E C O N O M I C S   B U L L E T I N

Local Taxes and Parental Choice of Education: The Case of Pennsylvania

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Abstract

In this paper, we empirically examine the link between local taxes and education choice. Due to the endogenous relationship, 2SLS estimation is applied to correct for simultaneous equations bias. A total of 500 school districts in the state of Pennsylvania during the school years 1999-2000 to 2001-2002 are selected for a case study. Results indicate that local taxes per student are positively associated with private school enrollment rates, implying that increases in these enrollments greatly benefit public schools through tax support.

I would like to thank discussants at the SEA conference in New Orleans for very helpful discussion and advice about this paper.
Citation: Lin, Tin-Chun, (2008) "Local Taxes and Parental Choice of Education: The Case of Pennsylvania." *Economics Bulletin*, Vol. 9, No. 24 pp. 1-7
Submitted: July 17, 2008. **Accepted:** July 30, 2008.
URL: http://economicsbulletin.vanderbilt.edu/2008/volume9/EB-08I20011A.pdf

I. Introduction

In 2006, Lin and Quayes investigated how education inputs affect student performance. They found that local taxes are significantly related to student performance, implying that local taxes are one of the important education inputs. Since local taxes are the primary source of funds for public school districts and as such significantly determine the quality of public schools, local taxes may impact parents' choice of education. In addition, local taxes are set by local governments, which in turn are elected by local inhabitants. Parents who choose to enroll their children in private schools may be less willing to pay taxes to finance public schools. Thus, both local taxes and educational choice depend on parents' preference, implying that the amount of local taxes per public school pupil and parental choice of education are jointly determined. Therefore, in this paper, we attempt to develop an empirical model and test the hypothesis (i.e., local taxes may impact parental choice of education), which is the primary contribution made through this paper.

This article is organized as follows. First, we develop a simultaneous-equation framework and describe data measurement. Second, we present empirical results. Finally, concluding remarks are offered.

II. Empirical Models and Data Measurement

Due to the endogenous relationship, local taxes per student and parental choice of education are jointly determined simultaneously. Thus, a simple simultaneous-equation model is specified as follows:

Parental choice of education = *f* (*Poverty*, *Local taxes per student*, *Teacher salary*, *Teacher quality*, *Ethnicity*, *Student Performance* *Urbanization*, *Quality of public school*, *Religious belief*),

and

Local taxes per student = *f* (*Poverty*, *Parental choice of education*, *Ethnicity*, *Urbanization*, *Quality of public school*).

We used panel data. A total of 500 school districts in the state of Pennsylvania were selected for a case study, emphasizing school years 1999-2000 to 2001-2002. The data can be found on the *Pennsylvania Department of Education* website.

The proxy for parents' choice of education is K-12 private school enrollment rates, because parents can choose either public or private school for their children. The private school enrollment rates are defined as the number of students enrolled in private schools divided by the sum of the number of students enrolled in private and public schools. The proportion of public school enrollments from low-income families can be a proxy for poverty. This variable is defined as the number of enrollments from low-income families divided by the number of total enrollments.

Teacher salary is the primary factor affecting a school district's probability of hiring a highly qualified teacher. This variable is measured as the average annual salaries for full-time public school teachers. Teacher quality is positively related to his/her educational level and teaching experiences. It is measured as the average educational level of full-time teachers multiplied by the average total years of teaching (i.e., $AEY = E \times Y$, where AEY = average quality of teachers, E

= average educational level of full-time teachers, and Y = average total years of teaching) (See Note 1).

Ethnicity is one of the important factors in many parents' selection of private education for their children. Two proxies were selected for the variable of ethnicity: the proportion of African-American enrollments in public schools (i.e., total African-American enrollments divided by total enrollments in public schools); and the proportion of minority enrollments except African-American in public schools (i.e., total minority enrollments except African-American divided by total enrollments). It should be noted that minority students include American Indian/Alaskan Native, Asian/Pacific Islander, African-American, and Hispanic.

