

THE ECONOMICS OF LUCKINESS: HOW CRAZY ARE MALAYSIAN CHINESE TOWARDS CAR PLATE NUMBER “8”?

HOCK-EAM LIM
WOEI-CHYUAN WONG
NUR ADIANA HIAU ABDULLAH
*School of Economics, Finance and Banking
Universiti Utara Malaysia*

Abstract

The Chinese society is well-known for its obsession towards number “8”. Eight is the luckiest number to the Chinese as its pronunciation resembles the meaning of prosperity, wealth or fortune. Prior research estimating the marginal effect of “8” on winning bid prices of car plate numbers attributes the positive impact of “8” on bid prices to superstitious value. However, the estimated positive effect could also be attributed to Veblen goods and future resale consideration. Thus, an upward bias might exist in prior research’s estimation. This study aimed to circumvent this issue by comparing the marginal effect of all “8” car plate numbers of Malaysian Chinese bidders and their non-Chinese counterparts who are neutral towards number “8”. Descriptive statistics results reveal that the majority of all “8” plates are won by Chinese bidders. However, regression results reveal that Chinese bidders have a lower estimated marginal effect of number eight than their non-Chinese counterparts. This implies that while number “8” is popular among the Chinese, this popularity does not translate into higher bidding prices. These findings suggest the roles of Veblen goods and future resale consideration should not be ignored in estimating the superstitious value in car plate numbers.

Keywords: Car plate number, Superstitions in number, Veblen good effect.

Introduction

The term superstition is derived from the Latin word of “*supersisto*” which literally means “the one who over-stands” or “the one who is not progressive” (Sharivastav & Kotnala, 2015). Based on a qualitative study, Delacroix and Guillard (2008) provided a comprehensive definition of superstitions: “*beliefs and/or practices that have no religious nor scientific foundations and which lead people to think that certain facts (external events or one’s own actions), or objects can bring good or bad luck, or be signs announcing positive or negative consequences*”. Superstitions are found to be linked with the external locus of control (Sagone and De Caroli, 2014), fear or anxiety (Wolfradt,

1997), ignorance (Krajewska-Kulak et al., 2011), religiosity (Torgler, 2003), confidence level and socio-economic status (Sharivastav & Kotnala, 2015), and socio-demographic factors such as gender (females tend to be more superstitious than males - see Dag, 1999).

Superstitious beliefs have been long rooted since the beginning of human civilizations. Despite the rapid progress in sciences and technology, superstitions still prevail in modern societies of various cultures (Sharivastav & Kotnala, 2015; Newport & Strausberg, 2001). The Chinese society is well known for its numerological belief. This is evidenced by the publication of the *Book of Changes* (Yijing) dated back to more than two thousand years ago, that provides an

in-depth analysis of numbers.¹ The odd numbers (1,3,5,7,9) are pre-described as forces of “Yang” (male), whereas the even numbers (2,4,6,8) are associated with the forces of “Yin” (female). The combination of “Yin” and “Yang” produces the Eight Diagrams and Five Elements that in turn, generate a system that harmonizes human beings with their surrounding environments.

Although the *Book of Changes* produces the first numerological analysis in Chinese society, Chinese superstitious belief in numbers is not based on this analysis. Lucky and unlucky numbers, according to the Chinese, are based merely on the pronunciation of these numbers. For example, number “4” that is pronounced similar to the word “death” is considered to be an unlucky number. The desire to avoid number “4” is manifested in the action of not labelling the “fourth” floor for hospitals in Taiwan (Lin, Lin, & Lee, 2014). This is to give a peace of mind to the staff, patients and their families that tend to associate number “4” with “death”.

On the other hand, the number “8”, the pronunciation of which carries the meaning of “prosperity, wealth, or fortune” is considered to be the luckiest number (Yau, 2015). The “craziness” of the Chinese towards number “8” could be seen from their willingness to pay for this number. Some of the examples are as follows: A phone number of 8888-8888 cost around USD350,000 to the Sichuan Airlines of China; the Chinese government launched the Beijing Summer Olympics at 8.08pm, 8 February; a Chinese driver paid RMB 1 million (around USD145,000) for the number plate 88888 to be used on his vehicle valued at just RMB 30,000 (around USD4,000) (Wang, 2016; Lim, Wong, & Abdullah, 2016). In Malaysia,

the frequency of number “8” appearing on a car plate is positively associated with winning bid prices (Wong, Abdullah, & Lim, 2017). Indeed, one could easily find numerous examples of the “craziness” of the Chinese towards number “8”.

