

## KDI SCHOOL WORKING PAPER SERIES

# Effect of High-Speed Trains on Passenger Travel: Evidence from Korea

Jisun Baek
KDI School of Public Policy and Management

September, 2014
Working Paper 14-14



This paper can be downloaded without charge at:

KDI School of Public Policy and Management Working Paper Series Index:

http://www.kdischool.ac.kr/new/eng/faculty/working.jsp

The Social Science Network Electronic Paper Collection:

http://ssrn.com/abstract=2543433

<sup>\*</sup> We are grateful to the KDI School of Public Policy and Management for providing financial support.

## Effect of High-Speed Trains on Passenger Travel: Evidence from Korea

Jisun Baek\*

Korea Development Institute School of Public Policy and Management

September 2014

#### **Abstract**

In this paper, we evaluate the impact of high-speed train introduction on passenger transport. In particular, we examine whether the introduction of the high-speed train could increase the demand for train travel and substitute the demand for air travel. To address the question, we exploit the exogenous timing of high-speed train introduction in Korea and apply a difference-in-differences framework to examine the effect of high-speed train introduction on the market share of trains and domestic airlines among mass transit. Using the Korean administrative data, we find that high-speed train introduction has a substantial impact on the entire passenger transport. Specifically, we document a discrete increase in the number of train travelers in the city pairs that are directly connected by high-speed train after the introduction. We also present a discrete decrease in the share of air travelers for those city pairs, which suggests a certain amount of rivalry between modes of mass transportation.

JEL code: R4; L9

**Keywords:** high-speed train; mass-transportation; intermodal competition; difference-in-differences.

<sup>\*</sup>Email: jbaek@kdischool.ac.kr

#### 1 Introduction

In 2009, the President of the U.S., Obama announced the plan to construct high-speed rail system to boost economy and to create jobs related to rail transport industry. Success of this plan will depend on whether the introduction of high-speed train could fulfill the travelers' demand and thus have an impact on mass transportation. It is particularly important to examine the potential impact of the introduction of high-speed train as the construction of the high-speed rail system is very costly. To examine the question in hand, this paper exploits the introduction of the high-speed train, KTX in Korea on April 2004. The institutional setting in South Korea is particularly appropriate to examine the potential impact for the following reasons: i) the timing of high-speed train introduction was exogenously determined, ii) strong regulations imposed in South Korean transportation industry solve the endogeneity from prices that could affect the demand of train transport, and iii) data set in Korea observes the rich variations of choice sets and final choices.<sup>1</sup>

We use the difference-in-differences framework as an identification strategy by exploiting the exogenous timing of the introduction of KTX which was postponed due to the Asian financial crisis and brought forward for political reasons. In particular, we partition routes into control and treatment groups based on the availability of high-speed trains, and compare the outcome between groups before and after the introduction of high-speed train. From the analysis, we find high-speed train introduction caused significant changes not only to the ridership of passenger rail transport but also to that of the domestic airline industry. In particular, the routes that are connected with high-speed trains experienced a discrete increase in the share of passengers among mass intercity transit, compared to the routes that are not connected by high-speed trains. Furthermore, the number of rail passengers for those routes increased significantly due to the introduction of high-speed trains. Moreover, we find a certain amount of 'rivalry' between modes of mass-transit. In particular, we document a large causal effect of the introduction of high-speed train on the share of passengers using rail transportation and a discrete decrease in the share of domestic airline passengers.

This paper is related to the previous literature regarding intercity travel demand in Eu-

<sup>&</sup>lt;sup>1</sup>While the endogeneity problem is a common issue for the analyses on the effect of new products, the special economic circumstance in South Korean transportation industry mitigates the endogeneity problems. First of all, the decision to introduce high-speed rail system was made by the government. Pricing is also a common source of endogeneity, but the price being under the strong regulation of the government rather than entirely being under the discretion of the rail company also relieves the endogeneity issue from price decision process.

rope and the United States. However, only a handful of research in the literature explicitly considers the competition and substitution between closely related modes of transportation.<sup>2</sup> We try to extend the understanding of that relationship. Specifically, our work adds to the existing literature by examining the impact of high-speed train introduction not only on the rail industry but also on the competing modes of transportation as in Behrens and Pels (2012) and Park and Ha (2006). Furthermore, we extend those previous studies and analyze multiple routes affected by high-speed train introduction, utilizing the exogenous timing of high-speed train introduction to examine its causal effect.

We have organized the remainder of this paper as follows: Section 2 describes the data with summary statistics of key variables. Section 3 addresses the empirical strategy adopted for the analyses with required identifying assumptions, followed by a discussion of the results in Section 4. Section 5 offers a summary and concluding remarks.

#### 2 Data

The main analysis employs a dataset constructed from four different sources. In particular, we construct the dataset by using raw data provided by Korail, Korea Airports Corporation (KAC), Korean Statistical Information Service (KOSIS) and the Statistical Yearbook of Land, Transport & Maritime Affairs. The analysis combines information on three different modes of transportation—domestic airlines, intercity buses and railroads. The key variable of this data is the monthly aggregated number of passengers for each unidirectional pair of cities by each mode.<sup>3</sup> The data set also contains the major characteristics of each route, including average fares, travel distances, the city where each station—terminal or airport—is located and its characteristics.<sup>4</sup> Since one of our main goals is to examine the substitutability between

<sup>&</sup>lt;sup>2</sup>In particular, Rhoades, Williams, and Green (2006) takes intermodal competition into account to analyzes Amtrak's efforts regarding competition with airlines. Acutt and Dodgson (1996) also derives the cross-elasticities of demand between different public transportation modes, and Mandel, Gaudry, and Rothengatter (1994) finds nonlinearity in the utility function for intercity mode choice model.

<sup>&</sup>lt;sup>3</sup>Unfortunately, data on intercity bus industry only recognizes two cities involved in a route. In other words, the ridership for intercity buses is observed only at a *non-directional* pair of cities while the ridership for trains and flights are observed at a *unidirectional* pair of cities. In order to prevent losing information regarding other modes, we assume that all intercity travelers using buses purchase round trip travels.

<sup>&</sup>lt;sup>4</sup>Since there are multiple types of train service offered to consumers—Mugunghwa, Saemaeul and KTX – and multiple carriers in domestic airlines, the definition of their fares is not straightforward. We use the average fare to define a fare for a city pair when there is more than one type of rail service, or more than one carrier. Pricing is a common source of endogeneity, but fares in the Korean transportation industry are strongly regulated. Specifically, Korail, which operates all rail services needs the government's approval before changing fares, and the fares must only depend on the train type and travel distance. Similar rules apply to intercity buses. Pricing of airfares is much less restrictive than that of rail fares. Fares can be set at the discretion of airline companies as

airlines and high-speed trains, we limit the sample to the city pairs that are connected by the air travels. Thus, the resulting data set covers 16 city pairs over 84 months between January 2001 and December 2007.<sup>5</sup>

Table 1 summarizes the key variables for the periods before and after high-speed train introduction. *Number of Travelers* measures the number of passengers for railways and domestic airlines in a month t who travel for a city pair i, respectively. *Proportion of Travelers* measures the proportion of passengers using railways and domestic airlines in a month t for a city pair i among travelers for the city pair of mass-transit, airlines, railroads and intercity buses. The proportion of travelers for rail increased after the introduction of KTX whereas it decreased for airlines. Similarly, the number of rail travelers also increased after KTX compared to the number of air travelers. *Population D* and *Population A* measure the population of departure city and arrival city of a city pair, respectively. *Income Tax D* and *Income Tax A* are the income tax collected in the departure city and the arrival city. *Travel Distance* is the distance between the departure city and the arrival city, which may vary with modes in a city pair. *Average Fare* is the fare for travel between two cities, which may vary with modes.

#### 3 Empirical Strategy

The major obstacles for evaluating the causal impact of the event include the potential endogeneity of the timing and the selection of treated observations, which might bias the estimates from the difference-in-differences. However, the endogeneity issue is less likely to be concerning in our setting.

First of all, the timing of high-speed train introduction was arguably exogenous. The Korean government started planning the introduction of high-speed train in the 1970s, but it took more than 10 years to confirm the final plan and initiate the construction of the dedicated line. When the construction of the dedicated rail lines for KTX began on June 1992, the government planned to complete it by January 1999. However, the completion had been postponed until 2002 due to economic crisis in 1997, and postponed again until 2005. The government decided to launch new service using only a part of the dedicated rail line in 2004 since it seemed impossible to complete the construction for the entire rail line by 2005.<sup>6</sup>

long as they provide public notice in advance. However, the changes in airfares are not common in practice.

