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The Effect of Education and Experience on Wages: The Case Study of Thailand in 2012

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Abstract

This paper examines the effect of education and experience on wages of workers in Thailand, especially the differences in urban and rural labor markets. This paper proposes that both education and experience significantly impacts wages. The study estimates are based on the Mincerian wage equation with a large cross-section data of Thai individuals. The results suggest that education and experience are positively correlated with the wages of labor in both urban and rural labor markets. This relationship is significant and evident across all the estimation.

Keywords: Education, Wage, Experience

Introduction

In the past, we witnessed an increased interest in the level of wage and level of education for workers across the world. According to David Autor, during the 1950's and 1970's in the U.S., a rising level of education attainment kept up with rising demand forskilled labor. However, in the late 1970's and 1980's, the rising level of education attainment has not kept up with the rising demand for skilled labor, resulting in a sharp rise in the inequality of wages. For Thailand,a developing country, demand for skilled labor in order for the country's growthis high, a situation comparable to the U.S. during the 1950's through 1970's.

Within the last few years, it is clear that the gap in wage between more highly skilled and less-skilled workers in Thailand has been increasing. Thailand, as an emerging country, has been in a period of highly rapid growth, mostly in urban areas. As there has been a dramatic difference between the rural area and the urban areas, the wage distribution is not uniform across regions of the country; poverty is more concentrated in the rural areas. Therefore, wage inequality was also not uniform across the country; the wider income differentials between households in different locations accounted for the increase in overall inequality. Regional differences in wages also reflect different degree of urbanization and participation in international trade. When a modern industrial sector is introduced into an agricultural economy during the rapid economic growth of Thailand, the wage gap between these two sectors will rise. However, when the modern sector absorbs labor from rural areas, the wage gap will narrow again (Ikemoto and Uehara 2000). This means that educational attainment also plays an important role for labor to make a transition from the old sector to the new sector.

As the country is still developing, education attainment is one of the most important factors to help increase the number of skilled labor. The level of education in Thailand is in the process of improving, as the government is trying to develop the education system to become more equal and effective. Education in Thailand is mostly provided and regulated by theMinistry of Education, and 9 years of schooling is made mandatory by the government.

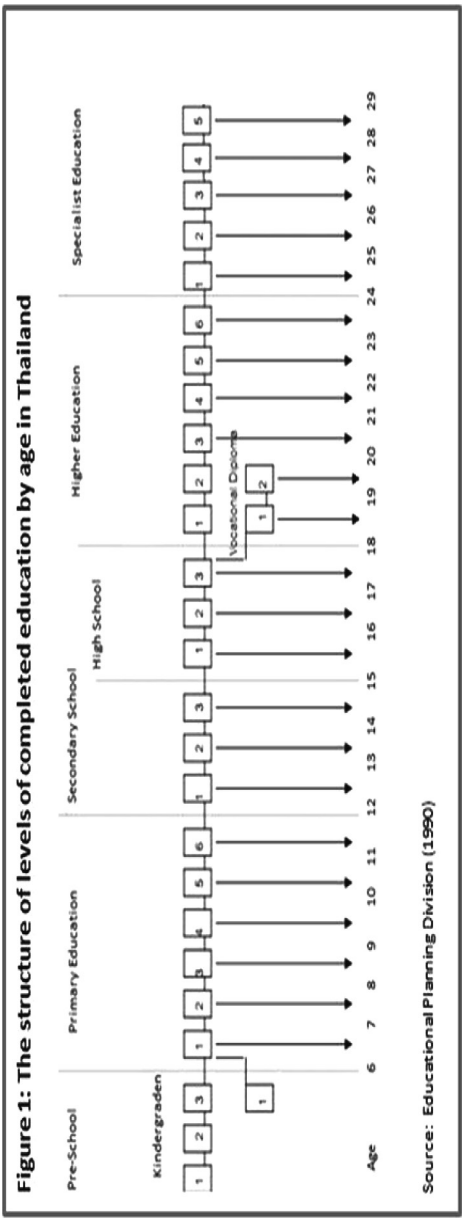
Figure 1: The structure of levels of completed education by age in Thailand
Pre-School
Primary Education
Secondary School
High School
Higher Education
Specialist Education
Kindergraden
Vocational Diploma
Age
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
Source: Educational Planning Division (1990)

In 2009, the government announced free basic education for 12 years, therefore gradually expanding access to basic education. As a result, the number of primary and secondary school enrolment has increased rapidly. However, most of the schools in Thailand fall below satisfactory level in terms of educational achievement, quality of teacher, and overall school administration, even though the education budget totals to roughly 27 percent of Thailand's national budget. According to UNICEF, about 600,000 primary-school-age children in Thailand are not attending school, and about half of the children who are in school do not finish high school.