Three proxies are used to identify student performance in public schools. The first proxy is measured as public secondary school dropout rates. The second proxy is measured as the growth rate for the proportion of public high school graduates enrolled in 2- or 4-year colleges and universities. The growth rate of postsecondary education rates is used rather than postsecondary education rates because a high or low rate of postsecondary education cannot be said to precisely affect parents' choice of public or private education – parents may compare the rate with that for private schools. For example, we may think that a 65% enrollment rate among public high school graduates enrolled in 2- or 4-year colleges and universities is high, but the rate for private high school graduates enrolled in 2- or 4-year colleges and universities is 86%. A comparison of these two rates reveals that many high-income parents may choose private school for their children. What we need is a relative rate rather than an absolute rate. Unfortunately, no school district-level data are available for the proportion of private high school graduates enrolled in 2- or 4-year colleges and universities. Here, we use the growth rates for postsecondary education rates as a proxy because they can show improvement in student performance in public schools. The third proxy is the growth rate of SAT scores. The reason for using the growth rate for those scores is the same as that for using the growth rate of postsecondary education rates.

Student-teacher ratio in public schools can be a proxy for public school quality. This variable is defined as total enrollments in public schools divided by total number of teachers in public schools. The higher the ratio is, the lower the school quality will be.

Local taxes include real estate tax (see Note 2), earned income/net profits tax (see Note 3), and a mixture of other non-property taxes (occupational privilege, amusement, per capita, mercantile, business privilege, and mechanical devices). Local taxes are the primary source of local revenues for school districts. In other words, higher local tax revenues would lead to a higher quality of public schools because schools would have more funds to use in improving facilities and equipment. Local taxes per student are defined as total local tax revenues divided by total enrollments in public schools.

Urbanization is measured according to codes. These codes are: *1* = school district located in Rural, inside Core Based Statistical Area (CBSA); *2* = school district located in Rural, outside CBSA; *3* = school district located in Small Town; *4* = school district located in Large Town; *5* = school district located in Urban Fringe of a Mid-size City; *6* = school district located in Urban Fringe of a Large City; *7* = school district located in Mid-size City; and *8* = school district located in Large City (see Note 4).

Religious belief is also one of the important factors in many parents' selection of private education for their children. Religious beliefs are measured by the total number of adherents who are members of a church divided by the total number of residents. The number of adherents can be found in the *American Religion Data Archive*.

Based upon the simple simultaneous-equation model, we can develop the following regression models:

$$PER_{it} = a_0 + a_1 PLI_{it} + a_2 ATS_{it} + a_3 AEY_{it} + a_4 PBS_{it} + a_5 PMS_{it} + a_6 PSD_{it} + a_7 STR_{it} + a_8 LTX_{it} + a_9 URB_{it} + a_{10} GPH_{it} + a_{11} GSA_{it} + a_{12} RLP_{it} + \varepsilon_{1t}, \tag{1.1}$$

$$PER_{it} = \alpha_0 + \alpha_1 PLI_{it} + \alpha_2 \log ATS_{it} + \alpha_3 AEY_{it} + \alpha_4 PBS_{it} + \alpha_5 PMS_{it} + \alpha_6 PSD_{it} + a_7 STR_{it} + \alpha_8 \log LTX_{it} + \alpha_9 URB_{it} + \alpha_{10} GPH_{it} + \alpha_{11} GSA_{it} + \alpha_{12} RLP_{it} + \varepsilon_{2t}, \tag{1.2}$$

$$LTX_{it} = b_0 + b_1 PER_{it} + b_2 PLI_{it} + b_3 STR_{it} + b_4 PBS_{it} + b_5 PMS_{it} + b_6 PSD_{it} + b_7 URB_{it} + \varepsilon_{3t}, \tag{2.1}$$