<sup>&</sup>lt;sup>5</sup>The results are qualitatively similar when we include the excluded observations.

<sup>&</sup>lt;sup>6</sup>The government decided to introduce it in 2004 as there was a public uproar against the delay. The construc-

Another concern regarding the evaluation of the effect is the endogeneity from prices because the change in the market share of rail travelers and the number of train travelers could have been induced by the change in the prices. However, the pricing scheme in Korea mitigates the concern as the determinants of rail fares include only train type and distance. To be specific, rail company, Korail sets a "minimum fare" and a "rate per Km" for each type of train subject to government's approval, and calculates fares based on a combination of train type and distance using the "Distance Scale Rates".<sup>7</sup>

Exploiting the exogeneity, this paper applies a differences-in-differences framework to evaluate the impact of high-speed train introduction on passenger transport, particularly on railways and domestic airlines. To be specific, we first define the treatment group as the routes-unidirectional city pairs-with a direct high-speed connection and the control group as the routes not directly connected by high-speed trains. We will capture the impact of high-speed train introduction by comparing the mean changes of passenger travel before and after high-speed train introduction in the treatment group with that in the control group. In particular, the impact on passenger transport from high-speed train introduction can be summarized by the estimates from (1).

$$Y_{it} = \beta A f ter_t \times Treat_i + \mathbf{X}'_{it} \Phi + \delta_i + \lambda_t + \epsilon_{it}$$
(1)

where  $Y_{it}$  is the outcome variable such as the share of passengers using railways and domestic airlines among travelers of mass-transit for route i in a month t or the natural log of the number of passengers for route i in a month t.  $\delta_i$  is time-invariant route fixed effects and  $\lambda_t$  is time-fixed effects which is common across groups.  $After_t$  is a dummy variable indicating period after the introduction of high-speed train and the  $Treat_i$  takes the value equal to one if the route is connected by high-speed train. The coefficient of the interaction term,  $\beta$ , identifies the causal impact of the high-speed train on the outcome variable.  $X_{it}$  is a set of characteristics of route i in period t such as cities' populations and the average fare, which vary across times and routes. Finally, the error term,  $\epsilon_{it}$  is clustered at the route level to avoid the complication due to the serial correlation of the error term.

The key identifying assumption of difference-in-differences framework is that the trends

tion of the entire dedicated line for KTX between Seoul and Busan was finished in 2010.

<sup>&</sup>lt;sup>7</sup>It means Fare = Greater value among Minimum Fare and (Rate per Km) $\times$ (Trip Distance).

of outcome variable would be same in both the treatment group and the control group in the absence of the introduction of high-speed train (Angrist & Pischke, 2009). Although it is hard to test directly the identifying assumption, we show that the trend of the outcome variable is similar *prior* to the impact of the introduction of high-speed train. Figure 1 presents the similar trends in the outcome variables before high-speed train introduction, thus it supports the internal validity of the analyses. Moreover, to control explicitly for the possibility of heterogeneous trends across the city pairs, we add group-specific linear time trends to the list of control variables.

#### 4 Results

This section summarizes the empirical result of introducing the high-speed train KTX on mass-transit. The first three columns of Table 2 summarize the causal effect of the introduction of high-speed train on the proportion of rail travelers among intercity travelers using mass-transit. In particular, column (1) of Table 2 provides the results with no additional covariates other than year fixed effects and city pair fixed effects. In addition to the fixed effects, column (2) reports the result with city pair specific linear trends to allow heterogeneity in time trends of the outcome variable across city pairs. Column (3) additionally controls for the variables changing with time and city pairs such as population of departure city and arrival city, income tax collected in the departure city and the arrival city, travel distance and average fare for the city pair. One can verify that the difference-in-difference estimator—the estimate of the coefficient of  $After_t \times Treat_i$ —is positive and statistically significant for all the specifications. Thus, the results suggest a positive causal impact of the high-speed train introduction on the share of train travelers among travelers using mass-transit. To be specific, the share of train travelers increased by 23 percent point due to the high-speed train introduction.

Moreover, we document the number of rail passengers discretely increasing after the introduction of high-speed train. In other words, we show that our main result regarding the share of the train travelers is not solely due to the reduction of travelers using other forms of transports. Columns (4)-(6) of Table 2 document the regression result estimating the equation (1) using the natural log of the number of train travelers as an outcome variable. Similar to the result presented in columns (1)-(3), the estimate of coefficient of interest is positive and

significant, showing a large increase—95 percent—in the number of train travelers due to the high-speed train introduction.

We also document that the impact of high-speed train introduction on the demand for domestic air travel. In particular, we estimate the main equation (1) adopting the proportion of air travelers among intercity mass- transit travelers as an outcome variable. Table 3 documents the regression result for various specifications identical to the ones used in Table 2. The estimate of coefficient of interest is negative and significant for both sets of outcomes. Specifically, the coefficients in columns (3) and (6) show that the proportion of air travelers among intercity travelers using mass transit decreased by 15 percent point due to the introduction of KTX, and the number of air travelers fell by 59 percent. This implies that the introduction of the high-speed rail service largely substitutes the domestic air connections. Our result suggests a rivalry in the mass transport industry and implies that the introduction of high-speed train could have a large impact on the air travels.

In addition, Figure 2 illustrates the total number of rail and air travelers for the cities that are directly connected by the KTX, and the red vertical line at April 2004 represents the time of KTX introduction. The figure confirms the discrete increase in the total number of rail travelers after the introduction of KTX, which was driven by the substitution of air travelers. We also show that the impact of high-speed train introduction is mainly due to the increase of passengers using KTX. Figure 3 shows the proportion of the travelers using KTX for the cities that are directly connected by the KTX among all train travelers. One can verify that the proportion increases discretely after the introduction of KTX.

#### 5 Conclusion

In this paper, we exploit the exogenous timing of the high-speed train introduction in Korea and employ a difference-in-difference framework to identify the causal impact of high-speed trains. Using the combined administrative data set, we document a discrete and large impact on the demand for train travel and domestic air travel caused by the introduction of high-speed trains. In particular, cities directly connected by the high-speed trains show a discrete increase in the number of train travelers after the introduction of KTX. We also show that the discrete increase is driven by passengers using KTX. Moreover, the proportion of air travelers between cities that are connected by high-speed trains among the individuals using

mass-transit discretely decreases after high-speed train introduction. This implies that high-speed trains could substitute the demand for air travel and thus change the composition of travelers of each mode for those city pairs.

Overall, our results show that high-speed train introduction caused significant changes not only in the ridership of trains but also in that of the entire Korean transportation industry. Thus, our results support the argument that an introduction of high-speed trains could boost the passenger rail transport industry and change the ways one travels.

#### References

- Acutt, M., & Dodgson, J. (1996). Cross-elasticities of demand for travel. *Transport policy*, 2(4), 271-277.
- Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics*. Princeton University Press.
- Behrens, C., & Pels, E. (2012). Intermodal competition in the London Paris passenger market: High-speed rail and air transport. *Journal of Urban Economics*, 71(3), 278-288.
- Mandel, B., Gaudry, M., & Rothengatter, W. (1994). Linear or nonlinear utility functions in logit models? the impact on German high-speed rail demand forecasts. *Transportation research part B*, 28B(2), 91-101.
- Park, Y., & Ha, H.-K. (2006). Analysis of the impact of high-speed railroad service on air transport demand. *Transportation research part E*, 42, 95-104.
- Rhoades, D., Williams, M., & Green, D. (2006). Imperfect substitutes:competitive analysis failure in U.S. intercity passenger rail. *World review of intermodal transportation research*, 1(1), 82-93.