From Figure 2, in 2009, most of the employed people aged 15 and over received only primary education, which accounted for almost 56 percent of all the employed. Around 15.5 percent received secondary school. This is not a surprise to us, as we expect most of the employment to be clustered in the agricultural sector, which does not require a high level of education. However, about 11 percent of the employed received higher education, and we can expect these employed people to be in the industrial sector.

From Figure 3, in 2009, people who have worked before but are currently unemployed have mostly received only primary education, and the second and third highest rates pf unemployment are workers with secondary school and high school. However, the unemployed who have never worked before are mostly higher education graduates. The reason might be because the job market is very competitive in industrial sector, and also because of the financial crisis around the world in that year.

Figure 2: Employment (Age 15 and over) by level of education in Thailand

Level or Education		2009
Population (Thousands)	Total	37,706.3
	Primary Education and Lower	21,083.9
	Secondary School	5,792
	High School	3,730.6
	Vocational Certificate	1,298.8
	Vocational Diploma	1,607.4
	Higher Education	4,193.6
Percent (%)	Total	100
	Primary Education and Lower	55.9
	Secondary School	15.4
	High School	9.9
	Vocational Certificate	3.4
	Vocational Diploma	4.3
	Higher Education	11.1

Source: Labor Force Survey. NSO

Figure 3: Unemployment by level of education in Thailand

Level or Education		2009	
		Worked before	Never worked before
Population (Thousands)	Total	403.1	169.2
	Primary Education and Lower	149	22.7
	Secondary School	99.9	33.7
	High School	55.8	15.8
	Vocational Certificate	22.4	11.5
	Vocational Diploma	34.5	18.2
	Higher Education	41.7	67.4
Percent (%)	Total	100	100
	Primary Education and Lower	36.96	13.41
	Secondary School	24.77	19.9
	High School	13.83	9.33
	Vocational Certificate	5.54	6.81
	Vocational Diploma	8.56	10.73
	Higher Education	10.34	39.81

Source: Labor Force Survey. NSO

From the populationas of January 2013, there are 54.62 million people over 15 years old. About 39.15 million people are employed, 247 thousand people are unemployed, and around 15.18 million people are not in the labor force. The most or around 1.1 percent of the unemployed are middle school graduates. The second highest are high school graduates, consisting of 1 percent of the unemployed, and around 0.9 percent are university graduates. Around 15.69 million people, or 40.1 of the employed are working in the agricultural sector, and 23.46 million people or 59.9 percent of the employed are working in the non-agricultural sector. Most or around 83.5 percent of the employed are working at least 35 hours per week. Around 15.9 percent of the employed are working around 1 to 34 hours per week.As we can see, Thailand still has an insufficient supply and quality of skilled labor to meet its demand for skilled labor.

With the inconsistency in the education provided in Thailand, the wage gaps between workers with different levels of education--or even the same level of education but in different areas-- have also increased. With difference in the level of education and skill proficiency regarding different areas, this paper will show the relationship and impactof education and work experience, particularly on the differences in returns to schooling in urban areas and rural areas.

Figure 4: The average number of years of education in Thailand

Age	2009	
	Urban	Rural
15 and over	9	6.7
15 - 39	11.2	9.4
40 - 59	8.4	5.6
15 - 59	9.9	7.5
60 and over	5.1	3.6

Source: Office of Research and Development. Ministry of Education

From Figure 4 depicting the gap between the average number of years of education between rural and urban areas in 2009, we found that population in urban areas have an advantage to obtain more years of education than the rural population. As we can see, population of 15 years and older receive an average 9 years of education in urban areas, compared to only 6.7 years of education in rural areas. Figure 4 also shows the rising level of education in Thailand. We can see that older people have completed fewer years of education than the younger people.

