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Relationship between Economic Growth, Urban Concentration and Trade: Evidence from the Asia-Pacific

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Abstract:
There is a significant relationship between economic growth and the degree of urban concentration, as measured by primacy or the share of the largest city in an urban system. In accordance to urban economic theories, there is an inverse-U shape relationship between urban concentration –urban primacy- and economic growth. That is, as economy grows, urban concentration increases, approaches an optimal level and then declines. If distortion from the optimal level is happened, it can lead economic growth to reduce. Some countries have significantly excessive primacy and some have too little. Additionally, trade is one of the key factors that can affect urban concentration. In this study, urban primacy of some selected Asia- Pacific countries is computed and its effect on economic growth is tested using Solow-Swan growth model. It also looks at the determinants of primacy and policy instruments that might be effective in reducing excessive primacy. Results show that primacy has significant effect on economic growth. Moreover, as trade influences primacy, it can be thus considered as an effective policy instrument in controlling urban over-concentration.

Keywords: Urban Concentration, Economic Growth, Trade, Asia-Pacific.

JEL Classification: O47, R19, F43, O53

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1. Introduction

There is an extensive literature on the urban development process and its relationship with economic growth. Urban development has two key aspects: one is urban development and urbanization itself, which relates to the growth, both in number and size, of cities in an urban system. The other aspect of urban development is the form of urban development, that is, urban concentration. Urban concentration shows the degree to which urban resources are concentrated in one or two large cities, rather than being spread among many cities.

At any point in time, given a country's level of urbanization, resources may be spread too evenly across cities with insufficient concentration in certain cities to exploit economies of scale in production. Alternatively, resources may be over-concentrated in one or two excessively large cities, giving rise to commuting difficulties, congestion, and an increase in the cost of living, raising the cost of the production of goods and lowering the quality of urban service provision. There appears to be an optimal degree of urban concentration which can be achieved by trading-off the social costs and benefits of increasing urban concentration. Either over or under-concentration is very costly in terms of economic efficiency and national growth rates (Henderson, 2000).

Numerous studies have shown that urban concentration affects economic growth and efficiency and this is a non-linear effect. Indeed, a number of authors verify the pattern of first increasing and then decreasing urban concentration across countries as income rises (Alonso, 1980; Wheaton and Shishido, 1981; Junius, 1999; Henderson, 2000, 2002b; and Davis and Henderson, 2003). Based on Williamson's (1965) Hypothesis, the optimum degree of urban concentration is dynamic and increases in the first phase of economic development, after which it begins to decline as development continues.

The main question of this study is whether there is a significant relationship between economic growth and the degree of urban concentration, as a proxy for primacy. A number of Pacific, East Asian and West Asian countries have been selected as several examples. The paper proceeds as follows. In Section 2 urban concentration and ways of measuring it are described and then a model is specified. In Section 3 the estimation method adopted is outlined. In Section 4 the specified model is estimated for the period from 1980 to 2005 in a cross country panel context, the results are illustrated and the determinants of urban concentration in an economy are examined. Two models are considered as a panel data simultaneous-equations system. The degree of urban concentration is determined by the stage of development and the country's size, as well as by institutions and national processes. Finally, in Section 5, the results of the study are summarized and concluded.

2. Urban Concentration and Its Effects on Economic Growth

Urbanization and economic growth promote the development process. Economic development involves the transformation of a country from an agricultural-based economy to an industrial-service-based economy. As this occurs, and as economies of scale increase, production of manufactured goods and services become much more efficient through concentration in dense commercial-industrial districts in cities (Fujita and Ogawa, 1982; Helsley and Strange, 1990; Duranton and Puga, 2001; and Henderson, 1974, 2002b). Close spatial proximity, or high density, promotes information spill-over amongst producers, a more efficiently functioning labor market, and savings in the transport costs of parts and components exchange among producers and in the cost of sales to local residents (Henderson, 2000). At the same time, government policies supportive of urban industries make it attractive to invest in cities and encourage migration from rural to urban areas (Renaud, 1981). The cost-benefit interaction of agglomerating people and firms determines an optimal degree for urban concentration.

There is also a dynamic component to this discussion of optimal urban concentration. Hansen (1990) uses Williamson's hypothesis of development in an urban context, and argues that a high degree of urban concentration in the early stages of economic development is essential to efficiency. By concentrating industrialization, often in coastal cities, the economy conserves on "economic infrastructure"–physical infrastructure capital (transportation and telecommunications) and managerial resources. Such spatial concentration also enhances information spill-over at a time when the economy is "information deficient" and it may similarly enhance knowledge accumulation (Lucas, 1988; Black and Henderson, 1999; and Henderson, 2002b).

