608 (0.502)	-0.422 (0.616)	-0.350 (0.241)	0.042 (0.143)	0.460* (0.267)	-0.046 (0.407)	-0.416 (0.316)
Overseas Korean	0.127 (0.131)	0.033 (0.082)	0.333*** (0.104)	-0.159 (0.266)	-0.013 (0.087)	0.174* (0.096)	0.263*** (0.059)	-0.105 (0.158)	0.293*** (0.075)	-0.005 (0.105)
R ²	0.513	0.985	0.915	0.348	0.813	0.893	0.969	0.719	0.954	0.828
Obs	241	241	241	241	241	241	241	241	241	241
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	847130	847141	847149	850910	851660	8517	852520	8528	8703	851712 [‡]
TV exports (lagged)	0.177** (0.077)	0.135* (0.081)	-0.086 (0.096)	0.035 (0.100)	0.022 (0.050)	-0.022 (0.067)	0.085* (0.044)	0.040 (0.065)	-0.033 (0.038)	0.087*** (0.030)
GDP	0.349 (0.248)	0.146 (0.255)	0.276 (0.206)	0.417* (0.250)	0.533** (0.272)	0.361 (0.309)	0.225* (0.134)	0.744*** (0.182)	0.654*** (0.150)	0.429*** (0.140)
GDP per capita	0.638*** (0.199)	0.360 (0.225)	0.227*** (0.082)	0.145 (0.270)	-0.315*** (0.106)	-0.289 (0.180)	0.362* (0.188)	0.424*** (0.165)	-0.168 (0.222)	0.534*** (0.122)
Distance	0.286*** (0.111)	0.702* (0.364)	-0.205 (0.162)	0.963*** (0.194)	1.147*** (0.136)	-0.607** (0.241)	0.652** (0.256)	0.388** (0.191)	1.052*** (0.300)	0.609*** (0.116)
Embassy	5.501*** (0.926)	-1.970** (1.007)	2.512*** (0.978)	0.884 (1.356)	2.286** (1.039)	2.832*** (1.073)	3.770*** (0.765)	1.993** (1.012)	0.775 (0.703)	2.825*** (1.016)
RTA	0.316 (0.379)	1.441*** (0.525)	0.889 (0.748)	-2.367*** (0.764)	-0.331 (0.689)	-0.072 (0.544)	0.140 (0.399)	-1.132** (0.465)	-0.174 (0.187)	0.169 (0.389)
Overseas Korean	0.108 (0.095)	0.731*** (0.139)	0.376*** (0.146)	0.324** (0.143)	0.462*** (0.144)	0.379* (0.223)	0.258*** (0.080)	-0.219** (0.111)	0.285*** (0.071)	0.219*** (0.074)
R ²	0.852	0.984	0.787	0.798	0.952	0.936	0.861	0.705	0.971	0.945
Obs	241	241	241	241	241	241	241	241	241	171
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: [†] Combined trade values of HS 841821, 841822, and 841829. [‡] Trade values based on HS 2007 nomenclature. The standard error clustered by destination is in the bracket. The variables: TV program exports, GDP, GDP per capita, Distance, Overseas Koreans are in log. The sectoral trade data are based on imports reported by importing countries. TV program exports are lagged by one year. See the text and the data appendix for the definitions of the above variables.

Table 9: Korea FDI Sector Classification

agri	agriculture, forestry, fisheries
entertainment	arts, sports, leisure services
business	business facilities management, business support services
construction	construction industry
education	education service industry
electricity	electricity, gas, steam, water supply business
finance	finance, insurance
health	health, social services
manufacturing	manufacturing
mining	mining industry
others	associations and organizations, other personal services
broadcasting	publishing, video, broadcasting, communication, information
estate	real estate business, leasing business
restaurant	accommodation, restaurant business
research	professional, scientific, technical services
transportation	transportation
wastetreat	sewage, waste treatment, environmental restoration
wholesale	wholesale, retail

Note: Data are from The Export-Import Bank of Korea, which belongs to the Korean government. See <https://stats.koreaexim.go.kr/odisas.html>.