$$\log LTX_{it} = \beta_0 + \beta_1 PER_{it} + \beta_2 PLI_{it} + \beta_3 STR_{it} + \beta_4 PBS_{it} + \beta_5 PMS_{it} + \beta_6 PSD_{it} + \beta_7 URB_{it} + \varepsilon_{4t}, \tag{2.2}$$

where i = 1, 2, 3,…, 500; t = 1999 – 2000, 2000 – 2001, 2001 – 2002; *PER* = private school enrollment rates; *PLI* = proportion of low-income families in public schools; *ATS* = average full-time teacher salaries in public schools; *AEY* = average education level of full-time teachers in public schools multiplied by average number of years teaching; *PBS* = proportion of African-American students; *PMS* = proportion of minority students except African-American; *PSD* = proportion of public secondary school dropouts; *STR* = student–teacher ratio in public schools; *LTX* = local taxes per student; *URB* = urbanization; *GPH* = growth rate of proportion of public high school graduates enrolled in 2- or 4-year colleges and universities; *GSA* = growth rate of SAT scores in public schools; *RLP* = the ratio of religious population to total resident population; and ε = stochastic disturbance (with a mean 0 and a variance σ^2).

III. Empirical Results

To correct for simultaneous equations bias, the Two-Stage Least Squares (2SLS) procedure is used to obtain unique estimates that are consistent and asymptotically efficient.

Determinants of Private School Enrollment Rates

The results from the 2SLS estimations are reported in Table 1. In columns (4) – (6), both average full-time teacher salaries and local taxes per student have been converted to log values. As columns (1) and (4) show, proportion of low-income families in public schools provides a negative and significant effect at the 10% level in Model 1 (Equation (1.1)) and 5% level in Model 2 (Equation (1.2)) on private school enrollment rates. This result implies that the higher level of poverty slows down the local economy, meaning that more middle-income families who initially chose private school may move into the public sector because they are less able to afford the costs of private education.

In columns (1) and (4), average full-time teacher salary in public schools provides a negative and significant effect at the 1% level in both models on private school enrollment rates. The result implies that higher teacher salaries would offer more confidence for parents of middle- and high-income families because they may believe that a higher teacher salary provides a greater incentive for teachers to spend more time assisting students and thereby improve student performance. In addition, the possibility of a higher teacher salary would result in a higher possibility of hiring a highly qualified teacher (Figlio, 1997).

Public school teacher quality, identified by *AEY*, exerts a positive and significant effect at the 10% level, as shown in column (1), on private school enrollment rates, but the effect is not significant at the 10% level, as shown in column (4). This variable initially was expected to exert a negative effect on private school enrollment rates because the availability of higher-quality teachers leads high- or middle-income families to send their children to public schools. However, this variable exerts a positive effect. One possible reason is that public school teacher quality is positively associated with private school teacher quality, implying that when the public school teacher quality is enhanced, private school teacher quality is also enhanced – perhaps even more so.

The proportion of African-American enrollments does not exert a significant effect on private school enrollment rates in both columns (1) and (4). Nevertheless, the proportion of minority enrollments except African-American exerts a positive and significant effect at the 1% level in both columns (1) and (4) on private school enrollment rates. The result might imply that the higher the proportion of non-white kids in public schools, the more likely it is that white families may send their children to private schools.

The proportion of public secondary school dropouts provides a positive and significant effect at the 1% level on private school enrollment rates, as shown in both columns (1) and (4). The result implies that the larger the number of kids who drop out from public schools, the greater the number of high- and/or middle-income families who prefer to choose private school for their children, because dropout rates in public schools reflect the public school performance. Thus, a higher dropout rate indicates a lower public school performance.

As expected, student-teacher ratio provides a positive and significant effect at the 1% level on private school enrollment rates, as shown in both columns (1) and (4), implying that the higher the ratio the lower the public school quality. Thus, more families may switch to the private sector.