**Table 1: Summary Statistics** 

|                             | Before KTX | introduction | After KTX introduction |           |
|-----------------------------|------------|--------------|------------------------|-----------|
| Variables                   | Mean       | SD           | Mean                   | SD        |
| RAIL                        |            |              |                        |           |
| Proportion of travelers     | 0.31       | 0.20         | 0.36                   | 0.31      |
| Number of Travelers         | 65523.96   | 82025.19     | 98592.70               | 137769.38 |
| ln(Number of Travelers)     | 10.10      | 1.54         | 9.74                   | 2.31      |
| Travel Distance(hundred Km) | 4.14       | 0.49         | 4.08                   | 0.49      |
| Average Fare(thousand KRW)  | 27.81      | 4.20         | 29.47                  | 3.87      |
| AIR                         |            |              |                        |           |
| Proportion of travelers     | 0.38       | 0.17         | 0.30                   | 0.23      |
| Number of Travelers         | 59851.94   | 67668.49     | 33777.88               | 39361.19  |
| ln(Number of Travelers)     | 10.48      | 1.06         | 9.69                   | 1.45      |
| Travel Distance(hundred Km) | 3.37       | 0.41         | 3.36                   | 0.42      |
| Average Fare(thousand KRW)  | 66.65      | 5.41         | 68.25                  | 4.42      |
| Additional Variables        |            |              |                        |           |
| Population D(million)       | 5.70       | 4.59         | 5.67                   | 4.58      |
| Population A(million)       | 5.70       | 4.59         | 5.67                   | 4.58      |
| Income Tax D(trillion KRW)  | 6.04       | 5.73         | 7.66                   | 7.40      |
| Income Tax A(trillion KRW)  | 6.04       | 5.73         | 7.66                   | 7.40      |
| N(obs)                      | 62         | 24           | 7                      | 716       |

N(obs) is the number of observations and SD stands for standard deviation. All monetary values are expressed in constant 2005 Korean Won(KRW).

Definition of Variables: Number of Travelers measures the number of passengers for railways and domestic airlines in a month t who travel for a city pair i, respectively. Proportion of Travelers is the proportion of passengers using railways and domestic airlines in a month t for a city pair i among mass-transit travelers for the city pair.  $Population\ D$  and  $Population\ A$  are the population of departure city and arrival city of a city pair, respectively.  $Income\ Tax\ D$  and  $Income\ Tax\ A$  are the income tax collected in the departure city and the arrival city.  $Travel\ Distance$  is the distance between the departure city and the arrival city, which may vary with modes in a city pair.  $Average\ Fare$  is the fare for the travel between two cities using each mode.

Table 2: Effect of KTX Introduction on Train Travels

|                                |          | Share    |           | ln(Num   | ber of Pas | sengers)  |
|--------------------------------|----------|----------|-----------|----------|------------|-----------|
|                                | (1)      | (2)      | (3)       | (4)      | (5)        | (6)       |
| After×Treat                    | 0.240*** | 0.217*** | 0.234***  | 1.431*** | 1.112***   | 0.953***  |
|                                | (0.0375) | (0.0374) | (0.0403)  | (0.2018) | (0.1290)   | (0.1676)  |
| Population D                   |          |          | 0.523     |          |            | 2.648     |
| •                              |          |          | (0.5374)  |          |            | (2.8340)  |
| Population A                   |          |          | 0.473     |          |            | 2.728     |
| •                              |          |          | (0.5716)  |          |            | (3.0202)  |
| Income Tax D                   |          |          | -0.012    |          |            | -0.193*** |
|                                |          |          | (0.0078)  |          |            | (0.0258)  |
| Income Tax A                   |          |          | -0.012    |          |            | -0.191*** |
|                                |          |          | (0.0084)  |          |            | (0.0242)  |
| Travel Distance                |          |          | 0.044     |          |            | -0.041    |
|                                |          |          | (0.0309)  |          |            | (0.4298)  |
| Average Fare                   |          |          | -0.004*** |          |            | 0.033*    |
| Ü                              |          |          | (0.0013)  |          |            | (0.0162)  |
| TIME FE                        | yes      | yes      | yes       | yes      | yes        | yes       |
| Citypar FE                     | yes      | yes      | yes       | yes      | yes        | yes       |
| Citypair Specific Linear Trend | no       | yes      | yes       | no       | yes        | yes       |
| Additional Controls            | no       | no       | yes       | no       | no         | yes       |
| adj. R-sq                      | 0.975    | 0.990    | 0.990     | 0.980    | 0.992      | 0.992     |
| N                              | 1340     | 1340     | 1340      | 1340     | 1340       | 1340      |

After × Treat is the interaction between After and Treat where After is a dummy variable indicating period after the introduction of high speed train and the Treat takes the value equal to one if the route is connect by high speed train. All specifications control for year-month fixed effects and city pair fixed effects. Specifications (2) & (5) additionally includes city pair specific linear trends, and specifications (3) & (6) additionally controls for time varying characteristics of city pairs such as populations of departure and arrival cities, income tax collected in the departure city and the arrival city, and average fares.

Standard errors are clustered at the city pair level.

<sup>\*\*\*</sup> p < 0.01, \*\* p < 0.05, \* p < 0.1

Table 3: Effect of KTX Introduction on Domestic Air Travels

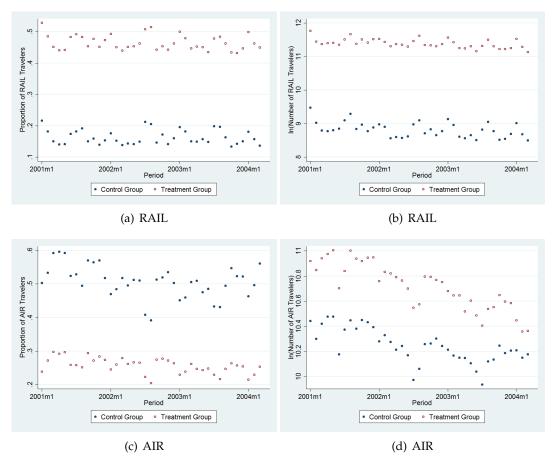
|                                |           | Share     |           | ln(Num    | ber of Pass | sengers)  |
|--------------------------------|-----------|-----------|-----------|-----------|-------------|-----------|
|                                | (1)       | (2)       | (3)       | (4)       | (5)         | (6)       |
| After×Treat                    | -0.123*** | -0.161*** | -0.154*** | -0.961*** | -0.625***   | -0.592*** |
|                                | (0.0408)  | (0.0271)  | (0.0262)  | (0.2996)  | (0.1376)    | (0.1346)  |
| Population D                   |           |           | -0.748    |           |             | 8.442     |
| -                              |           |           | (0.6803)  |           |             | (5.6002)  |
| Population A                   |           |           | -0.682    |           |             | 8.325     |
| -                              |           |           | (0.6800)  |           |             | (5.9149)  |
| Income Tax D                   |           |           | 0.039***  |           |             | 0.055     |
|                                |           |           | (0.0052)  |           |             | (0.0449)  |
| Income Tax A                   |           |           | 0.039***  |           |             | 0.055     |
|                                |           |           | (0.0052)  |           |             | (0.0472)  |
| Travel Distance                |           |           | 0.047     |           |             | 0.059     |
|                                |           |           | (0.0405)  |           |             | (0.1981)  |
| Average Fare                   |           |           | 0.005     |           |             | 0.033**   |
|                                |           |           | (0.0036)  |           |             | (0.0113)  |
| Time FE                        | yes       | yes       | yes       | yes       | yes         | yes       |
| Citypar FE                     | yes       | yes       | yes       | yes       | yes         | yes       |
| Citypair Specific Linear Trend | no        | yes       | yes       | no        | yes         | yes       |
| Additional Controls            | no        | no        | yes       | no        | no          | yes       |
| adj. R-sq                      | 0.926     | 0.972     | 0.974     | 0.929     | 0.982       | 0.983     |
| N T                            | 1340      | 1340      | 1340      | 1340      | 1340        | 1340      |

 $After \times Treat$  is the interaction between After and Treat where After is a dummy variable indicating period after the introduction of high speed train and the Treat takes the value equal to one if the route is connect by high speed train. All specifications control for year-month fixed effects and city pair fixed effects. Specifications (2) & (5) additionally includes city pair specific linear trends, and specifications (3) & (6) additionally controls for time varying characteristics of city pairs such as populations of departure and arrival cities, income tax collected in the departure city and the arrival city, and average fares.

Standard errors are clustered at the city pair level.

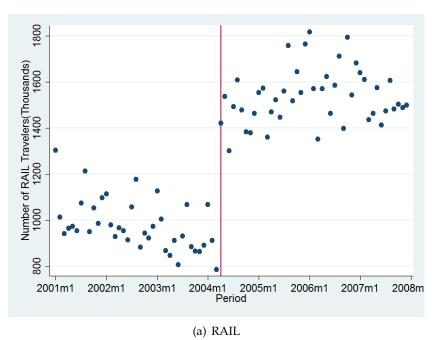
<sup>\*\*\*</sup> p < 0.01, \*\* p < 0.05, \* p < 0.1

Figure 1: Trends in the outcome variables before high-speed train introduction



The treatment group is defined as unidirectional city pairs with a direct high-speed connection and the control group is as the city pairs that are not directly connected by high-speed trains.