The superstitious value of number “8” has been studied and is in the literature on car plate numbers and housing.² These studies refer to Fudenberg and Levine (2006) theoretical model to form their superstition hypotheses. Specifically, Fudenberg and Levine (2006) theorize that superstitious beliefs can persist if their probability of being exposed as untrue is sufficiently low. An empirical implication from this theory is that superstitious beliefs can persist and can affect human behaviour, hence pricing. The hedonic regression model is normally used to capture the impact of superstitions on prices where findings of the positive and significant impacts of number “8” on prices are interpreted as supporting evidence for superstitious beliefs. Ng, Chong, and Du (2010), Chong and Du (2008), and Woo et al. (2008) for instance, found that the occurrence of number “8” on a car plate has a positive and significant effect on the car plate winning bid prices in Hong Kong. Similar findings were found in Malaysia (Wong, Abdullah, & Lim, 2017). These authors relate the positive impact of number “8” on Chinese superstitious beliefs that welcome number “8” and avoid number “4”.

However, the positive and significant marginal effects of number “8” cannot be explained solely by superstition motives. Ng, Chong, and Du (2010) pointed out that lucky car plate numbers could also serve as Veblen good (also known as conspicuous good) for the buyers to signal their high income and greater social status. Furthermore, the positive impact of number “8” could be a manifestation of its future resale value. For example, used cars with lucky number plates, all else being equal, can be

¹ *Book of Changes*, is also known as “Yijing”. “Yi” literally means “changes” and “jing” means “books”. It is a classical book from the early history of China. Its origin can be traced back to the Bronze Age of the Zhou Dynasty in China. This book describes the endless transformation and dynamic changes of all things and situations in this world. The changes are presented in terms of hexagram transformation that consists of 64 combinations of numbers. See Nelson (2011) for a detailed discussion.

² In the housing literature, Bourassa and Peng (1999), Chau et al. (2001), Liu and Wong (2012) found evidences on the positive (negative) impact of house addresses that contained number “8” (“4”) on house prices in New Zealand, Hong Kong and Singapore, respectively.

sold at higher prices and in a shorter duration as compared to other used cars with normal plate numbers. Thus, due to the future resale consideration, a prospective bidder might be willing to pay more for a lucky plate number. In short, the positive and marginal effects of number “8” on prices could be attributed to three factors: superstitions, conspicuous good, and future resale consideration. There is a potential for an upward bias in estimating the value of superstitions if the other two factors are not properly controlled.

Previous studies used different model specifications to control the effect of conspicuous good and future resale consideration. For example, Ng, Chong, and Du (2010) estimated the models with 3-digit and 4-digit car plate numbers separately in order to control for conspicuous good and future resale consideration effects in estimating superstition value. These authors concluded that values of superstition in numbers are still prevalent among the Chinese society based on the positive and significant impact of lucky numbers (including number “8”) on winning bid prices. The conclusion is however, not convincing. This is because the Chinese who attach heavy emphasis on wealth accumulation and material possession are more likely to pay for the conspicuous and resale consideration effects in lucky plate numbers rather than to satisfy their superstitious belief. The primitive superstition (i.e. a total belief on the mistaken causal link between two independent events such as the possession of number “8” will bring good fortune) postulated by Delacroix and Valerie (2008) does not fit the Chinese living in a modern society.

In this context, the positive and significant effects of Veblen good and future resale consideration could be mistaken as the value of superstitions. Thus, it is imperative to evaluate the potential upward bias efficiently. The statistical control approach that was employed by previous studies could be efficient if all the major factors that influence pricing are taken into consideration together with their interactive effects. Omission of any of the major factors will lead to an upward bias in the estimated superstition value.

In this paper, we shed more light to this line of literature by proposing a “natural experimental” approach that provides a better control on the upward bias in superstition value. By doing this, we are able to provide a better estimation for the value of superstitions.

The Malaysian car plate auctioning market provides a natural experiment to distinguish the impact of superstition from non-superstition (conspicuous and resale) effects. Malaysia’s three main ethnic groups (Chinese, Indian and Malay) allow us to compare the Chinese and non-Chinese bidders’ preferences and willingness to pay for number “8”. For the Chinese, number “8” is considered as the luckiest number; whereas the Malays and Indians treat number “8” as a neutral number. This would mean for the Malays and Indians, their willingness to pay more for number “8” should be purely due to the effect of conspicuous consumption and resale consideration. Thus, the Chinese bidders could serve as the “treatment” group while the non-Chinese (Malay and Indian) are the “control” group in examining the superstition value in number “8”.

