# Constraining Factors on the Contribution of Tourism to General Economy

관광산업의 경제 기여도 제한요인

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# Constraining Factors on the Contribution of Tourism to General Economy

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# Constraining Factors on the Contribution of Tourism to General Economy

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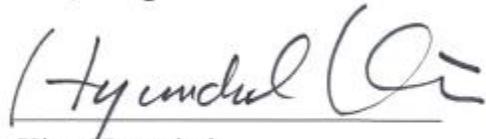
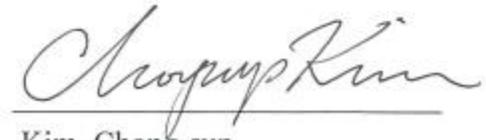*Signature*
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Abstract

# Constraining Factors on the Contribution of Tourism to General Economy

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Tourism has been considered as a motor for economic development, and for such reason, many countries, including Latin American countries, have tried to promote tourism sector. However, not all the tourism revenue is not multiplied and contributes directly to its general economy because some of the revenue outflows to foreign countries. This so-called 'leakage effect' has been discussed as an impediment to economic development in developing countries.

To investigate the determinants of leakage effect, this research employs Keynesian multiplier as a measurement of leakage and runs regressions to verify the relationship between the tourism sector's Keynesian multiplier and

other important economic factors such as production process sophistication, foreign ownership, infrastructure quality, and size of economy.

This research confirms the definition of economic leakage and identifies imports as percentage of GDP, production process sophistication, and quality of infrastructure as significant determinants at the global level. According to the result of regression analyses, at the global level, a country with higher percentage of imports and less sophisticated production process is likely to have a higher degree of leakage in its general economy. Prevalence of foreign ownership is turned out not to be a significant determinant of leakage at the global level, while it can help offset the leakage in Latin America. Quality of infrastructure has a positive impact on Latin American economies while the negative spillover effects can contribute to increase in leakage effect in the neighboring regions.

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# Abbreviation

| | |
|---|---|
| **FDI** | Foreign Direct Investment |
| **GDP** | Gross Domestic Product |
| **UNCTAD** | United Nations Conference on Trade and Development |
| **UNWTO** | United Nations World Tourism Organization |
| **USD** | United States dollar(s) |
| **WEF** | World Economic Forum |
| **WTTC** | World Travel & Tourism Council |

# 1. Introduction

Tourism is considered as a driver for economic development by attracting tourism revenue, including foreign currency, and vitalizing the local communities around the tourist attractions. Moreover, tourism industry contributes to economic progress in national economy by increasing demand for tourism-related service, food and agricultural products, manufactured goods, and the like.

For these reasons, many Latin American countries, which have abundant natural touristic resources and historical heritages, have promoted tourism sector as one of main growth motors. According to World Travel & Tourism Council, the average capital investment of Latin American countries in tourism sector increased from 500 million USD in 1988 to 3.83 billion USD in 2013, and the ratio of capital investment to all fixed investment increased from 3.45% in 1988 to 6.265% in 2013 (WTTC, 2014a).

**Figure 1. Average Capital Investment in Latin America**
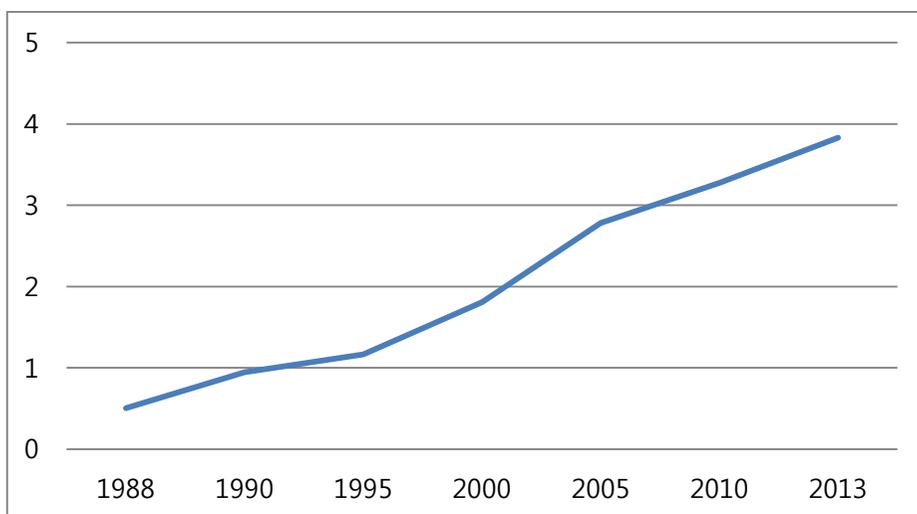


* source: author's calculation with data downloaded from WTTC. (unit: billion USD)

**Table 1. International Tourist Arrival**

|  | 1990 | 1995 | 2000 | 2005 | 2010 | 2012 |
|---|---|---|---|---|---|---|
| **World** | 463 | 529 | 677 | 809 | 949 | 1035 |
| **Europe** | 262.7 | 305.9 | 388 | 488.9 | 485.5 | 534.2 |
| **Asia and the Pacific** | 55.8 | 82 | 110.1 | 153.6 | 205.1 | 233.6 |
| **Americas** | 92.8 | 109 | 128.2 | 133.3 | 150.4 | 163.1 |
| **- North America** | 71.7 | 80.7 | 91.5 | 89.9 | 99.3 | 106.7 |
| **- Caribbean** | 11.4 | 14 | 17.1 | 18.8 | 19.5 | 20.9 |
| **- Latin America** | 9.7 | 14.3 | 19.6 | 24.6 | 31.6 | 35.5 |
| **Africa** | 14.8 | 18.8 | 26.2 | 34.8 | 49.9 | 52.4 |
| **Middle East** | 9.6 | 13.7 | 24.1 | 36.3 | 58.2 | 54.9 |

\* source: UNWTO Tourism Highlights 2013 Edition    (unit:million)

Due to this effort, the international tourist arrivals in Latin America increased from 9.6 million in 1990 to 35.6 million in 2012, and the international tourism receipts reached 31.7 billion USD in 2012 (UNWTO, 2013).

However, not every country can take a full advantage of its tourism sector as a growth promoter. If a country does not have well-diversified tourism-related industries and, subsequently, is dependent on imports, its tourism revenue will be leaked to the other countries from which the tourism sector imports materials and goods. This is one of the reasons why some developing countries encounter so-called leakage effect. Leakage is "the process whereby part of the foreign exchange earnings generated by tourism, rather than reaching or remaining in tourist-receiving countries, is either retained by tourist-generating countries or other foreign firms" (UNCTAD, 2010, p. 9). In this connection, import seems to be a key explanatory variable to understand the leakage effect since, according to the definition, the more the tourism sector consumes imported goods, the more revenue flows out to overseas.

Accordingly, a high level of leakage in a country is not recommendable for its future since leakage can hamper the accumulation of capital and seriously damage the contribution of tourism sector to the general economy.

However, from a perspective of globalization, a certain level of leakage effect is inevitable since more and more countries open their markets and become part of the global value chain on the basis of international trade and it is impossible for a state to adhere to autarky. In this matter, we have to admit the important role that imports play, especially in an industrial sector which imports raw material and intermediate goods for exporting the finished goods. In addition, imported goods lower the prices in the domestic market and increase the total welfare. Therefore, it is not a proper policy recommendation to unlimitedly avoid importing the goods so as to eliminate the leakage effect.