Consequently, we are expected to find that the years of schooling and the years of workexperience should have animpacton wage significantly differentlyin the ruraland urban labor markets. However, we have some potential issues that this finding will not account for, such as the potential migration of labor from rural to urban area, the quality level of education, andthe complementarity between physical and human capital.

Literature Review

Here, this paper is talking about the effect of education and work experience on wages, which has been an important topic to our society. By looking at and studying the literatures and data, the goal of this paper is to learn and understand more profoundly about the effects of education and work experience in particular on the difference between the rural and urban areas of Thailand. By studying this, we can have a better understanding of the relationships and be able to implement and support the investment in education and policy into the right direction. However, looking at previous studies, the relationship between education and work experience in terms of wage is not yet fully explored and well established, as there is no previous study that makes this direct correlation to Thailand. In the case of Thailand, there is only Motonishi (2004) who attempted to answer the question, "why has income inequality in Thailand increased?" including education disparity in his income inequality function based on more education leading to more income. However, this does not explain the relationship of education and experience on wage directly.

Many economic theorists such as Mincer (1984) explain that economic growth and wage are contributed from the role of human capital in the form

of education. In 1974 Mincer agreed with Becker (1964) that the upward sloping wage profile occurs as human capital, or skills, increase with education and experience. Therefore, as a worker acquires more training, the individual's productivity and earning should increase. Mincer (1991) found that since labor market skills are acquired by learning at school and by learning on the job, changes in demand for skill should effect both wage differentials by education as well as those by labor market experience, according to human capital theory. He also stated that the slope of the cross-sectional profile is steeper in one period than another because more training takes place, or because the acquired learning has become more profitable. He suggested, with limited evidence, that there might be a substitution between (college) school education and work experience or training of high school graduates. Using wage regression, Constantine and Neumark (1996) showed that shifts in the incidence of various types of training over the 1980s favored more-educated, more-experienced workers. Giving that training is associated with higher wages, and that training is more prevalent among more-educated, more-experienced workers, changes in the distribution of and returns toboth education and the effects strengthened by the interaction between education and job training may have contributed to the growth of wage inequality in this period.

Pereira and Martins (2004) used the Mincer wage equation to find the returns to education in Portugal. They support that using the Mincer equation in its simpler form seems to give an approximate value for the total return to education. Newell and Socha (2007) also found the relationship between experience and education toward wage determination in Poland, using Ordinary least squares of Mincerian hourly earnings equations. They illustrated that there were sharp increases in the returns to professional and managerial work, as well as an increase in the wage penalty imposed on primary-educated workers, after controlling for other characteristics. Lynch (1992) showed that the private sector training plays a significant role in the determination of wages. As a consequence, the experience-wage differentials should move relatively in the same direction as the effect of education. Evidently, Brown (1983) showed that wages grew slowly before the training period, rapidly during the training period, and leveled off after it. An additional year of training raised wage growth in the firm by 4-5% over the year, in both cross sections and over time.

However, Alexander (1974) seems to disagree with this idea, as he found that the relationship between income and experience does not vary across structure within income classes. Oosterbeek and Webbink (2007) evaluated the effect of an extension of three years basic vocational programs with one year of general education on later wage of graduate. However, they fail to find any significant effect of this extension. They suggest that individuals attending basic vocational programs do not benefit from additional general education (in term of later wages). Fengliang, Xiaohao, and Morgan (2009) show that in China, class rank and status of job matching have no significant effect on the starting wages of graduates in most educational specializations. The labor market for graduates with higher education in China is characterized by the signaling effect, although some graduates also benefit from the human capital accumulated in higher education.