Henderson (2000) explains that in the development process, de-concentration eventually becomes efficient for two reasons.

The economy can afford to spread economic infrastructure and knowledge resources to the hinterland. Second, the cities of initial high concentration become high-cost, congested locations that are less efficient locations for producers and consumers. De-concentration occurs by manufacturing moving first from the core cities of large metropolitan areas to nearby satellite cities, and then into hinterland cities, where wage and land costs are much lower. Wheaton and Shishido (1981) find the pattern of first increasing and then decreasing urban concentration across countries as income rises. This result is consistent with findings of regional convergence in regions over time.

Such studies as Renuad (1981), Henderson (1988, 2000, and 2002b) and Ades and Glaeser (1995) have argued that political institutions in countries often encourage over-concentration. Because national governments choose to favor one (or more) cities, typically national capitals such as Seoul, Jakarta, Tehran, etc., over others, there is no level playing field across cities in many countries. Such favoritism can involve the allocation of local public services in the favored cities, where decision-makers live. The problem can be exacerbated if other cities do not have the power to determine their own public service levels, either because of a unitary national constitution or because local autonomy is weak. Migrants and firms flow to a favored city until it becomes so congested and costly to live in, such that these costs offset the advantages of the favoritism. Moreover, the excessive resources devoted to one or two favored cities detract from the quality of the life in the rest of the urban system.

A key question is how to measure urban concentration. Different studies have used different indices, summarized in Table 1. In this study we have used the urban primacy index – the largest city's share in national urban poulation, as a proxy for Hirschman-Herfindahl indices (see Henderson, 1999b, 2000 for more explanation about this index). The concept of this indicator relies on Zipf's Law (Gabaix, 1999).

Table 1: Indicators of urban concentration in empirical studies

Wheaton and Shishido (1981)	*The Hirschman-Herfindahl Index* $H = \sum_{i=1}^{n} \left(\frac{p_i}{p} \right)^2$ P_i is the population of city *i*, P is total urban population, and *n* is the number of cities.		
MacKellar and Vining (1985)	*The Index of Redistribution of Population* *(ΔPRC-ΔPT)* *ΔPRC* is the growth rate of population in the central region, and, *ΔPT* is the growth rate of the total population.		
Ades and Glaeser (1995)	*Absolute Primacy* Population of the biggest city in the urban system		
Henderson (2000, 2002b) Junius (1999)	*Relative Primacy* The proportion of the biggest city population to total urban population		
Gabiax (1999)	*Rank-Size Distribution* $R(n)=An^{-a}$ *n* is the population of a city, R(n) is the rank of that city, and a is a parameter. A is a constant.		
Moomaw and Shatter (1996)	Relative Primacy	*Concentration of metropolitans* The proportion of cities with more than 100000 residences in total population	*Rate of urbanization* The proportion of urban population in total population

***Source*: Van-Huffel (2005)**

3. The Model

Such studies as Ades and Glaeser (1995), Junius (1999), Henderson (2000, 2002b) and Davis and Henderson (2003), show that there is an inverse-u relationship between urban concentration and economic growth. This relationship is illustrated in Figure 1.

Now, as mentioned above, the question is how the effect of urban primacy on economic growth can be estimated. This is studied through the Solow-Swan growth model (1956), by Henderson (2000, 2002b). The Solow-Swan growth model focuses on a Cobb-Douglas production function in which output is related to

capital, labor and technological progress. In this model, the growth of output per worker is:

$$Lny_t - Lny_{t-1} = (1-\alpha)\left[LnA_t - LnA_{t-1}\right] + \alpha\left[Lnk_t - Lnk_{t-1}\right] \quad (1)$$

where y_t is output per worker at time t (in empirical studies, income per capita is considered as a proxy for it), k_t is capital per worker, and A_t is technological progress. In this model, growth can result from either technological progress or capital accumulation. Thus, the model implies that determining the sources of growth is an empirical issue. The empirically specified model for a country i over time, called the β-convergence model, is:

$$Lny_{i,t} - Lny_{i,t-1} = \alpha + (1 - e^{-\beta})Lny_{i,t-1} + X_{i,t}\gamma + \varepsilon_{i,t} \quad (2)$$

where Lny_t is log of income per capita at time t, and ε_t is an error term. β is the convergence coefficient and implies a long-run tendency towards the equalization of income per capita. Matrix X_t includes different variables affecting technological progress, including investment rate, fertility rate, government size, etc. (for further details see Barro and Sala-i-Martin, 1995; Barro, 1997).