Some can easily conclude from the zero-sum view point that then we have to import goods and services to the extent the imports do not produce sever leakage effect. That is, we need to find out the balance point. However, it is very difficult to find out to what extent imports can be welcomed in practices. In this connection, we should not see the relationship between leakage and imports only on the zero-sum basis but also examine leakage effect from a different viewpoint to find out whether import is the only one explanatory variable for leakage or other important factors also matter.

Also it should be examined whether a regional difference exists and changes the patterns of leakage. Some phenomena can be explained by a theory while others cannot. Accordingly, it is important to examine the applicability of the concept of leakage and relevant presumptions at a regional level. If distinctive regional characteristics are found at regional level, it will be very helpful to understand the distinctiveness of the region and develops further the existing

concepts and theories. In this context, this research considers Latin America suitable for being examined separately since Latin America has a distinctive history of economic development. Accordingly, this research tries to examine the possible determinants of leakage in Latin America in comparison with those in the world.

# 2. Literature Review

Leakage Effect has been studied by various scholars and international organizations since leakage is generally considered as impediment to economic development. Trade and Development Board of UNCTAD (2010) pointed out leakage effect as a challenge for developing countries in pursuit of its development through tourism, and categorized it into economic leakage and structural leakage. Economic leakage occurs when a developing country is not capable of supplying the goods and services of proper quality or in sufficient quantity and imports them from abroad or when transnational tourism companies sources from abroad. Structural leakage occurs because the components of tourism value chain are distributed all over the world. International tourists can purchase tourism products in their country and what they consume in the destination country is relatively small. For example, international tourists use their national airline, and book their accommodation through their national traveling agency. In addition, low level of economic diversification, prevalence of foreign companies in the tourism sector, monopolistic status of some tourism providers are also mentioned in the UNCTAD report as main causes. And the report suggests the developing countries to reduce leakage by increase forward and backward linkages.

On the contrary, Lejárraga and Walkenhorst (2010) hold a different view to the relationship between linkage and leakage. According to their empirical cross-country analysis, linkage and leakage in the tourism is not correlated and not in a complimentary relationship, which is against the common presumption that linkage is inversely associated with leakage.

Another common presumption that multinational tourism companies

outflows the tourism revenue to their origin country is adversely commented on by Zimny (2005). He posits that "it would be wrong to conclude that countries with more FDI experience higher leakages," and "compared with other sectors, including manufacturing and agriculture, leakages in tourism are low, resulting in net income and foreign exchange surpluses from tourism in developing countries." (Zimny, 2005, p. 58)

  Considering the above mentioned researches, there is no convergence in explaining the major determinants of leakage effect even though various researches have been conducted.

# 3. Methodology

## (1) Leakage Calculation

This research is intended to identify what constrains contribution of tourism to national economy. Here, the constraint on the contribution of tourism to national economy is represented by the concept of leakage. Even though there are various methods for leakage calculation, this research develops further on the basis of the methodology used in Lejárraga and Walkenhorst's work (2010), in which leakage was calculated with the Keynesian multipliers.

$$Leakage = 1 - Total\ Keynesian\ Multiplier$$
$$= 1 - \frac{Total\ Contribution\ of\ Tourism\ to\ General\ Economy}{Tourist\ Expenditure}$$

Data for this calculation were collected from World Travel & Tourism Council (WTTC). WTTC defines 'Total Contribution of Tourism to GDP' as GDP generated by direct tourism industries plus the indirect and induced contributions. (WTTC, 2014b) According to Lejárraga and Walkenhorst (2010), "direct impacts accrue from initial tourist spending in the tourism industry."(p. 418) "Indirect impacts are generated when tourist expenditures mainstream from the tourism economy to the general economy through purchases of goods and services from nontourist sectors of the local economy."(p. 418) Finally, "induced effects are attributable to the increased income of wage-earners related to the tourism economy." (p. 418)

And tourist expenditure in this research is calculated as sum of 'Visitor Exports' and 'Domestic Travel & Tourism Spending'. WTTC defines 'Visitor Exports' as spending within the country by international tourists for both

business and leisure trips, including transportation spending, and it defines 'domestic spending' as spending within a country by that country's residents for both business and leisure trips.

**Figure 2. Effects of Tourism: Direct, Indirect, and Induced**
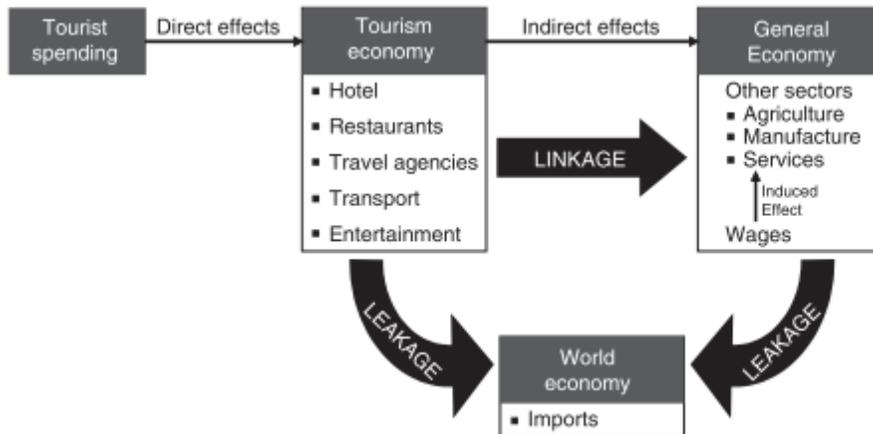


* source: Lejárraga, I. and P. Walkenhorst (2010). "On Linkages And Leakages: Measuring The Secondary Effects Of Tourism." Applied Economics Letters(17): 417-421.

When it comes to leakage, it may remind of outflowed portion of total money that international tourists spend for their entire travel or they spend in the destination country. However, since this research focuses on the overall relationship between tourism sector and general economy, it covers also tourism revenue by domestic tourists. In other words, the purpose of this research is to find out what economic elements at national level promote or hinder the contribution of tourism to general economy. Accordingly, taking into account the purpose of this research and the calculation method of leakage, in this research economic leakage is defined as a phenomenon in which the tourism revenue has a lower level of economic impact on (or contribution to) general economy.

## (2) Hypotheses

This research is intended to find out what factors affects the degree of leakage in the national economy by examining the definition and the following presumptions about leakage on the basis of quantitative analysis. Accordingly, regression analysis is employed in order to examine the following hypotheses.

Hypothesis 1: Technology is inversely associated with leakage

As mentioned in the earlier section, economic leakage occurs when domestic firms are not able to produce the goods and services of quality required to be consumed in the tourism sector. (UNCTAD, 2010) For example, international tourists from the developed world or domestic tourists with higher taste want to consume quality products which are not produced domestically due to lack of production technology. Therefore, it is possible to presume that a country with lower production technology tend to have a higher level of leakage in its economy

Hypothesis 2: foreign ownership is directly proportional to leakage

As mentioned in the literature review, there are different views on the impact of foreign ownership. Some are concerned that multinational tourism companies outflow their gain in the tourism sector to their own countries. Others accentuate the positive impact of foreign direct investment (FDI). (Zimny, 2005) They argue that FDI helps develop tourism industry in a country with limited resources, and in turn their investment in tourism will lead to increase in income and employment. To examine the different viewpoints, it is assumed for the moment that the prevalence of foreign ownership in a country is proportionally associated with leakage.