Local taxes per student exerts a positive and significant effect on private school enrollment rates at the 1% level, as shown in both columns (1) and (4), which means that higher local taxes per student may lead to a higher proportion of private school enrollments. It should be noted that local taxes per pupil and private school enrollment rates indeed can be positively or negatively related. The effect is positive implying three possible explanations: first, more students enrolled in private schools, holding revenue constant, each student in public schools can receive more tax support; second, as offered by Erekson (1982), high-quality private schools may be located in the same school districts as high-quality public schools; third, high-income families may always have some preconception that the quality of private schools must be better than the quality of public schools, so that in the event of average income increases, more people move into the private sector. The estimated coefficient of local taxes per student is 0.00418 in column (1), indicating that for each additional dollar spent on each student from local taxes, there will be an estimated increase in the private school enrollment rate of approximately 0.00418%.

Urbanization exhibits a positive and significant effect at the 1% level on private school enrollment rates in both columns (1) and (4), implying that the more urbanized a school district is, the more likely it is that families will prefer to choose private education for their children.

The growth rates for postsecondary education rates provide a negative and significant effect on private school enrollment rates at the 5% level in column (1) and 10% level in column (4), respectively. However, the growth rates for SAT scores exert a negative but insignificant effect on private school enrollment rates, as shown in both columns (1) and (4). These results imply that improved student achievement in public schools may enhance parents' confidence and interest in public education and encourage them to send their children to public school.

As expected, religious beliefs provide a positive and significant effect on private school enrollment rates at the 1% level, as shown in both columns (1) and (4). This result means that religious beliefs may be the parents' reason for choosing private education, because most private schools are funded by religious denominations.

Furthermore, we test the correlations. The Pearson correlation coefficients (as shown in Table 3) suggest that multicollinearity may exist in the regression model. First, there could be collinearity between poverty (measured by "public school enrollments from low income families") and the racial composition variables in the regression (i.e., proportions of African-American enrollments and minorities except African-American enrollments). Second, there could be collinearity between the teacher quality (measures by "average educational level of full-time teachers multiplied by average teaching years") and "average full-time teacher salary", because both of these variables could represent teachers' productivity to some extent. Third, there could be collinearity between "student–teacher ratios" and "local taxes per pupil", since both of these two variables indicate the quality of public schools. Fourth, there could be collinearity between "growth rates of proportion of public high school graduates enrolled in 2- or 4-year colleges and universities" and "growth rates of SAT scores", because both of these two variables represent student performance. Therefore, to avoid multicollinearity, some of the explanatory variables should be dropped, such as "proportions of African-American enrollments and minorities except African-American enrollments", "average educational level of full-time teachers multiplied by average teaching years", "student–teacher ratios", and "growth rates of SAT scores". Consequently, as columns (3) and (6) of Table 1 show, proportion of public secondary school dropouts, local taxes per pupil, urbanization, and religious beliefs exert a positive and significant effect at the 1% level on private school enrollment rates; but proportion of low-income families in public schools, average full-time teacher salaries in public schools, and growth rates of proportion of public high school graduates enrolled in 2- or 4-year colleges and universities provide a negative and significant effect at the 1%, 5%, or 10% levels on private school enrollment rates.

Determinants of Local Taxes per Student

The results from the 2SLS estimations are presented in Table 2. As columns (1) and (4) show, private school enrollment rates exert a positive and significant effect on local taxes per student at the 1% level. The positive effect suggests that increases in private school enrollments greatly benefit tax support for public schools. The estimated coefficient of private school enrollment rates is 374.303, which means that one additional percentage point in the private school enrollment rate is estimated to increase public school spending from local taxes for each student by approximately $374.

In columns (1) and (4), proportion of low-income families in public schools exerts a negative and significant effect on local taxes per student at the 1% level. The negative effect implies that a greater number of families at the poverty level would slow down the local economy, in turn decreasing local tax revenues. In addition, student-teacher ratio in public schools exerts a negative and significant effect on local taxes per student at the 1% level, implying that increases in the student-teacher ratio cause a great loss in tax support for public schools.