Many literatures also focus on wage gap by examining the relationship between wage, work experience, and education. For example, Katz noted huge growth during the 1980's in the wage gap between those with college education and those without, between those with non-manual jobs and those with manual jobs, between those with experience and those without. In United Kingdom, the wage gap expanded dramatically in 1980's, however with a different cause. In Japan, the wage gap occurred more moderately, on account of strength of the Japanese manufacturing sector. In France, the causes are from a high and pervasive minimum wage, and also the union contract extensions prevented wages of unskilled workers from falling significantly. However, the overall reason is the increase in demand for well-educated workers. Hotchkiss and Shiferaw (2010) agree with Katz by demonstrating that changes in endowments of workers with college degrees were largely responsible for the increasing wage gap in the 1980's and 1990's. Michelacci and Pijoan-Mas (2007) provide a model in which they specify the channel whereby wage inequality affects the return to working longer hours. A rise in the dispersion of job offers, which translates into higher within-skill wage inequality, raises the gains from obtaining better jobs and gives workers greater incentives to work longer hours; the effect is stronger as the labor market becomes tighter. Wheeler (2005) suggests that the vast majority of the rise in U.S. wage inequality over the past two decades is the product of increasing gaps between

workers within the same industry rather than between workers across different industries. His finding suggests that the variance of wages among workers with the same level of education has also grown. However, Mishel and Bernstein (2003) believed that the returns to education and experience, frequently account for less than half of the growth of wage inequality.

Pereira and Martins (2000) used the standard OLS from quantile regression of the Mincer wage equation from fifteen European countries across a fifteen-year period (1980-1995), whichpoints out that education is a risky and unpredictable investment. They believed that the marginal reward some individuals reap from their schooling is very low or even negative. Bedard (2001) stated that as constraints decline or higher education becomes more accessible, wage wouldmore closely reflect productivity. However, increased university access is often touted as part of the prescription to improve the lives of the"less" fortunate, and his results suggest that increased university access might result in lower earning power for the less able. By looking on the supply side, Psacharopoulos (1977) suggests that a policy of more equal access to education might have the desired impact of making income distribution more equal.

Empirical Model

Empirical studies of the impact of education and work experience on the wages of workers in Thailandfocusing on the differences in returns to schooling in rural and urban labor markets are still in their infancy. Most of the studies take the form of detailed studies ofincome inequality using the time series data.

However, there are many literatures using wage regression to determine the wage structures. Newell and Socha (2007) used Mincer equations to see the increase in hourly wage earning variation estimated by Ordinary Least Square (OLS). Mincer and Higuchi (1988) determined wage structures in the United States and Japan using wage function as log of wage with human capital variables such as schooling, work experience, tenure in the firm. Neumarkand Korenman (1992) estimated women's wage equation using OLS by having log wage with other vector of exogenous control variable.

Mincer earnings regressions have been reviewed by Heckman, Lochner and Todd (2003). So in order for us to evaluate the relationship of education, experience, and wage, we utilize the cross-section data analysis with the general Mincerian wage regression model from Mincer (1974) to see the relationship of education, work experience, and wages in Thailand.

The general Mincerian wage regression model form:

$$Log(\boldsymbol{Wage}_i) = \beta_0 + \beta_1(\boldsymbol{Education})_i + \beta_2(\boldsymbol{Experience})_i + \beta_3(\boldsymbol{Experience}^2)_i + \mu_i$$

The dependent variable in our wage equation is the natural logarithm of each individual's approximate monthly earning. The coefficients of the independent variables in our wage equations maybe interpreted as the percentage change in the wage rate affected by unit changes in the explanatory variables. The independent variables are education, experience, and experience-squared. These variables have been included in many previous wage and earning literatures.

The education variable indicates the number of years of formal schooling, between zero and twenty four years, including education from preschool to Doctoral level. One problem with this measurement is that the quality and specific type of education each individual obtain cannot be differentiated.

The experience variable is defined as age minus year of education. This variable indicates potential work experience after the completion of formal schooling. However, it will certainly overestimate individuals who have not been in the work force for their entire post-school careers.

As we would like estimate return to education separately in each urban and rural areas, we then implement the new expanded general Mincerian wage equation as follows:

$$Log(\boldsymbol{Wage}_i) = \beta_0 + \beta_1(\boldsymbol{Education})_i + \beta_2(\boldsymbol{Experience})_i + \beta_3(\boldsymbol{Experience}^2)_i + \beta_4(\boldsymbol{Area*Education})_i + \mu_i \quad (1)$$

The interactive variable is defined as year of education multiplied by area's dummy variable. This variable estimates returns to education within separate urban and rural areas.