Hypothesis 3: infrastructure quality is inversely associated with leakage

Infrastructure of low quality may curb the multiplier effect of tourism revenue because tourism is in a reciprocal relationship with infrastructure. Development of tourism industry increases demand for improvement in infrastructure, and improved infrastructure, in turn, smoothens the tourism activities in which tourists use roads, rails, and air and water links and also consume water, electricity, and gas. Therefore, less developed infrastructure may hinder the contribution of tourism sector to the general economy. On the basis of this rationale, it is assumed for now that quality of infrastructure is inversely associated with leakage.

However, Boarnet (1998) bought up a question for the possibility of negative output spillover from public infrastructure. In his research, "the model of productive public capital shows that when input factors are mobile, public infrastructure investments in one location can draw production away from other locations." (Boarnet, 1998, p. 381) According to this research, the benefits of public infrastructure may be distributed on the zero-sum basis, which means that when region A wins because of improvement in its infrastructure, other regions may lose for the same reason.

Taking into account these two different views on the impact of infrastructure, the following regression results will tell us whether infrastructure has a positive economic impact or not.

Hypothesis 4: size of economy is inversely associated with leakage

UNCTAD said in its report that leakage effect may be a more serious problem to small economies such as Caribbean countries. (UNCTAD, 2010) In case of Latin American countries, countries of small sized economy, such

as Nicaragua, Panama, Paraguay, El Salvador, and Uruguay, tend to show higher degree of leakage than other larger economies such as Mexico, Brazil, Argentina, and Colombia. Accordingly, it is important to verify through 148-country data[1] analysis whether small sized economies are more prone to leakage, and to examine the distinctiveness of Latin America in terms of GDP.

**Table 2. Leakage in Latin American countries**

|  | annual average (2006-2012) |
|---|---|
| Argentina | -1.09 |
| Bolivia | -0.73 |
| Brazil | -1.12 |
| Chile | -0.57 |
| Colombia | -1.04 |
| Costa Rica | -0.76 |
| Ecuador | -1.25 |
| El Salvador | -0.51 |
| Guatemala | -0.73 |
| Honduras | -0.83 |
| Mexico | -0.99 |
| Nicaragua | 0.18 |
| Panama | -0.03 |
| Paraguay | -0.59 |
| Peru | -0.83 |
| Uruguay | -0.63 |
| Venezuela | -0.94 |
| regional average | -0.73 |

\* Source: author's calculation with data from WTTC

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[1] Refer to the list of 148 countries in Appendix

## (3) Regression Equation

In order to verify the above-mentioned hypotheses, panel regression analysis with fixed effect was employed. The time period of data used in the regression analysis ranges from 2006 to 2012. The estimation models are stated as below.

(i) Estimation model 1

$$LEAKAGE_{it} = \alpha_i + \beta_1 IMPORTS_{it} + \beta_2 PROD.SOPHI_{it} + \beta_3 FOREIGN_{it} + \beta_4 INFRA_{it} + \varepsilon_{it}$$

(ii) Estimation model 2

lnGDP was added to Estimation model 2 as following in order to examine whether the size of economy has a significant impact on the other variables as assumed in the hypothesis 4.

$$LEAKAGE_{it} = \alpha_i + \beta_1 IMPORTS_{it} + \beta_2 PROD.SOPHI_{it} + \beta_3 FOREIGN_{it} + \beta_4 INFRA_{it} + \beta_5 lnGDP_{it} + \varepsilon_{it}$$

Where:

- $LEAKAGE_{it}$ is the dependent variable where i= country and t = year,

- $\alpha_i$ is the unknown intercept for each

- IMPORTS, PROD.SOPHI, FOREIGN, INFRA, and lnGDP represent independent variables

- $\beta$ represents coefficient for its independent variable

- $\varepsilon_{it}$ is the error term

Each estimation model will be employed in the 3 sets of regression analyses

using (i) the data from the world (148 countries including Latin American countries), (ii) the data from 17 Latin American countries, and (iii) the data from the world without 17 Latin American countries (131 countries) so as to see the regional distinctiveness in Latin America and compare that with the world.

(i) Control Variables

In this model, control variable is IMPORTS.

IMPORTS means imports as percentage of a country's GDP, and this variable represents the definition of economic leakage, which states that higher imports cause higher leakage. This data was collected from Global Competitiveness Index dataset of World Economic Forum.

(ii) Variables of Interest

In this model, variables of interest include PROD.SOPHI, FOREIGN, INFRA, and lnGDP.

PROD.SOPHI means production process sophistication. This variable represents how sophisticated production processes are, and in this model, this index is used as measurement of production technology. The higher index value means highly technology- and knowledge-intensive production process is applied in a country, whereas the lower value represents labor-intensive or old technology in the production. (WEF, 2013)

FOREIGN means degree of prevalence of foreign ownership. This variable represents how prevalent foreign ownership of companies is in a country. The higher the index value is, the more prevalent the foreign ownership is. (WEF, 2013)

INFRA means quality of overall infrastructure. This variable represents the assessment of general infrastructure in a country. The higher the index value is, the more extensive and efficient the infrastructure is. (WEF, 2013)

lnGDP means natural logarithm of Gross Domestic Product. This variable represents size of economy. This dataset was collected from World Development Indicators of World Bank.

# 4. Empirical Result

In order to verify the relationship between leakage and explanatory variables in the above mentioned hypotheses, panel data multiple regression analysis was conducted using fixed effect.

## (1) Result of regression: world (148 countries)

**Table 3. Result of Regression 'world01'**

| Dependent Variable: | Leakage |
|---|---|
| observations: | 902 |
| R-squared (within) | 0.117 |
| | world01 |
| **IMPORTS** | 0.0006 |
| | (2.15)** |
| **PROD.SOPHI** | -0.0229 |
| | (-1.69)* |
| **FOREIGN** | -0.0033 |
| | (-0.35) |
| **INFRA** | 0.0225 |
| | (2.71)*** |

Note: Panel linear regression with fixed effect

Values in parentheses are t-statistics.

\* significant at 10%, \*\* significant at 5 %, \*\*\* significant at 1%

First of all, as the definition of leakage indicated earlier, the imports as percentage of GDP was proven to be a significant explanatory variable for leakage effect.

One of the important findings in this regression result is that the sophisticated production process is inversely associated with leakage. This

means that the sophisticated production technology can offset the leakage effect caused by imports and that a country with lower level of technology is more likely to suffer from leakage effect. This result emphasizes the importance of production technology even for development in the service sector, and it also provides the policymakers with a lesson that economic development led by tourism also requires more investment in research and development of related manufacturing industries. In this context, economic development led by tourism is also turned out to be a difficult task for low income countries without fundamentals for manufacturing, which choose to promote tourism sector in order to support the entire economy.

  Another important finding from the regression result is that the prevalence of foreign ownership in companies is not a significant determinant of leakage. This result is not consistent with the presumption that foreign companies contribute to leakage, and it rather allows a room to Zimny's argument that FDI does not necessarily produce increased level of leakage. (Zimny, 2005) This result may imply that countries that want to develop their economy by boosting tourism do not need to be hesitated because of the possible leakage effect caused by FDI in their economy. This result also may make sense in connection with the previously mentioned importance of technology because FDI plays important role in introducing technology from advanced countries. Therefore, the policymakers need to take into account the importance of FDI in promoting their tourism sector and national economy together.