Both the proportions of African-American enrollments and minority enrollments except African-American in public schools in columns (1) and (4) reveal a positive and significant effect on local taxes per student at the 1% level. According to the positive effect, the greater the minority enrollments in public schools, the greater the number of white students from middle- and high-income families who may switch to private schools; thereby creating a significant benefit in tax support for public schools. Similarly, public secondary school dropout rates exert a positive and significant effect on local taxes at the 1% level, meaning that a larger number of students would withdraw from public schools, which would then lose tax support.

In addition, as shown in columns (1) and (4), urbanization exerts a negative and significant effect on local taxes per student at the 1% and 5% levels, respectively. A possible explanation for the negative effect is that maybe lower performance is correlated with big city schools, causing it to be negative.

Moreover, according to the correlation test, multicollinearity may exist in the regression model. Thus, some variables need to be dropped. As shown in columns (3) and (6) of Table 2, private school enrollment rates and public secondary school dropout rates exert a positive and significant effect on local taxes per student at the 1% level. The estimated coefficient of private school enrollment rates is 396.083 in column (3). Therefore, roughly speaking, based on columns (1) and (3), a 1% increase in the private school enrollment rate will lead to an increase in public school spending of \$350 - \$400. In addition, both proportion of low-income families in public schools and urbanization exert a negative and significant effect on local taxes per student at the 1% level. However, urbanization in column (6) does not exert a significant effect (although it is positive) on local taxes per student.

IV. Conclusion

In this paper, we empirically examine the link between local taxes and parental choice of education. Due to the endogenous relationship, Two-Stage Least Squares estimation was used to correct for simultaneous equations bias. A total of 500 school districts in the state of Pennsylvania were selected for a case study, emphasizing school years 1999-2000 to 2001-2002. Empirical results reveal that local taxes per student are positively and significantly related to private school enrollment rates, meaning that increases in private school enrollments greatly benefit tax support for public schools.

Notes

1. The level of education is measured via codes. These codes are: *1* = less than high school graduate; *2* = high school graduate; *3* = less than bachelor's degree; *4* = bachelor's degree; *5* = master's degree; and *6* = doctor's degree (see *Public School Professional Personnel*, Pennsylvania Department of Education).
2. The real estate tax is levied on the land and buildings owned by individuals and businesses. This tax is the major source of tax revenue for most school districts and used by all Pennsylvania districts.
3. The earned income tax is levied on the wages, salaries, commissions, net profits, and other compensation of those who reside in the district, but the income from interest and dividends is not included. This tax is the largest of the non-property taxes, and applies to employed individuals, unincorporated business owners, partnerships, etc., and is normally withheld from workers' paychecks.
4. Large City = a central city of a Core Based Statistical Area (CBSA) or Consolidated Statistical Area (CSA), with the city having a population greater than or equal to 250,000; Mid-size City = a central city of a CBSA or CSA, with the city having a population less than 250,000; Urban Fringe of a Large City = any incorporated place, Census designed place, or non-place territory within a CBSA or CSA of a mid-size city and defined as urban by the Census Bureau; Urban Fringe of a Mid-size City = any incorporated place, Census designated place, or non-place territory within a CBSA or CSA of a mid-size city and defined as urban by the Census Bureau; Large Town = an incorporated place or Census designated place with a population greater than or equal to 25,000 and located outside a CBSA or CSA; Small Town = an incorporated place or Census designated place

with population less than 25,000 and greater than or equal to 2,500 and located outside a CBSA or CSA; Rural, outside CBSA = any incorporated place, Census designated place, or non-place territory not within a CBSA or CSA of a large or mid-size city and defined as rural by the Census Bureau; and Rural, inside CBSA = any incorporated place, Census designated place, or non-place territory within a CBSA or CSA of a large or mid-size city and defined as rural by the Census Bureau. (Source: Pennsylvania Department of Education (www.pde.state.pa.us)).