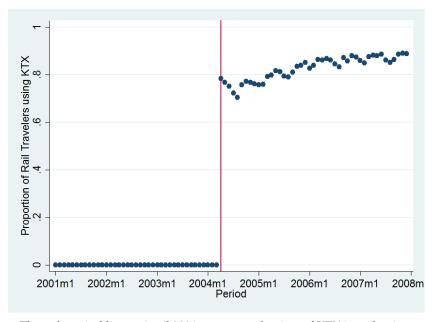
Figure 2: The total number of RAIL/AIR travelers for the cities that are directly connected by the KTX line



2001m1 2002m1 2003m1 2004m1 2005m1 2006m1 2007m1 2008m (b) AIR

The red vertical line at April 2004 represents the time of KTX introduction.

Figure 3: The proportion of rail travelers using KTX trains for the cities that are directly connected by the KTX line



The red vertical line at April 2004 represents the time of KTX introduction.

| Category         | Serial #          | Author                                      | Title   |
|------------------|-------------------|---|---|
| Working<br>Paper | 99-01             | Se-Il Park                                  | Labor Market Policy and The Social Safety Net in Korea: After 1997 Crisis   |
| Working<br>Paper | 99-02             | Sang-Woo Nam                                | Korea's Economic Crisis and Corporate Governance  |
| Working<br>Paper | 99-03             | Sangmoon Hahm                               | Monetary Bands and Monetary Neutrality  |
| Working<br>Paper | 99-04             | Jong-Il You<br>Ju-Ho Lee                    | Economic and Social Consequences of globalization: The Case of South Korea  |
| Working<br>Paper | 99-05             | Sang-Woo Nam                                | Reform of the Financial Sector in East Asia   |
| Working<br>Paper | 99-06             | Hun-Joo Park                                | Dirigiste Modernization, Coalition Politics, and Financial Policy Towards Small<br>Business: Korea, Japan, and Taiwan Compared        |
| Working<br>Paper | 99-07             | Kong-Kyun Ro                                | Mother's Education and Child's Health: Economic Anlaysis of Korean Data   |
| Working<br>Paper | 99-08             | Euysung Kim                                 | Trade Liberalization and Productivity Growth in Korean Manufacturing Industries: Price Protection, Market Power, and Scale Efficiency |
| Working<br>Paper | 99-09             | Gill-Chin Lim                               | Global Political-Economic System and Financial Crisis: Korea, Brazil and the IMF  |
| Working<br>Paper | 99-10<br>(C99-01) | Seung-Joo Lee                               | LG Household & Health Care: Building a High-Performing Organization   |
| Working<br>Paper | 00-01             | Sangmoon Hahm<br>Kyung-Soo Kim<br>Ho-Mou Wu | Gains from Currency Convertibility: A Case of Incomplete Markets  |
| Working<br>Paper | 00-02             | Jong-Il You                                 | The Bretton Woods Institutions: Evolution, Reform and Change  |
| Working<br>Paper | 00-03             | Dukgeun Ahn                                 | Linkages between International Financial and Trade Institutions: IMF, World Bank and WTO  |
| Working<br>Paper | 00-04             | Woochan Kim                                 | Does Capital Account Liberalization Discipline Budget Deficit?  |
| Working<br>Paper | 00-05             | Sunwoong Kim<br>Shale Horowitz              | Public Interest "blackballing" in South Korea's Elections: One-Trick Pony, or Wave of the Future?                                     |
| Working<br>Paper | 00-06             | Woochan Kim                                 | Do Foreign Investors Perform Better than Locals? Information Asymmetry versus Investor Sophistication                                 |
| Working<br>Paper | 00-07             | Gill-Chin Lim<br>Joon Han                   | North-South Cooperation for Food Supply: Demographic Analysis and Policy Directions   |
| Working<br>Paper | 00-08<br>(C00-01) | Seung-Joo Lee                               | Strategic Newspaper Management: Case Study of Maeil Business  |
| Working<br>Paper | 01-01             | Seung-Joo Lee                               | Nokia: Strategic Transformation and Growth  |
| Working<br>Paper | 01-02             | Woochan Kim<br>Shang-Jin Wei                | Offshore Investment Funds:  Monsters in Emerging Markets?   |
| Working<br>Paper | 01-03             | Dukgeun Ahn                                 | Comparative Analysis of the SPS and the TBT Agreements  |
| Working<br>Paper | 01-04             | Sunwoong Kim<br>Ju-Ho Lee                   | Demand for Education and Developmental State: Private Tutoring in South Korea   |
| Working<br>Paper | 01-05             | Ju-Ho Lee<br>Young-Kyu Moh                  | Lessons from Korea  |
| Working<br>Paper | 01-06             | Woochan Kim<br>Yangho Byeon                 | Restructuring Korean Bank's Short-Term Debts in 1998 - Detailed Accounts and Their Implications -                                     |
| Working<br>Paper | 01-07             | Yoon-Ha YOO                                 | Private Tutoring as Rent Seeking Activity Under Tuition Control   |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author   | Title   |
|------------------|----------|--|---|
| Working<br>Paper | 01-08    | Kong-Kyun Ro   | 경제활동인구 변동의 요인분석: 선진국과의 비교분석   |
| Working<br>Paper | 02-01    | Sangmoon Hahm  | Restructuring of the Public Enterprise after the Crisis : The Case of Deposit Insurance Fund                              |
| Working<br>Paper | 02-02    | Kyong-Dong KIM   | The Culture of Industrial Relations in Korea : An alternative Sociological Approach                                       |
| Working<br>Paper | 02-03    | Dukgeun Ahn  | Korean Experience of the Dispute Settlement in the world Trading System   |
| Working<br>Paper | 02-04    | BERNARD S. BLACK<br>Hasung Jang<br>Woochan Kim           | Does Corporate Governance Matter? (Evidence from the Korean Market)   |
| Working<br>Paper | 02-05    | Sunwoong Kim<br>Ju-Ho Lee                                | Secondary School Equalization Policies in South Korea   |
| Working<br>Paper | 02-06    | Yoon-Ha YOO  | Penalty for Mismatch Between Ability and Quality, and School Choice   |
| Working<br>Paper | 02-07    | Dukgeun Ahn<br>Han-Young Lie                             | Legal Issues of Privatization in Government Procurement Agreements: Experience of Korea from Bilateral and WTO Agreements |
| Working<br>Paper | 02-08    | David J. Behling Kyong<br>Shik Eom                       | U.S. Mortgage Markets and Institutions and Their Relevance for Korea  |
| Working<br>Paper | 03-01    | Sang-Moon Hahm   | Transmission of Stock Returns and Volatility: the Case of Korea   |
| Working<br>Paper | 03-02    | Yoon Ha Yoo  | Does Evidentiary Uncertainty Induce Excessive Injurer Care?   |
| Working<br>Paper | 03-03    | Yoon Ha Yoo  | Competition to Enter a Better School and Private Tutoring   |
| Working<br>Paper | 03-04    | Sunwoong Kim<br>Ju-Ho Lee                                | Hierarchy and Market Competition in South Korea's Higher Education Sector   |
| Working<br>Paper | 03-05    | Chul Chung   | Factor Content of Trade: Nonhomothetic Preferences and "Missing Trade"  |
| Working<br>Paper | 03-06    | Hun Joo Park   | RECASTING KOREAN <i>DIRIGISME</i>   |
| Working<br>Paper | 03-07    | Ju-Ho Lee  | Mixing <i>versus</i> Sorting in Schooling:  Evidence from the Equalization Policy in South Korea                          |
| Working<br>Paper | 03-08    | Naohito Abe  | Managerial Incentive Mechanisms and Turnover of Company Presidents and Directors in Japan                                 |
| Working<br>Paper | 03-09    | Naohito Abe<br>Noel Gaston<br>Katsuyuki Kubo             | EXECUTIVE PAY IN JAPAN: THE ROLE OF BANK-APPOINTED MONITORS AND THE MAIN BANK RELATIONSHIP                                |
| Working<br>Paper | 03-10    | Chai-On Lee  | Foreign Exchange Rates Determination in the light of Marx's Labor-Value Theory  |
| Working<br>Paper | 03-11    | Taejong Kim  | Political Economy and Population Growth in Early Modern Japan   |
| Working<br>Paper | 03-12    | Il-Horn Hann<br>Kai-Lung Hui<br>Tom S. Lee<br>I.P.L. Png | Direct Marketing: Privacy and Competition   |
| Working<br>Paper | 03-13    | Marcus Noland  | RELIGION, CULTURE, AND ECONOMIC PERFORMANCE   |
| Working<br>Paper | 04-01    | Takao Kato<br>Woochan Kim<br>Ju Ho Lee                   | EXECUTIVE COMPENSATION AND FIRM PERFORMANCE IN KOREA  |
| Working<br>Paper | 04-02    | Kyoung-Dong Kim  | Korean Modernization Revisited: An Alternative View from the Other Side of History  |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author   | Title   |
|------------------|----------|--|---|
| Working<br>Paper | 04-03    | Lee Seok Hwang                                 | Ultimate Ownership, Income Management, and Legal and Extra-Legal Institutions                                     |
| Working<br>Paper | 04-04    | Dongsoo Kang                                   | Key Success Factors in the Revitalization of Distressed Firms : A Case of the Korean Corporate Workouts           |
| Working<br>Paper | 04-05    | Il Chong Nam<br>Woochan Kim                    | Corporate Governance of Newly Privatized Firms:  The Remaining Issues in Korea                                    |
| Working<br>Paper | 04-06    | Hee Soo Chung<br>Jeong Ho Kim<br>Hyuk Il Kwon  | Housing Speculation and Housing Price Bubble in Korea   |
| Working<br>Paper | 04-07    | Yoon-Ha Yoo                                    | Uncertainty and Negligence Rules  |
| Working<br>Paper | 04-08    | Young Ki Lee                                   | Pension and Retirement Fund Management  |
| Working<br>Paper | 04-09    | Wooheon Rhee<br>Tack Yun                       | Implications of Quasi-Geometric Discountingon the Observable Sharp e Ratio  |
| Working<br>Paper | 04-10    | Seung-Joo Lee                                  | Growth Strategy: A Conceptual Framework   |
| Working<br>Paper | 04-11    | Boon-Young Lee<br>Seung-Joo Lee                | Case Study of Samsung's Mobile Phone Business   |
| Working<br>Paper | 04-12    | Sung Yeung Kwack<br>Young Sun Lee              | What Determines Saving Rate in Korea?: the Role of Demography   |