  Quality of infrastructure was turned out to be negatively correlated to leakage, which is the opposite of the hypothesis 3. However, this does not mean that countries with infrastructure of higher quality tend to suffer from the leakage. Instead, considering the previously mentioned 'negative spillover

effect,' this can be interpreted that the aggregate negative spillover effect caused in some countries surpassed the aggregate positive effect of infrastructure.

**Table 4. Result of Regression 'world02'**

| Dependent Variable: | **Leakage** |
|---|---|
| observations: | 879 |
| R-squared (within) | 0.0002 |
| | world02 |
| **IMPORTS** | 0.0006 |
| | (2.05)** |
| **PROD.SOPHI** | -0.0241 |
| | (-1.71)* |
| **FOREIGN** | -0.0048 |
| | (-0.51) |
| **INFRA** | 0.0206 |
| | (2.24)** |
| **lnGDP** | 0.0157 |
| | (0.42) |

Note: Panel linear regression with fixed effect

Values in parentheses are t-statistics.

* significant at 10%, ** significant at 5 %, *** significant at 1%

In the second regression result, size of economy was proven not to be a significant determinant of leakage. And the significance levels of variables were not affected much by addition of variable lnGDP.

## (2) Result of regression: 17 Latin American countries

**Table 5. Result of Regression 'latin_01'**

| Dependent Variable: | Leakage |
|---|---|
| observations: | 119 |
| R-squared (within) | 0.3817 |
| | latin_01 |
| **IMPORTS** | -0.0015 |
| | (-1.46) |
| **PROD.SOPHI** | 0.0942 |
| | (2.57)** |
| **FOREIGN** | -0.0386 |
| | (-1.85)* |
| **INFRA** | -0.0729 |
| | (-4.25)*** |

Note: Panel linear regression with fixed effect

Values in parentheses are t-statistics.

* significant at 10%, ** significant at 5 %, *** significant at 1%

The regression on 17 Latin American countries shows a very different result comparing to that of the world.

First, in Latin America, high percentage of imports is proven not to be a significant determinant of leakage. In addition, even though the t-value tells that it is not a significant variable, imports as percentage of GDP is inversely associated with leakage. This is the opposite of the previous regression results run with data from 148 countries. This can be interpreted with the industrial structure in Latin America. As we know, some Latin American countries including Mexico import parts and components, and create some value-added on them, and re-export them. Since imports can lead to creation of value-

added and re-exports instead of being all consumed domestically, it cannot be necessarily categorical that imports decrease the contribution of tourism revenue to general economy. Rather, the impact of imports on the degree of leakage needs to be considered with region- or country-specific characteristics

This regression also shows an opposite result of the regressions on the world in terms of production process sophistication. In this regression, Latin American countries that have sophisticated production process have a high level of leakage. This is also a distinctive feature of Latin American countries comparing to the world.

In terms of prevalence of foreign ownership, this regression on Latin American countries shows a different result from the previous regressions on the world as well. This time, this variable is proven to be significant at 10%, which support that prevalence of foreign ownership has a positive impact on the Latin American economies. This result is also consistent with Zimny's argument about the positive impact of FDI in tourism-related industries (Zimny, 2005).

Lastly, this regression shows the opposite result of the previous regressions on the world again. According to this regression result, Latin America benefits from improvement in infrastructure. Taking into account the previous regression results, it can be understood that improvement in infrastructure in Latin American draw production away from other regions. Therefore, some countries outside of Latin America lose in the competition of securing the mobile input factors.

**Table 6. Result of Regression 'latin_02'**

| Dependent Variable: | Leakage |
|---|---|
| observations: | 119 |
| R-squared (within) | 0.1464 |
| | latin_02 |
| **IMPORTS** | -0.0014 |
| | (-1.33) |
| **PROD.SOPHI** | 0.1022 |
| | (2.76)*** |
| **FOREIGN** | -0.0367 |
| | (-1.76)* |
| **INFRA** | -0.0620 |
| | (-3.22)*** |
| **lnGDP** | -0.0918 |
| | (-1.23) |

Note: Panel linear regression with fixed effect

Values in parentheses are t-statistics.

* significant at 10%, ** significant at 5 %, *** significant at 1%

On the other hand, any significant correlation between size of economy and leakage was not found in Latin America as it was not found either in the world. And addition of lnGDP variable did not make a big difference in the coefficient and t-statistics of the other variables.

## (3) Result of regression: world without Latin America

**Table 7. Result of Regression 'except latin_01'**

| Dependent Variable: | Leakage |
|---|---|
| observations: | 783 |
| R-squared (within) | 0.0614 |
| | |
| | except latin_01 |
| **IMPORTS** | 0.0007 |
| | (2.43)** |
| **PROD.SOPHI** | -0.0322 |
| | (-2.24)** |
| **FOREIGN** | 0.0074 |
| | (0.72) |
| **INFRA** | 0.0390 |
| | (4.22)*** |

Note: Panel linear regression with fixed effect

Values in parentheses are t-statistics.

* significant at 10%, ** significant at 5 %, *** significant at 1%

This regression using the data from 131 countries shows similar results to the previous results of the regressions on the world. Since Latin American countries, which have distinctive characteristics from the world, were excluded from the data, the absolute values of the coefficient and t-statistics values are higher. According to this regression result, imports are a significant determinant of leakage as the terminology 'leakage' is defined. And sophisticated production technology can contribute to increase in the multiplier effect of tourism revenue. In terms of infrastructure, the world except Latin America is losing in the competition of securing mobile factors. However, since this is also an aggregate result, there can be winning countries and losing countries among the 137 countries.

**Table 8. Result of Regression 'except latin_02'**

| Dependent Variable: | Leakage |
|---|---|
| observations: | 760 |
| R-squared (within) | 0.0146 |
| | |
| | except latin_02 |
| **IMPORTS** | 0.0007 |
| | (2.33)** |
| **PROD.SOPHI** | -0.0364 |
| | (-2.42)** |
| **FOREIGN** | 0.0067 |
| | (0.64) |
| **INFRA** | 0.0346 |
| | (3.4)*** |
| **lnGDP** | 0.0448 |
| | (1.09) |

Note: Panel linear regression with fixed effect

Values in parentheses are t-statistics.

* significant at 10%, ** significant at 5 %, *** significant at 1%

As shown in the previous regression results, any significant correlation between size of economy and leakage was not found in 131 countries. And addition of lnGDP variable did not make a big difference in the coefficient and t-statistics of the other variables, either.

## (4) Interpretation

The previous regression results show that the definition of leakage is generally acceptable. Countries with higher percentage of imports display a tendency to have a higher degree of leakage in their economies. And countries with more sophisticated production process can offset the leakage effect caused by imports because advanced technology enable an economy produce the goods that will be imported if they do not have such technology.

On the other hands, correlation of some variables with leakage is subject to the region- or country-specific characteristics. As there is a debate over the impact of FDI, prevalence of foreign ownership can be helpful in offsetting the leakage effect as the result of regression using Latin American countries has shown. It is consistent with the argument that "it would be wrong to conclude that countries with more FDI experience higher leakages." (Zimny, 2005, p. 58) However, the positive impact of FDI at the global level is unclear since the result of regression on the world did not show significant value in t-statistics. Therefore, policymakers needs not to be biased neither toward the presumption that foreign ownership helps outflow tourism revenue nor toward the opposite argument. It is recommended that policymakers make decisions taking into account many other variables, especially including the region- or country-specific characteristics.