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Table 1: Estimates of *PER*

Explanatory Variables	Model 1 (Equation 1.1): 2SLS Explained Variable: *PER*			Model 2 (Equation 1.2): 2SLS Explained Variable: *PER*		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-16.94*** (-6.75)	-8.736*** (-4.02)	-7.76*** (-3.71)	-41.34* (-1.61)	-50.98** (-1.98)	-73.02*** (-3.15)
PLI	-0.0285* (-1.60)	-0.04979*** (-2.80)	-0.04802*** (-3.36)	-0.04083** (-2.19)	-0.05595*** (-3.03)	-0.05254*** (-3.56)
ATS	-0.00034*** (-6.13)	-0.00025*** (-4.64)	-0.00019*** (-3.84)			
log (*ATS*)				-11.364*** (-4.01)	-8.016*** (-2.91)	-5.713** (-2.32)
AEY	0.03917* (1.71)	0.04682** (2.02)		0.02124 (0.89)	0.02758 (1.15)	
PBS	-0.01865 (-0.86)	-0.01799 (-0.82)		-0.00569 (-0.25)	-0.00638 (-0.28)	
PMS	0.1307*** (3.60)	0.15534*** (4.25)		0.14618*** (3.88)	0.16409*** (4.35)	
PSD	0.7809*** (3.76)	0.9141*** (4.37)	1.0509*** (5.21)	0.6824*** (3.17)	0.7963*** (3.70)	0.9743*** (4.68)
STR	0.7345*** (6.27)			0.5661*** (4.65)		
LTX	0.00418*** (22.49)	0.00358*** (22.14)	0.00351*** (22.65)			
log (*LTX*)				42.296*** (19.21)	37.061*** (19.45)	36.961*** (20.10)
URB	0.77*** (5.53)	0.8165*** (5.80)	0.8351*** (6.34)	0.7404*** (5.10)	0.7784*** (5.33)	0.8544*** (6.25)
GPH	-0.02178** (-2.00)	-0.01933* (-1.76)	-0.01970* (-1.78)	-0.02006* (-1.78)	-0.0183* (-1.61)	-0.019* (-1.66)
GSA	-0.01164 (-1.52)	-0.01065 (-1.37)		-0.012121 (-1.52)	-0.01124 (-1.40)	
RLP	0.0959*** (4.66)	0.11984*** (5.85)	0.11494*** (5.84)	0.10164*** (4.75)	0.12031*** (5.69)	0.11019*** (5.42)
R^2	0.472	0.458	0.450	0.431	0.423	0.415
$\overline{R}^2$	0.468	0.454	0.447	0.427	0.419	0.412
F-Statistics	110.91	114.47	174.10	93.95	99.14	150.92
Sample Size	1500	1500	1500	1500	1500	1500

(*t*-value) *** Denote statistical significance of the *t*-statistic at the 0.01 level; ** denote statistical significance of the *t*-statistic at the 0.05 level; * denote statistical significance of the *t*-statistic at the 0.10 level.

Table 2: Estimates of *LTX* and log (*LTX*)

Explanatory Variables	Model 1 (Equation 2.1): 2SLS Explained Variable: *LTX*			Model 2 (Equation 2.2): 2SLS Explained Variable: log (*LTX*)		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	2375.5*** (21.78)	1182.03*** (21.61)	831.64*** (18.43)	7.845*** (194.82)	7.7104*** (399.37)	7.6011*** (481.66)
PER	374.303*** (120.72)	383.416*** (121.16)	396.083*** (129.81)	0.07281*** (63.62)	0.07384*** (66.10)	0.07753*** (72.64)
PLI	-16.472*** (-15.92)	-13.858*** (-13.03)	-8.1489*** (-8.90)	-0.00652*** (-17.08)	-0.00623*** (-16.58)	-0.00429*** (-13.40)
STR	-69.716*** (-12.45)			-0.00787*** (-3.81)		
PBS	10.361*** (9.11)	10.993*** (9.22)		0.00376*** (8.95)	0.00383*** (9.09)	
PMS	13.316*** (6.87)	11.943*** (5.87)		0.00193*** (2.69)	0.00177** (2.47)	
PSD	26.43** (2.36)	19.36* (1.65)	57.32*** (4.97)	0.02317*** (5.61)	0.02237*** (5.40)	0.03201*** (7.94)
URB	-42.753*** (-5.88)	-58.231*** (-7.74)	-32.508*** (-4.39)	-0.005663** (-2.11)	-0.00741*** (-2.79)	0.000281 (0.11)
R^2	0.965	0.961	0.958	0.898	0.897	0.891
$\overline{R}^2$	0.965	0.961	0.958	0.897	0.896	0.890
F-Statistics	5861.80	6175.90	8574.17	1868.56	2158.04	3040.81
Sample Size	1500	1500	1500	1500	1500	1500