Table 10: PPML regression of Korea outward FDI on TV exports

FDI sectors	agri	entertain.	business	construct.	education	electricity	finance	health	manufact.
TV exports (lagged)	-0.195*** (0.073)	0.263** (0.105)	0.240*** (0.064)	-0.126* (0.067)	0.245*** (0.071)	0.231* (0.121)	0.114 (0.121)	0.200** (0.083)	-0.021 (0.062)
GDP	0.786** (0.350)	-0.406** (0.168)	0.133 (0.296)	-0.036 (0.171)	-0.084 (0.221)	-0.450** (0.211)	0.205 (0.241)	-0.060 (0.223)	0.396** (0.202)
GDP per capita	-1.448*** (0.427)	0.305* (0.162)	-0.052 (0.311)	-0.484*** (0.158)	-0.080 (0.250)	0.574* (0.300)	0.322 (0.279)	0.200 (0.404)	-0.529 (0.331)
Distance	0.742** (0.326)	-0.097 (0.375)	0.515** (0.257)	0.029 (0.365)	1.112*** (0.277)	0.543 (0.375)	0.216 (0.481)	1.093*** (0.421)	-0.363 (0.298)
RTA	1.640** (0.673)	-0.633 (0.540)	1.244*** (0.445)	0.577 (0.356)	-0.069 (0.503)	-0.203 (0.574)	0.482 (0.486)	-0.136 (0.568)	0.545* (0.284)
Overseas Korean	0.180 (0.153)	0.537*** (0.152)	0.279* (0.169)	0.439*** (0.126)	0.669*** (0.147)	0.341 (0.216)	0.204 (0.181)	0.579** (0.231)	0.297*** (0.103)
R^2	0.583	0.696	0.361	0.464	0.854	0.161	0.543	0.822	0.858
Obs	236	236	236	236	236	215	236	236	236
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	mining	others	broadcast.	estate	restaurant	research	transport.	wastetreat	wholesale
TV exports (lagged)	-0.098 (0.111)	0.088* (0.049)	0.264** (0.105)	-0.032 (0.094)	0.203** (0.084)	0.076 (0.130)	0.083 (0.128)	0.613** (0.295)	0.136* (0.072)
GDP	-0.138 (0.233)	0.489* (0.256)	-0.055 (0.126)	-0.143 (0.180)	-0.144 (0.191)	-0.077 (0.254)	-0.033 (0.211)	0.504 (0.430)	-0.018 (0.203)
GDP per capita	0.031 (0.317)	-0.156 (0.322)	0.633*** (0.124)	0.255 (0.231)	-0.266 (0.179)	0.884** (0.369)	0.390 (0.308)	-0.837*** (0.277)	0.505* (0.288)
Distance	1.452*** (0.326)	0.737** (0.345)	0.556*** (0.166)	0.312 (0.250)	0.951*** (0.223)	0.400 (0.505)	0.213 (0.455)	0.632 (0.539)	0.412 (0.331)
Embassy	0.496 (1.340)								
RTA	-0.081 (0.437)	0.474 (0.581)	0.028 (0.295)	0.448 (0.464)	0.579 (0.407)	-0.098 (0.742)	1.331** (0.615)	0.947 (1.167)	-0.191 (0.420)
Overseas Korean	0.544*** (0.128)	0.492*** (0.142)	0.358*** (0.109)	0.539*** (0.153)	0.735*** (0.136)	0.325* (0.169)	0.329* (0.189)	-0.113 (0.413)	0.317** (0.124)
R^2	0.529	0.919	0.727	0.539	0.690	0.613	0.511	0.159	0.596
Obs	241	236	236	236	236	236	236	221	236
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: The variable ‘Embassy’ is dropped from estimation in all sectors except ‘mining’. The standard error clustered by destination is in the bracket. The variables: TV program exports, GDP, GDP per capita, Distance, Overseas Koreans are in log. TV program exports are lagged by one year. See the text and the data appendix for the definitions of the above variables.