With this general Mincerian wage regression model, we expect to find the positive coefficient in both education and experience. We also expect the coefficient of experience-squared to be negative, resulting from the diminishing returns to working experience as experience itself increases. We also expect that the effect on wage rates of education and working experience will be greater in urban areas than in rural area, as if employers in the urban area are more responsive to the labor market.

Data

We draw our data from the Statistical Forecasting Bureau, National Statistical Office, Ministry of Information, and Communication Technology of Thailand (NSO). They collect and maintain large amounts of data that have been made available limited to the public. The National Statistical Office also collects and compiles statistical data from other government agencies. Our data is collected from the labor force survey made by the Office of the Bureau of Statistics Forecast from the third quarter (June to September) of 2012.

We obtain the data through the National Statistical Office, which gathers data from the survey made by the Office of the Bureau of Statistics Forecast. Raw data is collected from each individual survey from the third quarter of 2012 directly from the NSO office that has 19,099 individual samples of Thailand's population. We decide to use the wage as a measurement-dependent variable. The wage measures the extent ofthe rate of return on human capital per each individual within the economy of Thailand in 2012. The general Mincerian wage equation uses the log of individual wages as the wage variable. We ran the Box and Cox (1964) test and also found that log of individual wages is better fitted to our data than normal individual wage.

As many literature point out, we are interested in measuring the return to education as a function of wage. Many studies have determined that because more education leads to more income, education is one of the main wage determinants. We use the number of year of schooling each individual

obtains before going into the labor force as the measurement of education. It designates the marginal effect of education in percentage on log wages. We obtained the specific title of education each individual obtained from the labor force survey made by the Office of the Bureau of Statistics Forecast from the third quarter (June to September) of 2012. The survey provides data in terms of specific grade or title of education each individual has received. However, in order to produce an accurate estimate number of years of schooling each individual receives, we identify the average age that the Thai population receive each specific title of education and converted our data from specific title of education to the number of years of schooling. We use 7 years old as a standard first grader. With few individuals having no education, we adjusted and increased the raw data by 0.5 years of education for the log wage equation to be defined in those zero range. We finally have the data range from 0.5 year of education to the maximum 24.5 years of education.

Another variable that we are interested in to help capture the return to human capital is working experiences. The data that the NSO provides from the labor force survey does not included working experience data. Therefore, in order to find the most accurate working experience, we defined each individual's graduation age based on each individual's age and the title of education they obtained. Then we use each individual's age minus the graduation age to obtain the working experience after graduation from a certain level of education. This method of experience estimation has been implemented in many literatures. We produce experience square by using experience times experience. With few individuals newly graduated and havinghad no experience, we adjusted the year of experience and increased the raw data by 0.5 years of experience for the log wage equation to be defined in those zero range.

The last variable that we introduce is the interactive education and area term. We obtain the data from the labor force survey made by the Office of the Bureau of Statistics Forecast. The area each individual resides within Thailand, as a dummy, deviates from 0, representing rural areas, to 1, representing urban areas. Then, we try to find the returns to education in each separate area by adding the area that each individual resides in times the education each individual has obtained. This variable provides the difference in returns to education in each area.

Table 1: Summary of the Discriptive Statistics

Variables	Description	Mean (Std. Dev.)
WAGE	Approximate wage each individual earn each month (measure in THB)	11808.63 (19434.83)
LOG(WAGE)	Natural log of wage	9.064253 (0.7091829)
EDUCATION	Level of Education each individual obtained (measured in year)	10.67127 (4.777984)
EXPERIENCE	Estimated level of Experience each individual has (measured in year)	21.90609 (13.1825)
EXPERIENCE^2	Product of Experiences	653.6462 (697.6201)
AREA	Dummy variable. AREA takes on the value of 1 if individual resides in urban area and 0 if individual resides in rural area	0.6966333 (0.4597243)

Note: n = 19099

Empirical Result

Table 1 shows the result from our estimated Mincerian wage equation, along with a t-statistic indicating the difference between the corresponding coefficients. The OLS results of wage equation reveals significant correlations between wage and all the independent variables. In this case neither the null hypothesis nor the coefficients across equation is accepted.