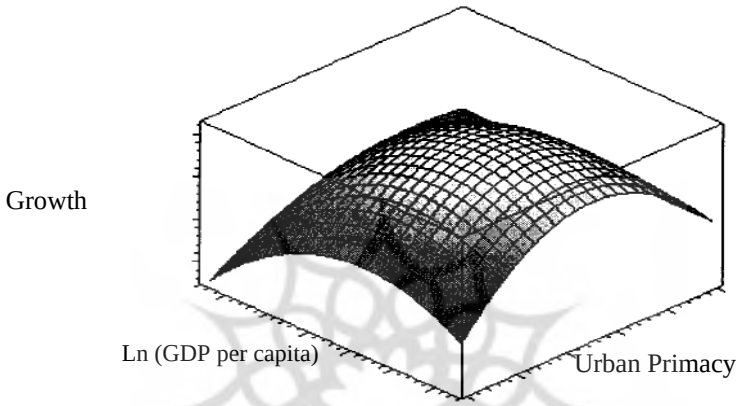

Figure 1: 3D relationship between growth, urban primacy and income per capita
Source: **Henderson (2000)**

To model the effect of urban concentration on economic growth, urban primacy is entered into the model as an explanatory variable. Since its effect on economic growth is non-linear and over- or under-concentration reduces growth, this variable is considered in a quadratic form, in accordance with which the optimal degree of urban concentration can be reached. In this way, if the specification form is as $(\delta_1 Primacy_{i,t} + \delta_4 Primacy_{i,t}^{2})$, the optimal degree of urban primacy will be $(\delta_1/-2\delta_4)$.

The literature suggests, however, that optimal primacy ought to vary with the development level as well, and also with national scale. To determine the effect of the development level we use the income per capita variable, as suggested by Williamson (1965). According to the Williamson hypothesis, high spatial concentration at the earliest stages of development is important, but as development proceeds de-concentration occurs (Henderson, 2002b). For national scale, we use urban population. Therefore, in addition to the variables mentioned above, the following components are added to Equation (2):

$$\ldots + Primacy_{i,t}(\delta_1 + \delta_2 Lny_{i,t} + \delta_3 Lny_{i,t}^{2} + \delta_7 LnUrban) + Primacy_{i,t}^{2}(\delta_1 + \delta_2 Lny_{i,t} + \delta_3 Lny_{i,t}^{2}) \quad (3)$$

4. The Estimation Method

The specified model is estimated for 23 selected Pacific and East-West Asian countries* between 1980 and 2005, in five-year intervals. Thus, we have a panel data set with 23 cross sections and 6 time periods. Any attempt at estimating the equation, which assumes the intercept is homogeneous for each country, can yield biased results. This will be examined through the F-Leamer test. One of the solutions to control for heterogeneity is the panel data procedure, which allows the intercepts of the growth equation to be specific to each country (Cheng and Wall,

* Sample countries are Australia, Bangladesh, China, Georgia, Hong Kong, India, Indonesia, Iran, Japan, Jordan, Korea, Kuwait, Malaysia, Nepal, New Zealand, Pakistan, Philippines, Saudi Arabia, Singapore, Syria, Thailand, Turkey, and United Arab Emirates.

1999).

The specified growth model using Panel Data is as follows:

$$Lny_{i,t} - Lny_{i,t-5} = \alpha_0 + \alpha_t + \alpha_i - (1-e^{-5\beta})Lny_{i,t-5} + X_{i,t}\gamma + u_{i,t} \quad (4)$$

where the definition of variables are as before. In accordance with empirical studies on growth models like Barro (1997), variables considered for inclusion in matrix X are: log of GDP per capita in *t-5* (Not clear) ($Lny_{i,t-5}$), government size (*Gov*), investment growth (*Ginv*), degree of openness as measured by the sum of exports and imports to GDP (Open), inflation rate (Inf), political rights as a democracy index (*Pr*), and log of the fertility rate (*LnFr*).

Data for all of the variables, except for *Pr*, are from the World Bank's World Development Indicators (WDI, 2007). Data for *Pr* was obtained from Freedom House*. In accordance with the Freedom House definition, political rights enable people to participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public office, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate. Each country is assigned a numerical rating—on a scale of 1 to 7—for political rights; a value of 1 indicates the highest degree of freedom and 7 the lowest level of freedom.