Another important finding in the previous regression results is that the leakage can be subject to infrastructure. Generally, improvement in infrastructure is accepted as good investment for long-term economic development. However, this research highlights the existence of negative spillover effects in terms of leakage effect in tourism. Construction of infrastructure in one location can draw mobile input factors from neighboring

locations, and this may decrease the produceableness of goods and the potential for development of related industries in the neighboring locations. Actually, it is turned out that Latin America is winning in this competition. This is possible not because Latin America has absolutely higher quality of infrastructure, but because regional characteristics such as labor cost, geopolitics, natural resources, trade agreement and the like influence the distribution of mobile factors at the global level.

# 5. Conclusion

This research was conducted to identify the determinants of economic leakage and the regional distinctive characteristics related to economic leakage. The regression analyses show that imports, production process sophistication, and infrastructure quality are significant determinants of leakage at the global level.

On the other hand, the analyses also show us the distinctive characteristics of Latin American countries and this implies that the applicability of generally accepted theory may not be consistent with a particular region or countries.

Also this research clarifies the zero-sum relationship between regions by verifying that the negative spillover effect of infrastructure divides the world into input factor winners and losers, and that it in turn affects the degree of leakage.

Considering the findings of this research, policymakers should be noted that applying an universal theory may not work in a particular region or country because of regional- or country-specific characteristics.

Meanwhile, this research has some limitations. The first limitation is that this research just identified that the production process sophistication is proportional in Latin America as a distinctive feature of Latin American countries, but could not suggest the acceptable explanation about the relationship between leakage and production process in the Latin American countries. Accordingly, further studies are needed to verify the distinctive relationship between production process and leakage in Latin America.

Another limitation is that this research is limited to study economic leakage,

rather than structural leakage. This limitation arises from the methodology employed in this research because the calculation of leakage used in this research is not suitable to examine the global distribution of value chain components and its implication in terms of leakage effect. Therefore, structural leakage can be better studied from a different approach.

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# Appendix

## A. 148 Countries in Data Used for the Regression Analyses

| | | | |
|---|---|---|---|
| Albania | Ecuador* | Lebanon | Qatar |
| Algeria | Egypt | Lesotho | Romania |
| Angola | El Salvador* | Liberia | Russia |
| Argentina* | Estonia | Libya | Rwanda |
| Armenia | Ethiopia | Lithuania | Saudi Arabia |
| Australia | Finland | Luxembourg | Senegal |
| Austria | France | Macedonia | Serbia |
| Azerbaijan | Gabon | Madagascar | Seychelles |
| Bahrain | Gambia | Malawi | Sierra Leone |
| Bangladesh | Georgia | Malaysia | Singapore |
| Barbados | Germany | Mali | Slovakia |
| Belgium | Ghana | Malta | Slovenia |
| Benin | Greece | Mauritania | South Africa |
| Bhutan | Guatemala* | Mauritius | Spain |
| Bolivia* | Guinea | Mexico* | Sri Lanka |
| Bosnia and Herzegowina | Guyana | Moldova | Suriname |
| Botswana | Haiti | Mongolia | Swaziland |
| Brazil* | Honduras* | Montenegro | Sweden |
| Brunei | Hong Kong | Morocco | Switzerland |
| Bulgaria | Hungary | Mozambique | Taiwan |
| Burkina Faso | Iceland | Myanmar | Tanzania |
| Burundi | India | Namibia | Thailand |
| Cambodia | Indonesia | Nepal | Timor-Leste |
| Cameroon | Iran | Netherlands | Trinidad and Tobago |
| Canada | Ireland | New Zealand | Tunisia |
| Cape Verde | Israel | Nicaragua* | Turkey |
| Chad | Italy | Nigeria | Uganda |
| Chile* | Jamaica | Norway | Ukraine |
| China | Japan | Oman | United Arab Emirates |
| Colombia* | Jordan | Pakistan | United Kingdom |

| | | | |
|---|---|---|---|
| Costa Rica* | Kazakhstan | Panama* | United States |
| Cote D'ivoire | Kenya | Paraguay* | Uruguay* |
| Croatia | Korea, Republic of | Peru* | Venezuela* |
| Cyprus | Kuwait | Philippines | Vietnam |
| Czech Republic | Kyrgyzstan | Poland | Yemen |
| Denmark | Laos | Portugal | Zambia |
| Dominican Republic | Latvia | Puerto Rico | Zimbabwe |