Urban Estimated Wage Equation (2)

$$Log(\textbf{Wage}) = 0.1110496*\textbf{Education} + 0.0425333*\textbf{Experience} - 0.0005124*\textbf{Experience}^2 + 7.325072$$

Rural Estimated Wage Equation (2)

$$Log(\textbf{Wage}) = 0.1014097*\textbf{Education} + 0.0404177*\textbf{Experience} - 0.0005124*\textbf{Experience}^2 + 7.325072$$

Our predictions of signs of coefficients are strongly supported by this regression. The education and experience coefficients in each rural and urban area are all significantly greater than zero at one percent level.The coefficients of education in both areas are positive, with the effect stronger in urban areas. We expect the additional year of education to have higher percentage increase in terms of wages in urban area job markets. In addition, the urban area has the stronger positive effect in experience variable. As urban area job markets

consist of higher technology-based jobs rather than labor jobs more evident in rural areas, the additional year of experience in an urban area will have a stronger effect in higher percentage increase in wage.Furthermore, the experience-square coefficient is also significantly less than zero, indicating the diminishing return of experience as the number of years of experience becomes larger. However, we keep the diminishing return of experience as a constant in this equation.

By including the interactive experience-square coefficient in the regression, equation (3), the result shows that the diminishing return of experience for urban workers is lower than that of rural workers. Therefore, we can see that the effect of experience on wage level diminishes faster in rural areas. As most of the rural area jobs are labor jobs, the additional year of experience will be limited, because they experience less technological acceleration in their job.

In general, rural areas appear to have the flattening-out effect of wage equation faster than urban areas.The percentage increases in wage rate resulting from an additional year of education is around 10 percent in rural area workers, and 11 percent in urban area workers. Thus, an additional year of experience raises about 4.2 percent in urban areas, and about 4 percent in rural areas. For an additional 10 years of experience, the rural area effect on wage declines by roughly 0.054 percent, and the urban area effect on wage effect declines by around 0.049 percent.

In addition, we also ran the regression by including area in the equation. The result,equation (6), shows that by keeping all the percentage the same for both urban and rural area workers, the large effect on area coefficient has a large upward shift for the y-intercept in the whole wage profilefor urban area workers. This shows that urban workers begin their career with relatively higher wages than rural workers. We also do the robustness check by testing this wage equation for each urban and rural sample set separately; equation (4) and equation (5), and results are consistent with our initial results.

Table 1: Summary of OLS Results

Variable	Equation (1) Log(wage)	Equation (2) Log(wage)	Equation (3) Log(wage)	Equation (4) Log(wage)	Equation (5) Log(wage)	Equation (6) Log(wage)
education	0.992434	0.1014097	0.1097223	0.1135118	0.0950991	0.1087266
	(87.09)	(83.43)	(119.05)	(104.49)	(53.98)	(117.56)
	***	***	***	***	***	***
experience	0.0421743	0.0404177	0.0415065	0.0417893	0.0408027	0.0421616
	(43.16)	(39.03)	(42.23)	(34.88)	(23.97)	(43.11)
	***	***	***	***	***	***
experience2	-0.00052	-0.0005124	-0.0005724	-0.0004816	-0.0005572	-0.0005157
	(-28.19)	(-27.72)	(-30.24)	(-20.79)	(-18.23)	(27.94)
	***	***	***	***	***	***
area						0.1344367
						(16.25)
						***
areaedu	0.0129659	0.0096399				
	(17.25)	(9.69)				
	***	***				
areaexp		0.00211560				
		(5.10)				
		***				
areaexp2			0.0001076			
			(13.09)			
			***			

Note: The coefficients of the variable are presented on this table. The t-statistics of the correlations are presented in the parenthesis. *** indicates p-value less than 0.01.

Discussion

The purpose of this study is to identify and observe the nature of the relationships between education and experience on wage in urban and rural areas. The result of the OLS regression illustrates that there is a strong, significant relationship between education, experience, and wage. Within that, the results also reveal the difference of this relationship in urban and rural areas.