In this model the intercept contains three parts; the first, α_0, is the same for all years and individuals including countries, and the second, α_t, becomes specific to year *t* but is the same to all individuals (that is, year fixed effect), while α_i refers to specific individuals, but is the same for all years. The third is also called an individual effect (country fixed effect), which is allowed to be different across countries, namely $\alpha_i \neq \alpha_j$. The estimation results obtained by OLS, therefore, show serious problems of biasness, due to the restriction that country intercept terms equal zero (or $\alpha_i=0$). Furthermore, if α_t is used in the model, panel data will convert to 'two way panel data', otherwise we will have 'one way panel data'. Under the method of two way panel data, α_t is present in the regression model that stands for the time effect, whereas it is not included in a regression estimated by the one way panel data method (Baltagi, 2005).

By estimating Equation (4), the relationship between urban primacy and economic growth is determined. Urban primacy could be moved toward its best value by adopting adequate policies. A key question is what are the determinants of urban concentration (primacy)? As stated before, primacy is expected to differ across time and countries due to differences in country size and the level of economic development. Henderson (2000) mentioned that urban concentration initially increases as income rises, peaks, and then declines with further increase in income. Also, it is expected that urban concentration is likely to decline with country scale – as measured by national urban population.

In addition to these factors, urban concentration will be influenced by policy/ instrumental variables. For example, urban concentration would be expected to decrease as the degree of federalism in a country increases. Federalism tends to level the playing field for competition across cities. Hinterland states and cities have more autonomy to provide their own services and infrastructure investments, so as to attract firms and workers from primate cities. The degree of openness is a policy variable. The expected impact of increased openness on urban concentration is ambiguous. On the one hand, given the primary cities may be coastal ports and/or centers of international commerce, increases in openness may favor the primary city. On the other hand, following the new economic geography literature (Fujita, et al., 1999), increase in openness may open up international markets to hinterland producers, and allow them to compete more effectively with primary cities (Henderson, 2000). Meanwhile, in the case of urban economics theories, the more industrialized a country the more likely that industries will be transferred from primary mega-cities to medium and small cities, in order to reduce production costs. Thus, the share of industry in GDP would influence urban primacy negatively. Therefore, urban concentration in country *i* in time *t* is specified as:

$$Primacy_{i,t} = \beta_0 + \beta_i + X_{i,t}\Phi + \upsilon_{i,t} \quad (5)$$

where β_0 and β_i are intercepts and $\upsilon_{i,t}$ is the error term. $X_{i,t}$ includes GDP per capita in logarithm at level and quadratic form (*Lny, Lny*^{2}), government size, openness, log of urban population as an index for country size (*LnUp*),

* Freedom House is a non-governmental organization (NGO) in the United States that conduct research on democracy, political freedom and human rights. It publishes an annual report assessing the degree of perceived democratic freedoms in each country, which is used in political science research (For more information see Freedom House: About us; retrieved from: www.freedomhouse.org).

the value added of industry to GDP (*Ind*), log of life expectancy (*LnLe*) and civil liberalization (*CL*). Similar to *Pr*, *CL* catches values in a range of 1 to 7. Civil liberties allow for freedoms of expression and belief, associational and organizational rights, rule of law, and personal autonomy without interference from the state. Data for this is from Freedom House.

5. Empirical Results

First, we estimate Equation (4) and Equation (5), separately. Then, we consider these equations as a simultaneous system. Tables 2 and 3 report the estimation results for these equations, respectively. In Table 3, columns 2-4 show the results of the growth model without the urban primacy effects in the form of pooled, fixed effects and random effects. The F-Leamer statistics [F (22,108)=2.61] explain that the model uses panel data and that the intercepts are heterogeneous. Also, the Hausman test (χ^2=27.33) signifies that random effects (*RE*) is more efficient than fixed effects (*FE*).