Countries with * represent 17 Latin American countries

B. Leakage by Country

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|
| **Albania** | -0.790 | -0.704 | -0.672 | -0.619 | -0.603 | -0.558 | -0.567 |
| **Algeria** | -1.254 | -1.321 | -1.056 | -0.957 | -0.873 | -0.858 | -0.821 |
| **Angola** | -0.918 | -0.817 | -0.677 | -0.663 | -0.825 | -0.865 | -0.886 |
| **Anguilla** | -0.502 | -0.573 | -0.538 | -0.415 | -0.661 | -0.704 | -0.681 |
| **Antigua and Barbuda** | -1.176 | -1.431 | -1.702 | -1.816 | -1.568 | -1.329 | -1.440 |
| **Argentina** | -1.008 | -1.057 | -1.091 | -1.119 | -1.063 | -1.139 | -1.187 |
| **Armenia** | -0.717 | -0.526 | -0.915 | -0.880 | -0.802 | -0.757 | -0.724 |
| **Aruba** | -0.527 | -0.470 | -0.435 | -0.736 | -0.821 | -0.562 | -0.784 |
| **Australia** | -0.830 | -0.864 | -0.907 | -0.974 | -1.176 | -1.072 | -1.029 |
| **Austria** | -0.716 | -0.638 | -0.545 | -0.683 | -0.667 | -0.613 | -0.646 |
| **Azerbaijan** | -0.871 | -0.865 | -0.797 | -0.750 | -0.757 | -0.681 | -0.692 |
| **Bahamas** | -0.561 | -0.504 | -0.498 | -0.590 | -0.652 | -0.621 | -0.638 |
| **Bahrain** | -0.459 | -0.516 | -0.727 | -0.773 | -0.795 | -0.562 | -0.579 |
| **Bangladesh** | -0.577 | -0.552 | -0.573 | -0.469 | -0.440 | -0.370 | -0.387 |
| **Barbados** | -0.723 | -0.772 | -0.816 | -0.945 | -0.840 | -0.871 | -0.909 |
| **Belarus** | -0.397 | -0.488 | -0.368 | -0.397 | -0.376 | -0.315 | -0.313 |
| **Belgium** | -0.532 | -0.449 | -0.394 | -0.545 | -0.656 | -0.553 | -0.546 |
| **Belize** | -0.764 | -0.819 | -0.966 | -1.108 | -1.060 | -1.070 | -1.007 |
| **Benin** | -0.957 | -0.802 | -0.881 | -1.082 | -1.014 | -0.962 | -0.936 |
| **Bermuda** | -0.461 | -0.490 | -0.559 | -0.561 | -0.592 | -0.537 | -0.547 |
| **Bolivia** | -0.810 | -0.797 | -0.764 | -0.723 | -0.628 | -0.653 | -0.715 |
| **Bosnia and Herzegowina** | -0.568 | -0.674 | -0.624 | -0.671 | -0.710 | -0.660 | -0.654 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Botswana** | -0.372 | -0.370 | -0.252 | -0.389 | -0.369 | -0.253 | -0.271 |
| **Brazil** | -1.112 | -1.188 | -1.134 | -1.133 | -1.135 | -1.101 | -1.046 |
| **Brunei** | -0.710 | -0.684 | -0.792 | -0.661 | -0.699 | -0.729 | -0.684 |
| **Bulgaria** | -0.699 | -0.747 | -0.747 | -0.709 | -0.573 | -0.517 | -0.484 |
| **Burkina Faso** | -0.701 | -0.851 | -0.795 | -0.723 | -0.626 | -0.632 | -0.539 |
| **Burundi** | -0.500 | -1.083 | -0.833 | -0.486 | -0.483 | -0.519 | -0.447 |
| **Cambodia** | -0.649 | -0.761 | -0.733 | -0.779 | -0.708 | -0.598 | -0.593 |
| **Cameroon** | -0.468 | -0.425 | -0.308 | -0.446 | -0.418 | -0.368 | -0.277 |
| **Canada** | -0.993 | -1.054 | -1.103 | -1.060 | -1.067 | -1.087 | -1.099 |
| **Cape Verde** | -0.786 | -0.784 | -1.313 | -1.558 | -1.359 | -1.180 | -1.185 |
| **Caribbean** | -0.521 | -0.430 | -0.565 | -0.664 | -0.571 | -0.621 | -0.652 |
| **Cayman Islands** | -0.728 | -0.786 | -0.991 | -0.920 | -0.892 | -0.910 | -0.965 |
| **Chad** | -2.396 | -1.957 | -1.626 | -1.691 | -1.813 | -1.946 | -2.053 |
| **Chile** | -0.350 | -0.473 | -0.440 | -0.759 | -0.770 | -0.684 | -0.503 |
| **China** | -0.964 | -1.096 | -1.140 | -1.148 | -0.946 | -0.985 | -0.984 |
| **Colombia** | -1.132 | -1.173 | -1.064 | -0.915 | -0.990 | -0.947 | -1.031 |
| **Comoros** | -0.583 | -0.583 | -0.667 | -1.333 | -1.000 | -0.667 | -0.333 |
| **Congo** | -0.461 | -0.650 | -0.760 | -1.069 | -0.956 | -1.021 | -1.032 |
| **Congo, the Demotratic Republic of the** | 0.062 | 0.111 | -0.226 | -0.516 | -0.065 | -0.037 | -0.081 |
| **Costa Rica** | -0.725 | -0.685 | -0.674 | -0.816 | -0.844 | -0.797 | -0.808 |
| **Cote D'ivoire** | 0.058 | -0.113 | -0.066 | -0.047 | -0.015 | -0.016 | 0.199 |
| **Croatia** | -0.406 | -0.398 | -0.397 | -0.390 | -0.294 | -0.239 | -0.159 |
| **Cuba** | -1.084 | -0.991 | -1.247 | -1.558 | -1.332 | -1.329 | -1.292 |
| **Cyprus** | -0.819 | -0.873 | -0.853 | -0.949 | -0.777 | -0.819 | -0.811 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Czech Republic** | -0.718 | -0.622 | -0.719 | -0.801 | -0.667 | -0.704 | -0.620 |
| **Denmark** | -0.657 | -0.601 | -0.634 | -0.788 | -0.938 | -0.913 | -1.057 |
| **Dominica** | -0.614 | -0.664 | -0.611 | -0.756 | -0.600 | -0.718 | -0.736 |
| **Dominican Republic** | -0.514 | -0.396 | -0.524 | -0.664 | -0.557 | -0.543 | -0.590 |
| **Ecuador** | -0.954 | -1.115 | -1.342 | -1.466 | -1.278 | -1.288 | -1.327 |
| **Egypt** | -1.044 | -1.074 | -1.096 | -1.134 | -1.084 | -1.187 | -1.096 |
| **El Salvador** | -0.475 | -0.311 | -0.559 | -0.538 | -0.573 | -0.570 | -0.510 |
| **Estonia** | -0.933 | -0.981 | -0.944 | -0.974 | -0.842 | -0.850 | -0.894 |
| **Ethiopia** | -1.134 | -1.330 | -0.912 | -0.946 | -0.954 | -0.886 | -1.022 |
| **Fiji** | -0.856 | -0.905 | -0.658 | -0.796 | -0.810 | -0.814 | -0.873 |
| **Finland** | -0.518 | -0.532 | -0.462 | -0.729 | -0.656 | -0.602 | -0.669 |
| **Former Netherlands Antilles** | -0.317 | -0.136 | -0.246 | -0.302 | -0.203 | -0.304 | -0.296 |
| **France** | -0.652 | -0.618 | -0.576 | -0.642 | -0.632 | -0.616 | -0.608 |
| **Gabon** | -0.764 | -0.962 | -1.167 | -1.100 | -0.957 | -1.043 | -0.890 |
| **Gambia** | -0.611 | -0.783 | -1.181 | -1.344 | -1.188 | -1.154 | -1.072 |
| **Georgia** | -0.595 | -0.696 | -0.724 | -0.680 | -0.630 | -0.607 | -0.584 |
| **Germany** | -0.435 | -0.471 | -0.563 | -0.522 | -0.620 | -0.587 | -0.602 |
| **Ghana** | -0.656 | -0.655 | -0.625 | -0.716 | -0.752 | -0.811 | -0.698 |
| **Greece** | -1.042 | -1.010 | -0.962 | -1.161 | -0.964 | -0.866 | -0.776 |
| **Grenada** | -0.559 | -0.645 | -0.741 | -0.819 | -0.936 | -0.890 | -0.927 |
| **Guadeloupe** | -4.010 | -4.195 | -4.478 | -4.663 | -4.241 | -3.925 | -3.858 |
| **Guatemala** | -0.530 | -0.717 | -0.764 | -0.682 | -0.767 | -0.807 | -0.809 |
| **Guinea** | -0.626 | -0.646 | -0.647 | -0.854 | -0.829 | -0.654 | -0.704 |
| **Guyana** | -0.933 | -0.649 | -0.660 | -0.612 | -0.504 | -0.426 | -0.339 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Haiti** | 0.071 | 0.172 | -0.127 | -0.146 | 0.607 | 0.140 | -0.062 |
| **Honduras** | -0.760 | -0.800 | -0.836 | -0.830 | -0.844 | -0.890 | -0.874 |
| **Hong Kong** | -0.229 | -0.208 | -0.225 | -0.298 | -0.231 | -0.223 | -0.265 |
| **Hungary** | -0.760 | -0.731 | -0.693 | -0.738 | -0.703 | -0.643 | -0.625 |
| **Iceland** | -1.718 | -1.774 | -1.434 | -1.083 | -1.858 | -1.377 | -1.122 |
| **India** | -0.563 | -0.622 | -0.618 | -0.466 | -0.450 | -0.438 | -0.318 |
| **Indonesia** | -0.942 | -0.961 | -1.090 | -1.567 | -1.476 | -1.504 | -1.510 |
| **Iran** | -1.303 | -1.246 | -1.264 | -1.281 | -1.175 | -1.224 | -1.186 |
| **Iraq** | -1.310 | -0.910 | -0.820 | -0.875 | -0.883 | -0.951 | -0.973 |
| **Ireland** | -1.190 | -1.170 | -1.104 | -1.122 | -1.390 | -1.320 | -1.261 |
| **Israel** | -0.817 | -0.759 | -0.813 | -0.836 | -0.807 | -0.859 | -0.857 |
| **Italy** | -0.801 | -0.866 | -0.828 | -0.823 | -0.797 | -0.695 | -0.723 |
| **Jamaica** | -0.614 | -0.609 | -0.546 | -0.686 | -0.786 | -0.815 | -0.800 |
| **Japan** | -1.229 | -1.243 | -1.141 | -1.245 | -1.199 | -1.269 | -1.259 |
| **Jordan** | -0.736 | -0.723 | -0.740 | -0.832 | -0.781 | -0.859 | -0.788 |
| **Kazakhstan** | -1.095 | -0.974 | -1.101 | -1.496 | -1.417 | -1.358 | -1.362 |
| **Kenya** | -1.162 | -1.102 | -1.072 | -1.085 | -0.913 | -0.866 | -0.920 |
| **Korea, Republic of** | -0.535 | -0.515 | -0.298 | -0.423 | -0.282 | -0.195 | -0.170 |
| **Kuwait** | -0.838 | -0.885 | -0.894 | -0.654 | -0.696 | -0.629 | -0.687 |
| **Kyrgyzstan** | -0.371 | 0.719 | 0.793 | 1.246 | 1.271 | 0.999 | 1.176 |
| **Laos** | -1.151 | -1.254 | -1.243 | -1.489 | -1.401 | -1.485 | -1.435 |
| **Latvia** | -0.685 | -0.765 | -0.807 | -0.795 | -0.578 | -0.659 | -0.650 |
| **Lebanon** | 0.104 | 0.077 | 0.027 | -0.083 | -0.249 | -0.217 | -0.253 |
| **Lesotho** | -0.140 | -0.172 | -0.134 | -0.395 | -0.380 | -0.359 | -0.287 |
| **Libya** | -0.842 | -0.819 | -0.812 | -0.631 | -0.670 | -0.908 | -0.666 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Lithuania** | -0.256 | -0.325 | 0.091 | -0.139 | 0.301 | 0.246 | 0.263 |
| **Luxembourg** | 0.184 | 0.061 | 0.047 | -0.160 | -0.011 | -0.598 | -0.931 |
| **Macao** | -0.317 | -0.504 | -0.196 | -0.018 | 0.119 | 0.259 | 0.224 |
| **Macedonia** | -0.435 | -0.423 | -0.414 | -0.591 | -0.561 | -0.488 | -0.527 |
| **Madagascar** | -0.781 | -1.199 | -1.284 | -1.450 | -1.350 | -1.404 | -1.375 |
| **Malawi** | -0.366 | -0.547 | -0.410 | -0.501 | -0.480 | -0.457 | -0.327 |
| **Malaysia** | -0.517 | -0.546 | -0.518 | -0.530 | -0.520 | -0.513 | -0.536 |
| **Maldives** | 0.026 | 0.031 | 0.092 | -0.269 | -0.250 | -0.065 | -0.330 |
| **Mali** | -0.682 | -0.804 | -0.695 | -0.782 | -0.849 | -0.855 | -0.861 |
| **Malta** | -0.901 | -0.781 | -0.834 | -0.862 | -0.880 | -0.814 | -0.841 |
| **Martinique** | -1.614 | -1.622 | -1.698 | -1.913 | -1.606 | -1.623 | -1.581 |
| **Mauritius** | -0.540 | -0.697 | -0.815 | -0.810 | -0.712 | -0.714 | -0.719 |
| **Mexico** | -0.991 | -0.942 | -0.943 | -1.025 | -0.994 | -0.996 | -1.015 |
| **Middle East** | -0.708 | -0.677 | -0.778 | -0.717 | -0.727 | -0.736 | -0.744 |
| **Moldova** | 0.636 | 0.948 | 1.294 | 1.048 | 1.270 | 1.274 | 1.227 |
| **Mongolia** | 0.234 | 0.053 | -0.180 | -0.793 | -0.433 | -0.080 | 0.161 |
| **Montenegro** | -0.411 | -0.059 | -0.338 | 0.404 | 0.446 | 0.560 | 0.460 |
| **Morocco** | -0.925 | -1.029 | -1.079 | -1.099 | -1.048 | -0.972 | -1.022 |
| **Mozambique** | -0.556 | -0.630 | -0.681 | -0.694 | -0.752 | -0.731 | -0.750 |
| **Myanmar** | -0.801 | -0.712 | -0.791 | -0.841 | -0.766 | -0.700 | -0.698 |
| **Namibia** | -0.334 | -0.212 | 0.039 | 0.193 | -0.178 | -0.232 | -0.234 |
| **Nepal** | -0.878 | -0.767 | -0.645 | -0.660 | -0.755 | -0.753 | -0.690 |
| **Netherlands** | -0.408 | -0.484 | -0.380 | -0.438 | -0.370 | -0.315 | -0.307 |
| **New Zealand** | -0.601 | -0.627 | -0.569 | -0.611 | -0.648 | -0.766 | -0.660 |
| **Nicaragua** | 0.254 | 0.331 | 0.236 | 0.124 | 0.104 | 0.120 | 0.126 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Niger** | -0.783 | -0.867 | -0.893 | -0.630 | -0.654 | -0.695 | -0.519 |
| **Nigeria** | -0.442 | -0.588 | -0.682 | -0.752 | -0.403 | -0.340 | -0.395 |
| **Norway** | -1.308 | -1.226 | -1.224 | -1.346 | -1.426 | -1.431 | -1.467 |
| **Oman** | -1.009 | -1.018 | -0.927 | -0.718 | -0.768 | -0.736 | -0.727 |
| **Pakistan** | -0.465 | -0.510 | -0.714 | -0.894 | -0.905 | -0.880 | -0.906 |
| **Panama** | -0.100 | -0.002 | -0.092 | -0.123 | 0.203 | 0.014 | -0.093 |
| **Papua New Guinea** | -0.223 | -0.068 | -0.071 | -0.290 | -0.047 | -0.047 | -0.125 |
| **Paraguay** | -0.572 | -0.615 | -0.557 | -0.631 | -0.465 | -0.569 | -0.721 |
| **Peru** | -0.789 | -0.815 | -0.830 | -0.911 | -0.884 | -0.778 | -0.811 |
| **Philippines** | -0.647 | -0.630 | -0.690 | -0.807 | -0.675 | -0.739 | -0.721 |
| **Poland** | -0.985 | -0.903 | -0.929 | -0.917 | -0.857 | -0.820 | -0.730 |
| **Portugal** | -0.842 | -0.877 | -1.010 | -1.036 | -1.092 | -1.017 | -0.948 |
| **Puerto Rico** | 0.124 | 0.355 | 0.088 | 0.147 | 0.333 | 0.035 | -0.032 |
| **Qatar** | -1.555 | -1.259 | -1.507 | -1.624 | -1.335 | -0.898 | -0.752 |
| **Reunion** | -1.342 | -1.406 | -1.385 | -1.423 | -1.450 | -1.402 | -1.405 |
| **Romania** | -1.074 | -1.356 | -1.542 | -1.694 | -1.502 | -1.491 | -1.513 |
| **Russia** | -0.930 | -0.968 | -0.968 | -1.010 | -1.014 | -1.027 | -1.029 |
| **Rwanda** | -0.497 | -1.312 | -1.568 | -1.053 | -1.199 | -0.990 | -1.012 |
| **Saint Kitts and Nevis** | -0.744 | -0.769 | -0.853 | -0.934 | -0.635 | -0.708 | -0.883 |
| **Saint Lucia** | -0.753 | -0.668 | -0.517 | -0.504 | -0.399 | -0.453 | -0.548 |
| **Saint Vincent and the Grenadines** | -0.651 | -0.743 | -0.786 | -0.677 | -0.820 | -0.791 | -0.864 |
| **Saudi Arabia** | -1.296 | -1.166 | -1.127 | -1.114 | -1.201 | -1.216 | -1.221 |
| **Senegal** | -0.785 | -0.663 | -0.551 | -0.614 | -0.566 | -0.532 | -0.510 |
| **Serbia** | -0.354 | -0.401 | -0.639 | -0.502 | -0.371 | -0.494 | -0.462 |