| Working<br>Paper | 04-13    | Ki-Eun Rhee                                    | Collusion in Repeated Auctions with Externalities   |
| Working<br>Paper | 04-14    | Jaeun Shin<br>Sangho Moon                      | IMPACT OF DUAL ELIGIBILITY ON HEALTHCARE USE BY MEDICARE BENEFICIARIES  |
| Working<br>Paper | 04-15    | Hun Joo Park<br>Yeun-Sook Park                 | Kiding into the Sunset: The Political Economy of Bicycles as a Deciming industry in Korea                         |
| Working<br>Paper | 04-16    | Woochan Kim<br>Hasung Jang<br>Bernard S. Black | Predicting Firm's Corporate Governance Choices: Evidence from Korea   |
| Working<br>Paper | 04-17    | Tae Hee Choi                                   | Characteristics of Firms that Persistently Meet or Beat Analysts' Forecasts                                       |
| Working<br>Paper | 04-18    | Taejong Kim<br>Yoichi Okita                    | Is There a Premium for Elite College Education: Evidence from a Natural Experiment in Japan                       |
| Working<br>Paper | 04-19    | Leonard K. Cheng<br>Jae Nahm                   | Product Boundary, Vertical Competition, and the Double Mark-up Problem  |
| Working<br>Paper | 04-20    | Woochan Kim<br>Young-Jae Lim<br>Taeyoon Sung   | What Determines the Ownership Structure of Business Conglomerates? : On the Cash Flow Rights of Korea's Chaebol : |
| Working<br>Paper | 04-21    | Taejong Kim                                    | Shadow Education: School Quality and Demand for Private Tutoring in Korea   |
| Working<br>Paper | 04-22    | Ki-Eun Rhee<br>Raphael Thomadsen               | Costly Collusion in Differentiated Industries   |
| Working<br>Paper | 04-23    | Jaeun Shin<br>Sangho Moon                      | HMO plans, Self-selection, and Utilization of Health Care Services  |
| Working<br>Paper | 04-24    | Yoon-Ha Yoo                                    | Risk Aversion and Incentive to Abide By Legal Rules   |
| Working<br>Paper | 04-25    | Ji Hong Kim                                    | Speculative Attack and Korean Exchange Rate Regime  |
| Working<br>Paper | 05-01    | Woochan Kim<br>Taeyoon Sung                    | What Makes Firms Manage FX Risk?: Evidence from an Emerging Market  |
| Working<br>Paper | 05-02    | Janghyuk Lee<br>Laoucine Kerbache              | Internet Media Planning: An Optimization Model  |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author   | Title   |
|------------------|----------|--|---|
| Working<br>Paper | 05-03    | Kun-Ho Lee   | Risk in the Credit Card Industry When Consumer Types are Not Observable   |
| Working<br>Paper | 05-04    | Kyong-Dong KIM   | Why Korea Is So Prone To Conflict: An Alternative Sociological Analysis   |
| Working<br>Paper | 05-05    | Dukgeun AHN  | Why Should Non-actionable Subsidy Be Non-actionable?  |
| Working<br>Paper | 05-06    | Seung-Joo LEE  | Case Study of L'Oréal: Innovation and Growth Strategy   |
| Working<br>Paper | 05-07    | Seung-Joo LEE  | Case Study of BMW: The Ultimate Driving Machine   |
| Working<br>Paper | 05-08    | Taejong KIM  | Do School Ties Matter? Evidence from the Promotion of Public Prosecutors in Korea   |
| Working<br>Paper | 05-09    | Hun Joo PARK   | Paradigms and Fallacies: Rethinking Northeast Asian Security  |
| Working<br>Paper | 05-10    | WOOCHAN KIM<br>TAEYOON SUNG                                      | What Makes Group-Affiliated Firms Go Public?  |
| Working<br>Paper | 05-11    | BERNARD S. BLACK<br>WOOCHAN KIM<br>HASUNG JANG<br>KYUNG-SUH PARK | Does Corporate Governance Predict Firms' Market Values? Time Series Evidence from Korea   |
| Working<br>Paper | 05-12    | Kun-Ho Lee   | Estimating Probability of Default For the Foundation IRB Approach In Countries That Had Experienced Extreme Credit Crises                                 |
| Working<br>Paper | 05-13    | Ji-Hong KIM  | Optimal Policy Response To Speculative Attack   |
| Working<br>Paper | 05-14    | Kwon Jung<br>Boon Young Lee                                      | Coupon Redemption Behaviors among Korean Consumers: Effects of Distribution Method, Face Value, and Benefits on Coupon Redemption Rates in Service Sector |
| Working<br>Paper | 06-01    | Kee-Hong Bae<br>Seung-Bo Kim<br>Woochan Kim                      | Family Control and Expropriation of Not-for-Profit Organizations:  Evidence from Korean Private Universities  |
| Working<br>Paper | 06-02    | Jaeun Shin   | How Good is Korean Health Care? An International Comparison of Health Care Systems  |
| Working<br>Paper | 06-03    | Tae Hee Choi   | Timeliness of Asset Write-offs  |
| Working<br>Paper | 06-04    | Jin PARK   | Conflict Resolution Case Study: The National Education Information System (NEIS)  |
| Working<br>Paper | 06-05    | YuSang CHANG   | DYNAMIC COMPETITIVE PARADIGM OF MANAGING MOVING TARGETS;<br>IMPLICATIONS FOR KOREAN INDUSTY   |
| Working<br>Paper | 06-06    | Jin PARK   | A Tale of Two Government Reforms in Korea   |
| Working<br>Paper | 06-07    | Ilho YOO   | Fiscal Balance Forecast of Cambodia 2007-2011   |
| Working<br>Paper | 06-08    | Ilho YOO   | PAYG pension in a small open economy  |
| Working<br>Paper | 06-09    | Kwon JUNG<br>Clement LIM   | IMPULSE BUYING BEHAVIORS ON THE INTERNET  |
| Working<br>Paper | 06-10    | Joong H. HAN   | Liquidation Value and Debt Availability: An Empirical Investigation   |
| Working<br>Paper | 06-11    | Brandon Julio, Woojin<br>Kim<br>Michael S. Weisbach              | Uses of Funds and the Sources of Financing:<br>Corporate Investment and Debt Contract Design  |
| Working<br>Paper | 06-12    | Hun Joo Park   | Toward People-centered Development: A Reflection on the Korean Experience   |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author                                       | Title   |
|------------------|----------|--|---|
| Working<br>Paper | 06-13    | Hun Joo Park                                 | The Perspective of Small Business in South Korea  |
| Working<br>Paper | 06-14    | Younguck KANG                                | Collective Experience and Civil Society in Governance   |
| Working<br>Paper | 06-15    | Dong-Young KIM                               | The Roles of Government Officials as Policy Entrepreneurs in Consensus Building Process   |
| Working<br>Paper | 06-16    | Ji Hong KIM                                  | Military Service : draft or recruit   |
| Working<br>Paper | 06-17    | Ji Hong KIM                                  | Korea-US FTA  |
| Working<br>Paper | 06-18    | Ki-Eun RHEE                                  | Reevaluating Merger Guidelines for the New Economy  |
| Working<br>Paper | 06-19    | Taejong KIM<br>Ji-Hong KIM<br>Insook LEE     | Economic Assimilation of North Korean Refugees in South Korea: Survey Evidence  |
| Working<br>Paper | 06-20    | Seong Ho CHO                                 | ON THE STOCK RETURN METHOD TO DETERMINING INDUSTRY SUBSTRUCTURE: AIRLINE, BANKING, AND OIL INDUSTRIES   |
| Working<br>Paper | 06-21    | Seong Ho CHO                                 | DETECTING INDUSTRY SUBSTRUCTURE: - Case of Banking, Steel and Pharmaceutical Industries-  |
| Working<br>Paper | 06-22    | Tae Hee Choi                                 | Ethical Commitment, Corporate Financial Factors: A Survey Study of Korean Companies   |
| Working<br>Paper | 06-23    | Tae Hee Choi                                 | Aggregation, Uncertainty, and Discriminant Analysis   |
| Working<br>Paper | 07-01    | Jin PARK<br>Seung-Ho JUNG                    | Ten Years of Economic Knowledge Cooperation with North Korea: Trends and Strategies   |
| Working<br>Paper | 07-02    | BERNARD S. BLACK<br>WOOCHAN KIM              | The Effect of Board Structure on Firm Value in an Emerging Market: IV, DiD, and Time Series Evidence from Korea   |
| Working<br>Paper | 07-03    | Jong Bum KIM                                 | FTA Trade in Goods Agreements: 'Entrenching' the benefits of reciprocal tariff concessions  |
| Working<br>Paper | 07-04    | Ki-Eun Rhee                                  | Price Effects of Entries  |
| Working<br>Paper | 07-05    | Tae H. Choi                                  | Economic Crises and the Evolution of Business Ethics in Japan and Korea   |
| Working<br>Paper | 07-06    | Kwon JUNG<br>Leslie TEY                      | Extending the Fit Hypothesis in Brand Extensions:  Effects of Situational Involvement, Consumer Innovativeness and Extension  Incongruity on Evaluation of Brand Extensions |
| Working<br>Paper | 07-07    | Younguck KANG                                | Identifying the Potential Influences on Income Inequality Changes in Korea – Income Factor Source Analysis  |
| Working<br>Paper | 07-08    | WOOCHAN KIM<br>TAEYOON SUNG<br>SHANG-JIN WEI | Home-country Ownership Structure of Foreign Institutional Investors and Control-<br>Ownership Disparity in Emerging Markets   |
| Working<br>Paper | 07-09    | Ilho YOO                                     | The Marginal Effective Tax Rates in Korea for 45 Years: 1960-2004   |
| Working<br>Paper | 07-10    | Jin PARK                                     | Crisis Management for Emergency in North Korea  |
| Working<br>Paper | 07-11    | Ji Hong KIM                                  | Three Cases of Foreign Investment in Korean Banks   |
| Working<br>Paper | 07-12    | Jong Bum Kim                                 | Territoriality Principle under Preferential Rules of Origin   |
| Working<br>Paper | 07-13    | Seong Ho CHO                                 | THE EFFECT OF TARGET OWNERSHIP STRUCTURE ON THE TAKEOVER PREMIUM IN OWNER-MANAGER DOMINANT ACQUISITIONS: EVIDENCE FROM KOREAN CASES   |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author                                    | Title   |
|------------------|----------|---|---|
| Working<br>Paper | 07-14    | Seong Ho CHO<br>Bill McKelvey             | Determining Industry Substructure: A Stock Return Approach  |