Table 2: Estimation results of the growth model without and with urban primacy effects

Variables (1)	Pooled (2)	Fixed Effects (3)	Random Effects (4)	Fixed Effects (5)	Random Effects (6)
Const.	0.643**	2.058**	0.644**	3.198**	1.366**
	(7.16)	(6.12)	(7.16)	(7.66)	(7.95)
Lny$_{-1}$	-0.049**	-0.232**	-0.049**	-0.416**	-0.155**
	(-4.50)	(-5.66)	(-4.50)	(-9.03)	(-6.02)
Gov	0.012	-0.66*	0.012	-0.144	-0.250
	(0.05)	(-1.70)	(0.05)	(-0.43)	(-1.01)
Ginv	0.029**	0.018**	0.029**	0.017**	0.027**
	(5.47)	(2.81)	(5.47)	(3.15)	(5.53)
Open	0.012	0.049	0.012	0.00007	0.053*
	(0.48)	(0.82)	(0.48)	(0.00)	(1.83)
Inf	-0.683**	-0.631**	-0.683**	-0.365**	-0.561**
	(-8.82)	(-8.24)	(-8.82)	(-4.87)	(-7.65)
Pr	0.013*	0.030**	0.013*	0.015	0.010
	(1.88)	(2.38)	(1.88)	(1.46)	(1.50)
LnFr	-0.170**	-0.154**	-0.10**	-0.073	-0.136**
	(-5.34)	(-2.71)	(-5.34)	(-1.49)	(-4.30)
Primacy				-21.012**	-3.372**
				(-6.29)	(-2.50)
*Primacy*Lny*				2.588**	0.481**
				(6.83)	(3.11)
Primacy$^{\wedge 2}$				37.735**	-9.599
				(3.38)	(-1.46)
Primacy$^{\wedge 2}$**Lny*				-5.919**	2.427*
				(-2.84)	(1.92)
Primacy$^{\wedge 2}$**Lny*$^{\wedge 2}$				0.180*	-0.159**
				(1.89)	(-2.58)
R^2*-within*		0.547	0.430	0.715	0.565
R^2*-between*		0.223	0.573	0.171	0.785
R^2*-overall*		0.203	0.530	0.249	0.635
$\overline{R}^2$	0.502				
		F(22,108)=2.61	χ^2=27.33	F(22,103)=4.15	χ^2=97.69
		Prob. = 0.0006	Prob. = 0.0003	Prob. = 0.0000	Prob. = 0.0000

****Significant at 5 per cent level. *Significant at 10 per cent level (t-values are in parentheses).**
Source: **Author**

The significant negative coefficients for Lny_{t-1} confirms the conditional convergence hypothesis (per capita income of each country converges to its steady-state level), and the speed of convergence (β) is 0.1. Government size (*Gov*) and trade (*Open*) have insignificant effects on growth. The growth of investment has a significant and positive effect on economic growth, while inflation and fertility rates have significant and negative effects on economic growth. However, political rights (*Pr*) contribute significantly to an increase in growth.

Columns 5 and 6 are estimation results of the growth model with urban primacy effects. As explained before, in accordance to the F-Leamer test [F (22,103)=4.15] the pooled model

is rejected and, based on the Hausman test (χ^2=97.69), the RE model is accepted. Because of the rejection of the pooled data model, only the panel data results are illustrated in the table. Inclusion of the urban primacy effects in the growth model increases the significance level of the considered variables, and the coefficients of determination of the model (overall, within and between) have improved. In this case the convergence hypothesis is also accepted and the speed of convergence is 0.3. Furthermore, openness has a positive and significant effect on economic growth for the countries considered.

The statistically significant coefficients of the primacy variable show that primacy influences economic growth of the selected countries in different ways. The most appropriate variable is *primacy*Lny* which has a positive and statistically significant coefficient implying a cross effect of primacy and income on growth, although its effect is non-linear and changes through the income level (the estimated coefficients of its cross effect with *LnUp* is insignificant and deleted from the model).

According to Table 3, the estimated coefficient of *Lny* and $Lny^{\wedge 2}$ are statistically significant, being positive and negative respectively. Therefore, Williamson's hypothesis is confirmed. In other words, as income rises, primacy increases, peaks and then decreases and de-concentration occurs.

Table 3: Estimation results of the urban primacy model

Variables	Pooled	Fixed Effects	Random Effects
Const.	0.794	-0.215	-0.147
	(1.02)	(-0.78)	(-0.59)
Lny	-0.128	0.168**	0.154**
	(-1.23)	(3.59)	(3.45)
Lny^2	0.013**	-0.012**	-0.011**
	(2.10)	(-4.06)	(-3.74)
Gov	-0.827**	-0.253**	-0.260**
	(-3.29)	(-3.12)	(-3.11)
Open	0.109**	0.029**	0.026**
	(3.87)	(2.36)	(2.11)
LnUp	-0.045**	-0.110**	-0.104**
	(-4.48)	(-4.58)	(-6.48)
Ind	-0.559**	-0.169**	-0.180**
	(-4.81)	(-3.41)	(-3.54)
CL	0.028**	0.011**	0.012**
	(3.39)	(3.69)	(3.60)
LnLe	0.128	0.433**	0.398**
	(0.58)	(3.40)	(4.15)
R^2*-within*		0.391	0.386
R^2*-between*		0.332	0.359
R^2*-overall*		0.333	0.360
$\overline{R}^2$	0.663		
		F(22,107)=194.21	χ^2=56.99
		Prob.=0.0000	Prob.=0.0000