(*t*-value) *** Denote statistical significance of the *t*-statistic at the 0.01 level; ** denote statistical significance of the *t*-statistic at the 0.05 level; * denote statistical significance of the *t*-statistic at the 0.10 level.

Table 3: Pearson Correlation Coefficients between Two Variables (P-Values)

	PLI	*ATS*	*AEY*	*PBS*	*PMS*	*PSD*	*LTX*	*URB*	*GPH*	*GSA*
PLI	1.000 (0.000)	-0.358 (0.000)	0.123 (0.000)	0.519 (0.000)	0.053 (0.041)	0.509 (0.000)	-0.61 (0.000)	-0.073 (0.005)	0.025 (0.332)	-0.031 (0.236)
ATS	-0.358 (0.000)	1.000 (0.000)	0.226 (0.000)	0.093 (0.001)	0.187 (0.000)	-0.216 (0.000)	0.630 (0.000)	0.492 (0.000)	-0.016 (0.540)	-0.001 (0.981)
AEY	0.123 (0.000)	0.226 (0.000)	1.000 (0.000)	-0.175 (0.000)	-0.221 (0.000)	-0.067 (0.009)	-0.203 (0.000)	-0.041 (0.115)	0.004 (0.881)	-0.055 (0.033)
PBS	0.519 (0.000)	0.093 (0.001)	-0.175 (0.000)	1.000 (0.000)	0.209 (0.000)	0.413 (0.000)	-0.005 (0.860)	0.366 (0.000)	-0.025 (0.326)	-0.008 (0.752)
PMS	0.053 (0.041)	0.187 (0.000)	-0.221 (0.000)	0.209 (0.000)	1.000 (0.000)	0.261 (0.000)	0.187 (0.000)	0.303 (0.000)	-0.023 (0.368)	-0.001 (0.960)
PSD	0.509 (0.000)	-0.216 (0.000)	-0.067 (0.009)	0.413 (0.000)	0.261 (0.000)	1.000 (0.000)	-0.303 (0.000)	0.088 (0.001)	0.009 (0.742)	-0.026 (0.322)
LTX	-0.61 (0.000)	0.630 (0.000)	-0.203 (0.000)	-0.005 (0.860)	0.187 (0.000)	-0.303 (0.000)	1.000 (0.000)	0.351 (0.000)	-0.025 (0.332)	0.062 (0.017)
URB	-0.073 (0.005)	0.492 (0.000)	-0.041 (0.115)	0.366 (0.000)	0.303 (0.000)	0.088 (0.001)	0.351 (0.000)	1.000 (0.000)	-0.049 (0.057)	0.027 (0.288)
GPH	0.025 (0.332)	-0.016 (0.540)	0.004 (0.881)	-0.025 (0.326)	-0.023 (0.368)	0.009 (0.742)	-0.025 (0.332)	-0.049 (0.057)	1.000 (0.000)	-0.024 (0.348)
GSA	-0.031 (0.236)	-0.001 (0.981)	-0.055 (0.033)	-0.008 (0.752)	-0.001 (0.960)	-0.026 (0.322)	0.062 (0.017)	0.027 (0.288)	-0.024 (0.348)	1.000 (0.000)