| Working<br>Paper | 07-15    | Dong-Young KIM                            | Enhancing BATNA Analysis in Korean Public Disputes  |
| Working<br>Paper | 07-16    | Dong-Young KIM                            | The Use of Integrated Assessment to Support Multi-Stakeholder negotiations for Complex Environmental Decision-Making  |
| Working<br>Paper | 07-17    | Yuri Mansury                              | Measuring the Impact of a Catastrophic Event: Integrating Geographic Information System with Social Accounting Matrix |
| Working<br>Paper | 07-18    | Yuri Mansury                              | Promoting Inter-Regional Cooperation between Israel and Palestine: A Structural Path Analysis Approach                |
| Working<br>Paper | 07-19    | Ilho YOO                                  | Public Finance in Korea since Economic Crisis   |
| Working<br>Paper | 07-20    | Li GAN<br>Jaeun SHIN<br>Qi LI             | Initial Wage, Human Capital and Post Wage Differentials   |
| Working<br>Paper | 07-21    | Jin PARK                                  | Public Entity Reform during the Roh Administration: Analysis through Best Practices                                   |
| Working<br>Paper | 07-22    | Tae Hee Choi                              | The Equity Premium Puzzle: An Empirical Investigation of Korean Stock Market  |
| Working<br>Paper | 07-23    | Joong H. HAN                              | The Dynamic Structure of CEO Compensation: An Empirical Study   |
| Working<br>Paper | 07-24    | Ki-Eun RHEE                               | Endogenous Switching Costs in the Face of Poaching  |
| Working<br>Paper | 08-01    | Sun LEE<br>Kwon JUNG                      | Effects of Price Comparison Site on Price and Value Perceptions in Online Purchase                                    |
| Working<br>Paper | 08-02    | Ilho YOO                                  | Is Korea Moving Toward the Welfare State?: An IECI Approach   |
| Working<br>Paper | 08-03    | Ilho YOO<br>Inhyouk KOO                   | DO CHILDREN SUPPORT THEIR PARENTS' APPLICATION FOR THE REVERSE MORTGAGE?: A KOREAN CASE                               |
| Working<br>Paper | 08-04    | Seong-Ho CHO                              | Raising Seoul's Global Competitiveness: Developing Key Performance Indicators   |
| Working<br>Paper | 08-05    | Jin PARK                                  | A Critical Review for Best Practices of Public Entities in Korea  |
| Working<br>Paper | 08-06    | Seong-Ho CHO                              | How to Value a Private Company? -Case of Miele Korea-   |
| Working<br>Paper | 08-07    | Yoon Ha Yoo                               | The East Asian Miracle: Export-led or Investment-led?   |
| Working<br>Paper | 08-08    | Man Cho                                   | Subprime Mortgage Market: Rise, Fall, and Lessons for Korea   |
| Working<br>Paper | 08-09    | Woochan KIM<br>Woojin KIM<br>Kap-sok KWON | Value of shareholder activism: evidence from the switchers  |
| Working<br>Paper | 08-10    | Kun-Ho Lee                                | Risk Management in Korean Financial Institutions: Ten Years after the Financial Crisis                                |
| Working<br>Paper | 08-11    | Jong Bum KIM                              | Korea's Institutional Framework for FTA Negotiations and Administration: Tariffs and Rules of Origin                  |
| Working<br>Paper | 08-12    | Yu Sang CHANG                             | Strategy, Structure, and Channel of Industrial Service Leaders: A Flow Chart Analysis of the Expanded Value Chain     |
| Working<br>Paper | 08-13    | Younguck KANG                             | Sensitivity Analysis of Equivalency Scale in Income Inequality Studies  |
| Working<br>Paper | 08-14    | Younguck KANG                             | Case Study: Adaptive Implementation of the Five-Year Economic Development Plans                                       |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author   | Title   |
|------------------|----------|--|---|
| Working<br>Paper | 08-15    | Joong H. HAN   | Is Lending by Banks and Non-banks Different? Evidence from Small Business Financing   |
| Working<br>Paper | 08-16    | Joong H. HAN   | Checking Accounts and Bank Lending  |
| Working<br>Paper | 08-17    | Seongwuk MOON  | How Does the Management of Research Impact the Disclosure of Knowledge?  Evidence from Scientific Publications and Patenting Behavior |
| Working<br>Paper | 08-18    | Jungho YOO   | How Korea's Rapid Export Expansion Began in the 1960s: The Role of Foreign Exchange Rate  |
| Working<br>Paper | 08-19    | BERNARD S. BLACK<br>WOOCHAN KIM<br>HASUNG JANG<br>KYUNG SUH PARK | How Corporate Governance Affects Firm Value: Evidence on Channels from Korea  |
| Working<br>Paper | 08-20    | Tae Hee CHOI   | Meeting or Beating Analysts' Forecasts: Empirical Evidence of Firms' Characteristics, Persistence Patterns and Post-scandal Changes   |
| Working<br>Paper | 08-21    | Jaeun SHIN   | Understanding the Role of Private Health Insurance in the Universal Coverage System:  Macro and Micro Evidence                        |
| Working<br>Paper | 08-22    | Jin PARK   | Indonesian Bureaucracy Reform: Lessons from Korea   |
| Working<br>Paper | 08-23    | Joon-Kyung KIM   | Recent Changes in Korean Households' Indebtedness and Debt Service Capacity   |
| Working<br>Paper | 08-24    | Yuri Mansury   | What Do We Know about the Geographic Pattern of Growth across Cities and Regions in South Korea?                                      |
| Working<br>Paper | 08-25    | Yuri Mansury &<br>Jae Kyun Shin                                  | Why Do Megacities Coexist with Small Towns? Historical Dependence in the Evolution of Urban Systems                                   |
| Working<br>Paper | 08-26    | Jinsoo LEE   | When Business Groups Employ Analysts: Are They Biased?  |
| Working<br>Paper | 08-27    | Cheol S. EUN<br>Jinsoo LEE                                       | Mean-Variance Convergence Around the World  |
| Working<br>Paper | 08-28    | Seongwuk MOON  | How Does Job Design Affect Productivity and Earnings? Implications of the Organization of Production                                  |
| Working<br>Paper | 08-29    | Jaeun SHIN   | Smoking, Time Preference and Educational Outcomes   |
| Working<br>Paper | 08-30    | Dong Young KIM   | Reap the Benefits of the Latecomer: From the story of a political, cultural, and social movement of ADR in US                         |
| Working<br>Paper | 08-31    | Ji Hong KIM  | Economic Crisis Management in Korea: 1998 & 2008  |
| Working<br>Paper | 08-32    | Dong-Young KIM   | Civility or Creativity?: Application of Dispute Systems Design (DSD) to Korean Public Controversies on Waste Incinerators             |
| Working<br>Paper | 08-33    | Ki-Eun RHEE  | Welfare Effects of Behavior-Based Price Discrimination  |
| Working<br>Paper | 08-34    | Ji Hong KIM  | State Owned Enterprise Reform   |
| Working<br>Paper | 09-01    | Yu Sang CHANG  | Making Strategic Short-term Cost Estimation by Annualized Experience Curve  |
| Working<br>Paper | 09-02    | Dong Young KIM   | When Conflict Management is Institutionalized: A Review of the Executive Order 19886 and government practice                          |
| Working<br>Paper | 09-03    | Man Cho  | Managing Mortgage Credit Risk: What went wrong with the subprime and Alt-A markets?   |
| Working<br>Paper | 09-04    | Tae H. Choi  | Business Ethics, Cost of Capital, and Valuation   |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author  | Title  |
|------------------|----------|---|--|
| Working<br>Paper | 09-05    | Woochan KIM<br>Woojin KIM<br>Hyung-Seok KIM   | What makes firms issue death spirals? A control enhancing story  |
| Working<br>Paper | 09-06    | Yu Sang CHANG<br>Seung Jin BAEK               | Limit to Improvement: Myth or Reality? Empirical Analysis of Historical Improvement on Three Technologies Influential in the Evolution of Civilization |
| Working<br>Paper | 09-07    | Ji Hong KIM                                   | G20: Global Imbalance and Financial Crisis   |
| Working<br>Paper | 09-08    | Ji Hong KIM                                   | National Competitiveness in the Globalized Era   |
| Working<br>Paper | 09-09    | Hao Jiang , Woochan<br>Kim , Ramesh K. S. Rao | Contract Heterogeneity, Operating Shortfalls, and Corporate Cash Holdings  |
| Working<br>Paper | 09-10    | Man CHO                                       | Home Price Cycles: A Tale of Two Countries   |
| Working<br>Paper | 09-11    | Dongcul CHO                                   | The Republic of Korea's Economy in the Swirl of Global Crisis  |
| Working<br>Paper | 09-12    | Dongcul CHO                                   | House Prices in ASEAN+3: Recent Trends and Inter-Dependence  |
| Working<br>Paper | 09-13    | Seung-Joo LEE<br>Eun-Hyung LEE                | Case Study of POSCO - Analysis of its Growth Strategy and Key Success Factors  |
| Working<br>Paper | 09-14    | Woochan KIM<br>Taeyoon SUNG<br>Shang-Jin WEI  | The Value of Foreign Blockholder Activism: Which Home Country Governance Characteristics Matter?   |
| Working<br>Paper | 09-15    | Joon-Kyung KIM                                | Post-Crisis Corporate Reform and Internal Capital Markets in Chaebols  |
| Working<br>Paper | 09-16    | Jin PARK                                      | Lessons from SOE Management and Privatization in Korea   |
| Working<br>Paper | 09-17    | Tae Hee CHOI                                  | Implied Cost of Equity Capital, Firm Valuation, and Firm Characteristics   |
| Working<br>Paper | 09-18    | Kwon JUNG                                     | Are Entrepreneurs and Managers Different?  Values and Ethical Perceptions of Entrepreneurs and Managers  |
| Working<br>Paper | 09-19    | Seongwuk MOON                                 | When Does a Firm Seek External Knowledge? Limitations of External Knowledge  |