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|---|---|---|---|---|---|---|---|
| **Seychelles** | -1.358 | -1.207 | -1.146 | -1.113 | -1.230 | -1.200 | -1.339 |
| **Sierra Leone** | -0.716 | -0.679 | -0.691 | -0.580 | -0.381 | -0.154 | -0.199 |
| **Singapore** | -0.101 | -0.377 | -0.157 | -0.632 | -0.441 | -0.419 | -0.372 |
| **Slovakia** | -0.285 | -0.295 | -0.298 | -0.402 | -0.275 | -0.239 | -0.236 |
| **Slovenia** | -0.689 | -0.651 | -0.701 | -0.743 | -0.758 | -0.806 | -0.748 |
| **Solomon Islands** | -0.450 | -0.713 | -0.650 | -0.746 | -0.770 | -0.490 | -0.650 |
| **South Africa** | -0.907 | -0.952 | -0.912 | -1.004 | -0.948 | -0.942 | -0.922 |
| **Spain** | -1.002 | -0.976 | -1.039 | -1.189 | -1.066 | -1.036 | -0.994 |
| **Sri Lanka** | -1.055 | -1.159 | -1.270 | -1.368 | -1.167 | -1.055 | -1.017 |
| **Sudan** | -0.407 | -0.627 | -0.865 | -0.900 | -1.096 | -0.978 | -0.855 |
| **Suriname** | -0.677 | -0.729 | -0.858 | -0.582 | -0.222 | -0.063 | -0.017 |
| **Swaziland** | -0.005 | 0.265 | 0.063 | -0.097 | -0.140 | -0.090 | -0.207 |
| **Sweden** | -0.577 | -0.583 | -0.552 | -0.581 | -0.587 | -0.568 | -0.580 |
| **Switzerland** | -0.615 | -0.583 | -0.591 | -0.730 | -0.755 | -0.746 | -0.722 |
| **Syria** | -0.794 | -0.836 | -0.873 | -0.878 | -0.760 | -0.758 | -0.740 |
| **Taiwan** | 0.315 | 0.295 | 0.408 | 0.474 | 0.364 | 0.360 | 0.365 |
| **Tanzania** | -1.186 | -1.208 | -1.130 | -1.601 | -1.455 | -1.419 | -1.522 |
| **Thailand** | -0.753 | -0.811 | -0.721 | -0.798 | -0.523 | -0.501 | -0.496 |
| **Togo** | -0.334 | -0.361 | -0.525 | -0.442 | -0.469 | -0.545 | -0.392 |
| **Tonga** | -1.500 | -1.500 | -1.500 | -1.500 | -1.667 | -1.333 | -0.800 |
| **Tunisia** | -1.092 | -1.041 | -0.985 | -1.020 | -0.954 | -1.054 | -0.941 |
| **Turkey** | -0.856 | -0.768 | -0.799 | -0.938 | -0.775 | -1.053 | -1.035 |
| **Uganda** | -1.021 | -1.092 | -0.958 | -0.937 | -0.872 | -0.843 | -0.898 |
| **Ukraine** | -0.526 | -0.553 | -0.526 | -0.583 | -0.449 | -0.402 | -0.379 |
| **United Arab** | 0.084 | -0.026 | -0.409 | -0.134 | -0.158 | -0.138 | -0.211 |