***Significant at 5 per cent level. *Significant at 10 per cent level (t-values are in parentheses).**
Source: **Author**

Government expenditures influence urban primacy negatively. Also, primacy declines by country scale, and, as expected. Civil liberalization and life expectancy have positive and significant effects on primacy. Here, a key policy variable positively affecting urban primacy is the degree of openness. The estimated coefficient of *Ind* is significant and negative, which is theoretically consistent with urban economics.

Panel results based on a simultaneous-equations model of economic growth and urban primacy are demonstrated in Table 4. Here, instrumental variables (*IV*) for the model are lagged per capita income (in logarithm), government size, growth of investment, openness, inflation, log of fertility rate, primacy as defined before, log of urban population, the industry share, civil liberalization and log of life expectancy.

As the last column of the table shows, the conditional convergence hypothesis is accepted, and the speed of convergence is about 0.04. The coefficient of the lagged dependent variable (Lny_{it-1}) is statistically significant and of the expected sign. Investment and trade have significant and positive effects on economic growth, while the effects of inflation and

fertility rates are negative and consistent with the literature (Barro, 1997; and Henderson, 2000).

The coefficient of the squared primacy variable is statistically significant, implying an inconsistent relationship between primacy and growth over time. This relationship depends on the development level and country size. Hence, from an income point of view, the larger primacy the higher is growth, but if income changes more increasingly, primacy influences growth inversely. It implies the larger primate cities are costly in conjunction with economic growth. Thus, Williamson's hypothesis is confirmed. Moreover, the significant and positive cross effect of urban primacy and log of urban population reveals that the larger country size causes a greater effect of primacy on growth of the selected Asian countries.

Table 4: Estimation results of growth and urban primacy models in a simultaneous-panel data system

Variables	Fixed Effects- IV Variables	G2SLS-Random Effects
Const.	2.850**	1.438**
	(7.30)	(8.63)
Lny$_{-1}$	0.621**	0.828**
	(14.01)	(32.17)
Gov	-0.094	-0.227
	(-0.27)	(-0.84)
Ginv	0.018**	0.025**
	(3.44)	(5.33)
Open	0.009	0.060*
	(0.17)	(1.87)
Inf	-0.364**	-0.549**
	(-4.76)	(-7.57)
Pr	0.014	0.009
	(1.33)	(1.39)
LnFr	-0.166**	-0.092**
	(-2.51)	(-2.92)
Primacy	-6.754*	-9.390**
	(-1.85)	(-5.61)
*Primacy*Lny*	0.942	1.457**
	(1.17)	(3.52)
*Primacy*Lny*$^{\wedge 2}$	0.062	-0.048*
	(1.05)	(-1.82)
Primacy$^{\wedge 2}$	6.724**	2.35**
	(2.55)	(2.23)
Primacy$^{\wedge 2}$**Lny*$^{\wedge 2}$	-0.100**	-0.036**
	(-3.87)	(-3.08)
*LnUp*Primacy*	-0.253	0.76**
	(-1.44)	(2.02)
R^2*-within*	0.912	0.879
R^2*-between*	0.973	0.999
R^2*-overall*	0.970	0.994
	F(22,102)=3.55	χ^2=67.28
	Prob.=0.0000	Prob.=0.0000

****Significant at 5% level. *Significant at 10% level (t-values are in parentheses).**
***Source*: Author**

6. Conclusion

In this paper, the effect of urban concentration on economic growth was investigated. Our empirical results indicate that urban primacy is an appropriate index for urban concentration, significantly affecting economic growth. The inclusion of urban primacy variables to the growth model increases the model's goodness of fit. Both single equation and simultaneous-equation models confirm that there is an optimal level of urban concentration, which is dependent on the level of development and country size. Any deviation from the optimal level can reduce economic growth by increasing the costs of living in over-concentrated primate cities. On the other hand, this situation decreases economies of scale in other areas. Our finding shows that trade and the share of industry are key policy variables for influencing urban concentration in the selected Asian (both East and West) countries.

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