Data and Methodology

Data

The data used in the present study were collected from the first-price sealed bid auction of the Malaysian Road Transportation Department (Jabatan Pengangkutan Jalan Malaysia, JPJ). The auction is used for bidders to bid for the selected special car plate numbers which are divided into three categories. First, the golden numbers that consist of numbers 1 to 10 with a reserve price of RM10,000. Second, the attractive numbers that consist of 37 selected numbers with a reserve price of RM1,000. Third, the popular numbers that consist of 414 selected numbers with a reserve price of RM300. The other non-special car plate numbers are sold at RM300 on a first come first served basis over the counter (no bidding).

Altogether, the data consisted of 10,834 winning bid results in the states of Kedah and Penang in

Malaysia, between the years 2011 and 2013. We observed the plate number, the auction year, the winning bid price and the bidders' profiles such as race, age and gender. Table 1a and 1b provide the sample characteristics. Chinese winning bidders consisted of more than half (54.99%)

of the sample. This was followed by the Malays (41.21%) and Indians (3.80%). The average age of the winning bidders was 40 years old and more than half of them (66%) were males. The average winning bidding price was RM2219.36.

Table 1a

Sample Characteristics I

	Freq	%
Malay	4497	41.21
Chinese	6001	54.99
Indian	415	3.80
TOTAL	10913	100

Table 1b

Sample Characteristics II

	Mean	Std Dev.
Reserve price (R)	901.61	1927.69
Bid price (B)	2219.36	6121.76
Premium (B-R)	1334.37	4665.58
Age	40.02	11.29
Male	0.66	0.47

Methods

The comparative approach was used to estimate the Chinese's superstition value in number "8". The Chinese sub-sample (who treat "8" as the luckiest number) is compared to the Malay and Indian sub-samples (who treat eight as a neutral number). We computed the bid premium for each winning bid by taking the difference between the winning bid price and the reserve price. For the Chinese sub-sample, the price premium in number "8" could be attributed to the three sources of premium discussed earlier (superstitions, conspicuous good and future resale consideration); for the Malay and Indian sub-samples, it could be attributed to conspicuous

good and future resale consideration but not superstitions.

Descriptive and econometrics analysis were applied into the three sub-samples (Chinese, Malay and Indian). Descriptive analysis was employed to provide a preliminary analysis on the bid premium paid to number "8". Econometrics analysis was then used to estimate the marginal effects of number "8" on the winning bid premium. We focused our analysis on four types of all "8" plates, i.e. one digit (e.g. PKH8), two digits (PKH88), three digits (PKH888), and four digits (PKH8888). The control variables included in the regression were bidders' gender and age. The Tobit model was employed because of the lower censoring point at RM300 (reserve price).

Results and Analysis

Descriptive statistics analysis

Table 2 presents the summary statistics for reserve price, bid price, bid premium, bidder’s age and bidder’s gender segregated by the bidder’s ethnicity. Overall, the Chinese and

Indian bidder’s exhibit a substantially higher winning bid price and bid premium than their Malay counterparts. The average bidder’s age is almost similar across the ethnic groups. In terms of gender, Indians are found to have the highest percentage of male bidders (72%).

Table 2

Descriptive Statistics

	Chinese	Malay	Indian
Reserve price (R)	1019.80	729.91	1016.87
Bid price (B)	2584.82	1696.70	2551.70
Bid premium (B-R)	1584.68	979.16	1554.51
Age	40.47	39.47	39.50
Male	0.64	0.68	0.72

Table 3 presents the frequency of all “8” plates by bidder’s ethnicity. The proportion of Chinese bidders for all “8” plates which range from 68.09% to 78.26% is significantly higher than their sample mean of 55%. This finding

highlights the popularity of number “8” among Chinese bidders in our sample. The proportion of Chinese and non-Chinese bidders is however, more balanced for other non-all “8” plates at a ratio of 55:45.