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|---|---|---|---|---|---|---|---|
| **Emirates** | | | | | | | |
| **United Kingdom** | -0.705 | -0.590 | -0.601 | -0.585 | -0.574 | -0.559 | -0.572 |
| **United States** | -1.011 | -1.035 | -1.075 | -1.223 | -1.128 | -1.050 | -1.072 |
| **Uruguay** | -0.358 | -0.456 | -0.113 | -0.883 | -0.901 | -0.870 | -0.827 |
| **Uzbekistan** | -1.251 | -1.234 | -1.463 | -1.540 | -1.504 | -1.512 | -1.444 |
| **Vanuatu** | -0.809 | -0.850 | -0.876 | -0.908 | -0.890 | -0.983 | -0.966 |
| **Venezuela** | -0.882 | -0.863 | -0.905 | -0.998 | -0.970 | -0.977 | -1.005 |
| **Vietnam** | -1.008 | -0.279 | -1.035 | -0.793 | -0.710 | -0.551 | -0.471 |
| **Virgin Islands (British)** | -0.473 | -0.391 | -0.430 | -0.460 | -0.403 | -0.388 | -0.402 |
| **Virgin Islands (U.S.)** | 0.289 | 0.206 | -0.055 | -0.107 | -0.068 | 0.071 | 0.031 |
| **Yemen** | -0.725 | -0.517 | -0.532 | -0.628 | -0.650 | -0.645 | -0.629 |
| **Zambia** | -0.567 | -0.526 | -0.566 | -0.720 | -0.715 | -0.581 | -0.553 |
| **Zimbabwe** | -0.540 | -0.462 | -0.323 | -0.396 | -0.348 | -0.246 | -0.315 |

국문초록

# 관광산업의 경제 기여도 제한요인


**민 경 석**

학과 및 전공: 국제학과 국제지역학

서울대학교 국제대학원


관광은 경제개발의 동력으로서 여겨져 왔고, 이에 따라 라틴 아메리카를 포함하는 많은 국가들이 관광 부문을 성장시키고자 노력해 왔다. 그러나 관광 수입의 일부는 외국으로 유출되기 때문에 관광 수입 전액이 승수되어 총 경제에 직접적으로 기여하는 것은 아니다. 소위 '유출효과'라고 불리는 이 현상은 개발도상국에서 경제개발의 걸림돌로서 논의되어 왔다.

유출효과의 결정요인을 연구하기 위해서 동 논문은 케인즈 승수를 유출의 측정치로 사용하여, 생산공정 성숙도, 외국인 기업소유, 인프라의 질 및 경제 규모와 같은 중요한 경제 요소들과 관광 업계의 케인스 승수 수치 사이의 관계를 확인하기 위해서 회귀분석을 사용하였다.

동 연구는 경제적 유출효과의 정의를 확인하고, 수입비율, 생산공정 성숙도 및 인프라의 질을 세계 수준에서 중요한 유출효과 결정요인으로 확인하였다. 회귀분석의 결과에 따르면, 세계 수준에서 수입 비율이 높고 생산공정 성숙도가 낮은 국가는 총 경제에서 보다 높은 유출효과를 경험할 가능성이 더 높다. 외국인 기업소유의 보편성은 세계 수준에서는 유의미한 유출 결정요인은 아니지만, 라틴 아메리카에서는 유출효과를 상쇄하는 데 기여할 수 있음이 확인 되었다. 인프라의 질은 라틴 아메리카 국가들의 경제에 긍정적인 효과를 가져오는 반면에 인프라의 부정적인 파급효과가 주변 국가들에서 유출효과를 증가시키는 데 기여할 수 있다.

주제어: 관광, 유출, 생산공정 성숙도, 외국인 기업소유, 인프라의 부정적인 파급효과, 중남미

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