As presented in the results, there is a significant positive relationship between an additional year of education and wage. The coefficient of education is relatively large, compared to the coefficient of experience variable. The t-statistics of both urban and rural wage equations are fairly large, indicating that there is a significant positive correlation. This suggests that an additional year of education is associated with the percentage increase in wage, in both

urban and rural areas in Thailand. The return to an additional year of education in urban areas is approximately 11 percent, while it is approximately 10 percent in rural areas. Even though the differences in return to education of only 1 percent may seemsmall, when compounding the return to education in both areas with the number of years left to work, for example 40 years, the compounding return is significantly larger in urban areas than in rural areas. The coefficient of experience is relatively smaller than the education coefficient. Similar to education, experience shows positive correlation with wage, suggesting that an additional year of experience is also associated with the percentage increase in wage as well.

The possible explanation for the differences in magnitude of the positive relation in an additional year of education and experience is that, there are fewer years of education people can obtain, while there are many more years workers can obtain their skills through experiences. Workers often get promoted with more than one year of experiences, while an additional year of education can make a difference of an initial job position, which can further determine wage growth.

On the contrary, the coefficient of the experience-square or the diminishing returns to working experience is relatively small, and the t-statistic are fairly large, in a negative direction. This indicates that there is a significant negative correlation, which suggests the diminishing return of working experience on the percentage increase of wage.

Regarding the area of labor markets, the observed correlations of the additional year of education in urban areas is significantly larger than in rural area. This suggests that the return to education is more in the urban labor market than in the rural labor market. However, the observed correlations of an additional year of experience in both labor markets are relatively small, 0.1 to 0.2 percent, in the differences of the coefficients.

The last variable that was incorporated into the regression is experience-square, and in each area of the labor market, the coefficients of the experience-square are very small. However, the experience-square of the urban labor market is lower than that of the rural labor market. This suggests that the rural areas level off their return to experience faster than the urban area labor market.

For the controls, we already measured education and experience variables by accounting for graduation age and wage, thus this already picks up differences in the returns to education over time for different age cohorts.

There are also many limited assumptions to our experiment in this paper. First, the wage of the rural area labor market is estimated on a monthly basis. This, of course, does not reflect the reality as farmers or people in the agricultural sector often receive their wages seasonally. The quality of education workers obtain is also a big factor. In most of developing countries, a higher quality of education is often clustered in the urban area. This, of course, will make much difference in wage determinant. We also expected to include the land, agricultural, or wealth factors to reflect income in rural areas into the equation, but this was not possible with the limitation in the data we have. This is the reason why we only estimated wage instead of income.There are also many scopes in this area that this paper does not cover,and hopefully there will be further research conducted in this area, especially in Thailand.

Conclusion

Since Thailand, as an emerging country, has been in a period of highly rapid growth mostly in the urban area, there has been a dramatic difference between rural and urban area labor markets, resulting in a lack in uniformity of wage distribution across regions of the country. Therefore, as a result, wage structure was also not uniform across the country. This study provides the empirical evidences, based on the cross-section OLS regression of Mincerian wage equation that supports the significant correlations between education and experience on wage. The empirical results of this paper clearly indicate differing structures of wage determination in the rural labor market and urban labor market in Thailand; urban labor market wage is generally more responsive to an additional year of education and experience. Despite the greater responsiveness to education and experience for urban labor markets, the diminishing return to experience for urban labor markets is lesser than that of rural labor markets. The empirical results also demonstrate that an additional year of education has stronger correlations with percentage change in wage than an additional year of experience.

With only limited cross-sectional data, further research for the wage structure in Thailand is necessary. There are also other important factors, such as quality of education, internal referral job entry, or even other macro-economics factors that might have an effect on the wage structure that were not incorporated into this study.

Appendix A: Correlation Matrix

	wage	logwage	educat~n	experi~e	experi~2	age	approx~e
wage	1.0000						
logwage	0.6184	1.0000					
education	0.3154	0.6057	1.0000				
experience	0.0052	-0.0801	-0.5085	1.0000			
experience2	-0.0223	-0.1357	-0.5070	0.9564	1.0000		
age	0.1306	0.1435	-0.2108	0.9431	0.8938	1.0000	
approxgrad~e	0.3181	0.6013	0.9549	-0.5291	-0.5269	-0.2167	1.0000

Appendix B: OLS Results:

Source	SS	df	MS	Number of obs =	19099
				F(4, 19094) =	4189.39
Model	4489.59694	4	1122.39924	Prob > F =	0.0000
Residual	5115.55752	19094	.267914398	R-squared =	0.4674
				Adj R-squared =	0.4673
Total	9605.15446	19098	.502940332	Root MSE =	.5176

logwage	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.0992434	.0011395	87.09	0.000	.0970098	.101477
experience	.0421743	.0009772	43.16	0.000	.0402589	.0440896
experience2	-.00052	.0000184	-28.19	0.000	-.0005561	-.0004838
areaedu	.0129659	.0007517	17.25	0.000	.0114926	.0144392
_cons	7.320057	.0169825	431.04	0.000	7.28677	7.353344

Source	SS	df	MS	Number of obs =	19099
				F(5, 19093) =	3361.10
Model	4496.55198	5	899.310397	Prob > F =	0.0000
Residual	5108.60247	19093	.267564158	R-squared =	0.4681
				Adj R-squared =	0.4680
Total	9605.15446	19098	.502940332	Root MSE =	.51727

logwage	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.1014097	.0012155	83.43	0.000	.0990272	.1037921
experience	.0404177	.0010355	39.03	0.000	.038388	.0424475
experience2	-.0005124	.0000185	-27.72	0.000	-.0005487	-.0004762
areaedu	.0096399	.0009949	9.69	0.000	.0076898	.01159
areaexp	.0021156	.000415	5.10	0.000	.0013023	.002929
_cons	7.325072	.0169999	430.89	0.000	7.291751	7.358393

Source	SS	df	MS	Number of obs = 19099
				F(4, 19094) = 4131.02
Model	4456.05978	4	1114.01494	Prob > F = 0.0000
Residual	5149.09468	19094	.269670822	R-squared = 0.4639
				Adj R-squared = 0.4638
Total	9605.15446	19098	.502940332	Root MSE = .5193

logwage	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.1097223	.0009216	119.05	0.000	.1079159	.1115288
experience	.0415065	.000983	42.23	0.000	.0395798	.0434332
experience2	-.0005724	.0000189	-30.24	0.000	-.0006095	-.0005353
areaexp2	.0001076	8.22e-06	13.09	0.000	.0000915	.0001238
_cons	7.311872	.0170313	429.32	0.000	7.278489	7.345255

Source	SS	df	MS	Number of obs = 13305
				F(3, 13301) = 3974.44
Model	3268.06433	3	1089.35478	Prob > F = 0.0000
Residual	3645.67242	13301	.2740901	R-squared = 0.4727
				Adj R-squared = 0.4726
Total	6913.73675	13304	.519673538	Root MSE = .52354

logwage	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.1135118	.0010864	104.49	0.000	.1113824	.1156412
experience	.0417893	.0011981	34.88	0.000	.0394408	.0441378
experience2	-.0004816	.0000232	-20.79	0.000	-.000527	-.0004362
_cons	7.291493	.0202714	359.69	0.000	7.251758	7.331228

Source	SS	df	MS	Number of obs = 5794
				F(3, 5790) = 1166.60
Model	880.232602	3	293.410867	Prob > F = 0.0000
Residual	1456.23552	5790	.251508726	R-squared = 0.3767
				Adj R-squared = 0.3764
Total	2336.46813	5793	.403326105	Root MSE = .50151

logwage	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.0950991	.0017617	53.98	0.000	.0916454	.0985527
experience	.0408027	.0017019	23.97	0.000	.0374664	.0441391
experience2	-.0005572	.0000306	-18.23	0.000	-.0006171	-.0004973
_cons	7.414894	.0311825	237.79	0.000	7.353764	7.476023

Source	SS	df	MS	Number of obs = 19099
				F(4, 19094) = 4173.95
Model	4480.7638	4	1120.19095	Prob > F = 0.0000
Residual	5124.39066	19094	.268377012	R-squared = 0.4665
				Adj R-squared = 0.4664
Total	9605.15446	19098	.502940332	Root MSE = .51805

logwage	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
education	.1087266	.0009249	117.56	0.000	.1069138	.1105394
experience	.0421616	.0009781	43.11	0.000	.0402445	.0440787
experience2	-.0005157	.0000185	-27.94	0.000	-.0005519	-.0004795
area	.1344367	.008272	16.25	0.000	.1182228	.1506505
_cons	7.223852	.0173785	415.68	0.000	7.189789	7.257916

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