| Working<br>Paper | 09-20    | Seongwuk MOON                                 | Earnings Inequality within a Firm: Evidence from a Korean Insurance Company  |
| Working<br>Paper | 09-21    | Jaeun SHIN                                    | Health Care Reforms in South Korea: What Consequences in Financing?  |
| Working<br>Paper | 09-22    | Younguck KANG                                 | Demand Analysis of Public Education: A Quest for New Public Education System for Next Generation   |
| Working<br>Paper | 09-23    | Seong-Ho CHO<br>Jinsoo LEE                    | Valuation and Underpricing of IPOs in Korea  |
| Working<br>Paper | 09-24    | Seong-Ho CHO                                  | Kumho Asiana's LBO Takeover on Korea Express   |
| Working<br>Paper | 10-01    | Yun-Yeong KIM<br>Jinsoo LEE                   | Identification of Momentum and Disposition Effects Through Asset Return Volatility   |
| Working<br>Paper | 10-02    | Kwon JUNG                                     | Four Faces of Silver Consumers: A Typology, Their Aspirations, and Life Satisfaction of Older Korean Consumers   |
| Working<br>Paper | 10-03    | Jinsoo LEE<br>Seongwuk MOON                   | Corporate Governance and International Portfolio Investment in Equities  |
| Working<br>Paper | 10-04    | Jinsoo LEE                                    | Global Convergence in Tobin's Q Ratios   |
| Working<br>Paper | 10-05    | Seongwuk MOON                                 | Competition, Capability Buildup and Innovation: The Role of Exogenous Intra-firm Revenue Sharing   |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author  | Title   |
|------------------|----------|---|---|
| Working<br>Paper | 10-06    | Kwon JUNG   | Credit Card Usage Behaviors among Elderly Korean Consumers  |
| Working<br>Paper | 10-07    | Yu-Sang CHANG<br>Jinsoo LEE                       | Forecasting Road Fatalities by the Use of Kinked Experience Curve   |
| Working<br>Paper | 10-08    | Man CHO   | Securitization and Asset Price Cycle: Causality and Post-Crisis Policy Reform   |
| Working<br>Paper | 10-09    | Man CHO<br>Insik MIN                              | Asset Market Correlation and Stress Testing: Cases for Housing and Stock Markets  |
| Working<br>Paper | 10-10    | Yu-Sang CHANG<br>Jinsoo LEE                       | Is Forecasting Future Suicide Rates Possible? - Application of the Experience Curve -   |
| Working<br>Paper | 10-11    | Seongwuk MOON                                     | What Determines the Openness of Korean Manufacturing Firms to External Knowledge?   |
| Working<br>Paper | 10-12    | Joong Ho HAN<br>Kwangwoo PARK<br>George PENNACCHI | Corporate Taxes and Securitization  |
| Working<br>Paper | 10-13    | Younguck KANG                                     | Housing Policy of Korea: Old Paradigm, New Approach   |
| Working<br>Paper | 10-14    | Il Chong NAM                                      | A Proposal to Reform the Korean CBP Market  |
| Working<br>Paper | 10-15    | Younguck KANG                                     | Balanced Regional Growth Strategy based on the Economies of Agglomeration: the Other Side of Story                                |
| Working<br>Paper | 10-16    | Joong Ho HAN                                      | CEO Equity versus Inside Debt Holdings and Private Debt Contracting   |
| Working<br>Paper | 11-01    | Yeon-Koo CHE<br>Rajiv SETHI                       | Economic Consequences of Speculative Side Bets: The Case of Naked Credit Default Swaps  |
| Working<br>Paper | 11-02    | Tae Hee CHOI<br>Martina SIPKOVA                   | Business Ethics in the Czech Republic   |
| Working<br>Paper | 11-03    | Sunwoo HWANG<br>Woochan KIM                       | Anti-Takeover Charter Amendments and Managerial Entrenchment: Evidence from Korea   |
| Working<br>Paper | 11-04    | Yu Sang CHANG<br>Jinsoo LEE<br>Yun Seok JUNG      | The Speed and Impact of a New Technology Diffusion in Organ Transplantation: A  Case Study Approach                               |
| Working<br>Paper | 11-05    | Jin PARK<br>Jiwon LEE                             | The Direction of Inter-Korean Cooperation Fund Based on ODA Standard  |
| Working<br>Paper | 11-06    | Woochan KIM                                       | Korea Investment Corporation: Its Origin and Evolution  |
| Working<br>Paper | 11-07    | Seung-Joo LEE                                     | Dynamic Capabilities at Samsung Electronics: Analysis of its Growth Strategy in Semiconductors                                    |
| Working<br>Paper | 11-08    | Joong Ho HAN                                      | Deposit Insurance and Industrial Volatility   |
| Working<br>Paper | 11-09    | Dong-Young KIM                                    | Transformation from Conflict to Collaboration through Multistakeholder Process: Shihwa Sustainable Development Committee in Korea |
| Working<br>Paper | 11-10    | Seongwuk MOON                                     | How will Openness to External Knowledge Impact Service Innovation? Evidence from Korean Service Sector                            |
| Working<br>Paper | 11-11    | Jin PARK  | Korea's Technical Assistance for Better Governance: A Case Study in Indonesia   |
| Working<br>Paper | 12-01    | Seongwuk MOON                                     | How Did Korea Catch Up with Developed Countries in DRAM Industry? The Role of Public Sector in Demand Creation: PART 1            |
| Working<br>Paper | 12-02    | Yong S. Lee<br>Young U. Kang<br>Hun J Park        | The Workplace Ethics of Public Servants in Developing Countries   |
| Working<br>Paper | 12-03    | Ji-Hong KIM                                       | Deposit Insurance System in Korea and Reform  |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author                                       | Title   |
|------------------|----------|--|---|
| Working<br>Paper | 12-04    | Yu Sang Chang<br>Jinsoo Lee<br>Yun Seok Jung | Technology Improvement Rates of Knowledge Industries following Moore's Law? -An Empirical Study of Microprocessor, Mobile Cellular, and Genome Sequencing Technologies- |
| Working<br>Paper | 12-05    | Man Cho                                      | Contagious Real Estate Cycles: Causes, Consequences, and Policy Implications  |
| Working<br>Paper | 12-06    | Younguck KANG<br>Dhani Setvawan              | INTERGOVERNMENTAL TRANSFER AND THE FLYPAPER EFFECT  – Evidence from Municipalities/Regencies in Indonesia –   |
| Working<br>Paper | 12-07    | Younguck KANG                                | Civil Petitions and Appeals in Korea : Investigating Rhetoric and Institutional settings  |
| Working<br>Paper | 12-08    | Yu Sang Chang<br>Jinsoo Lee                  | Alternative Projection of the World Energy Consumption -in Comparison with the 2010 International Energy Outlook  |
| Working<br>Paper | 12-09    | Hyeok Jeong                                  | The Price of Experience   |
| Working<br>Paper | 12-10    | Hyeok Jeong                                  | Complementarity and Transition to Modern Economic Growth  |
| Working<br>Paper | 13-01    | Yu Sang CHANG<br>Jinsoo LEE<br>Hyuk Ju KWON  | When Will the Millennium Development Goal on<br>Infant Mortality Rate Be Realized?<br>- Projections for 21 OECD Countries through 2050-                                 |
| Working<br>Paper | 13-02    | Yoon-Ha Yoo                                  | Stronger Property Rights Enforcement Does Not Hurt Social Welfare -A Comment on Gonzalez' "Effective Property Rights, Conflict and Growth (JET, 2007)"-                 |
| Working<br>Paper | 13-03    | Yu Sang CHANG<br>Changyong CHOI              | Will the Stop TB Partnership Targets on TB Control be Realized on Schedule? - Projection of Future Incidence, Prevalence and Death Rates -                              |
| Working<br>Paper | 13-04    | Yu Sang CHANG<br>Changyong CHOI              | Can We Predict Long-Term Future Crime Rates?  – Projection of Crime Rates through 2030 for Individual States in the U.S. –  |
| Working<br>Paper | 13-05    | Chrysostomos Tabakis                         | Free-Trade Areas and Special Protection   |
| Working<br>Paper | 13-06    | Hyeok Jeong                                  | Dynamics of Firms and Trade in General Equilibrium  |
| Working<br>Paper | 13-07    | Hyeok Jeong                                  | Testing Solow's Implications on the Effective Development Policy  |
| Working<br>Paper | 13-08    | Jaeun SHIN                                   | Long-Term Care Insurance and Health Care Financing in South Korea   |
| Working<br>Paper | 13-09    | Ilchong Nam                                  | Investment Incentives for Nuclear Generators and Competition in the Electricity Market of Korea   |
| Working<br>Paper | 13-10    | Ilchong Nam                                  | Market Structure of the Nuclear Power Industry in Korea and Incentives of Major Firms   |
| Working<br>Paper | 13-11    | Ji Hong KIM                                  | Global Imbalances   |
| Working<br>Paper | 14-01    | Woochan KIM                                  | When Heirs Become Major Shareholders  |
| Working<br>Paper | 14-02    | Chrysostomos Tabakis                         | Antidumping Echoing   |
| Working<br>Paper | 14-03    | Ju Ho Lee                                    | Is Korea Number One in Human Capital Accumulation?: Education Bubble Formation and its Labor Market Evidence  |
| Working<br>Paper | 14-04    | Chrysostomos Tabakis                         | Regionalism and Conict: Peace Creation and Peace Diversion  |
| Working<br>Paper | 14-05    | Ju Ho Lee                                    | Making Education Reform Happen: Removal of Education Bubble through Education Diversification   |
| Working<br>Paper | 14-06    | Sung Joon Paik                               | Pre-employment VET Investment Strategy in Developing Countries - Based on the Experiences of Korea -  |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.

| Category         | Serial # | Author  | Title  |
|------------------|----------|---|--|
| Working<br>Paper | 14-07    | Ju Ho Lee<br>Josh Sung-Chang Ryoo<br>Sam-Ho Lee | From Multiple Choices to Performance Assessment:<br>Theory, Practice, and Strategy   |
| Working<br>Paper | 14-08    | Sung Joon Paik                                  | Changes in the effect of education on the earnings differentials between men and women in Korea (1990-2010)                                    |
| Working<br>Paper | 14-09    | Shun Wang                                       | Social Capital and Rotating Labor Associations: Evidence from China  |
| Working<br>Paper | 14-10    | Hun Joo Park                                    | Recasting the North Korean Problem:  Towards Critically Rethinking about the Perennial Crisis of the Amoral Family State and How to Resolve It |
| Working<br>Paper | 14-11    | Yooncheong Cho                                  | Justice, Dissatisfaction, and Public Confidence in the E-Governance)   |
| Working<br>Paper | 14-12    | Shun Wang                                       | The Long-Term Consequences of Family Class Origins in Urban China  |
| Working<br>Paper | 14-13    | Jisun Baek                                      | Effect of High-speed Train Introduction on Consumer Welfare  |
| Working<br>Paper | 14-14    | Jisun Baek                                      | Effect of High Speed Trains on Passenger Travel: Evidence from Korea   |

<sup>\*</sup> The above papers are available at KDI School Website <a href="http://www.kdischool.ac.kr/new/eng/faculty/working.jsp">http://www.kdischool.ac.kr/new/eng/faculty/working.jsp</a>. You may get additional copy of the documents by downloading it using the Acrobat Reader.