Table 3

Frequency of All “8” Plate Numbers

	Overall		Chinese		Malay		India	
	freq.	%	freq.	%	freq.	%	freq.	%
All “8” plate numbers								
One-digit (8)	48	100	37	77.08	9	18.75	2	4.17
Two digits (88)	50	100	38	76.00	11	22.00	1	2.00
Three digits (888)	46	100	36	78.26	9	19.57	1	2.17
Four digits (8888)	47	100	32	68.09	11	23.40	4	8.51
Other plate numbers	10732	100	5858	54.58	4457	41.53	407	3.79

In terms of the willingness to pay, the bid price and bid premium were cross-tabulated by bidders’ ethnicity and the types of all “8” plates. The results are as shown in Table 4. On average, Chinese bidders paid a higher bid premium (or bid price) for three-digit (888) plates as

compared to non-Chinese bidders. However, the bid premium paid by the Chinese bidders was found to be the lowest for the one digit (8) and two digit (88) plates. On the other hand, the Malays had the highest bid (or bid price) for four digit (8888) plates; and the Indians had the

highest premium paid on the one digit (8) and two digit (88) plates. Thus, it is found that the Malay and Indian bidders who do not hold any superstitious belief towards number “8” were

in fact paying more for this number than their superstitious Chinese counterparts (except in the three-digit [888] plates).

Table 4

Age, Gender and Prices by “Eight” (8)

	All “eight” (8) in the car plate number				Other plate numbers
	one digit (8)	two digits (88)	three digits (888)	four digits (8888)	
Chinese					
Bid price (B)	26646.14	11452.58	5644.89	4085.56	2348.32
Premium (B-R)	16646.14	9452.58	3644.89	2085.56	1421.44
Age	39.81	43.00	40.11	41.75	40.45
Male	0.68	0.68	0.58	0.72	0.64
Malay					
Bid price (B)	26878.67	12134.36	5433.33	4896.00	1604.65
Premium (B-R)	16878.67	10134.36	3433.33	2896.00	914.11
Age	41.89	40.91	44.56	41.36	39.44
Male	1.00	0.82	0.89	0.82	0.68
Indian					
Bid price (B)	32750.50	12800.00	5510.00	3875.00	2357.85
Premium (B-R)	22750.50	10800.00	3510.00	1875.00	1418.00
Age	52.00	34.00	18.00	41.25	39.49
Male	0.50	1.00	1.00	0.75	0.71

In short, results of the descriptive analysis show that the Chinese bidders won most of the all “8” plates. However, the premium paid by the Chinese bidders was lower than the Malay and Indian bidders (except for the three-digit [888] plates). There are Malay and Indian bidders who paid higher premiums for number “8” than the Chinese bidders. To gain further insight into this disparity in willingness to pay for number “8”, the marginal effects of number “8” among the Chinese, Malays and Indians are estimated and compared in the following section.

Regression analysis

Table 5 presents the estimated Tobit models (bid premium as the dependent variable) for the sub-samples of Chinese, Malay and Indian bidders.

Please refer to Appendix 1 for the details of the estimated models. Statistically, the estimated models are found to be fit with the sample as shown by the p-values that are almost equal to zero for the overall fit tests. In Table 5, the estimated marginal effects of number “8” are found to be positive and significant across the three sub-samples (Chinese, Malay and Indian). Among the four types of all “8” plates, one digit (8) has the largest marginal effect. This is followed by the two digits (88), three digits (888) and four digits (8888). The differences in marginal effect are consistent with the conspicuous consumption effect where lower digit plates, due to their rarity and uniqueness (signal of high social status), tend to command higher prices.

Comparing the marginal effect of all “8” plates across the three sub-samples (by bidders’ ethnicity), it is found that the Indian sub-sample has the largest marginal effect in the one digit (8), two digits (88) and three digits (888) plates. The Malay sub-sample has the largest marginal effect in the four digits (8888) plates. Surprisingly, the marginal effect of the Chinese sub-sample is

found to be lower than the other ethnic groups. The Hausman tests reveal the differences in the estimated marginal effect (between the Chinese and the Malays and between the Chinese and the Indians) are significant at the 1% level (see Table 5). Thus, Chinese bidders do not pay a higher premium for all “8” plates than the Malay or Indian bidders.

Table 5

The estimated Tobit Models

	Chinese		Malay		Indian	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
All “8” plate numbers						
One digit (8)	15928.74***	0.000	16386.66***	0.000	21829.10***	0.000
Two digits (88)	8670.01***	0.000	9736.05***	0.000	10426.20***	0.000
Three digits (888)	2773.56***	0.000	2599.57***	0.004	4216.90***	0.000
Four digits (8888)	1078.51***	0.007	2479.81***	0.000	1345.60**	0.020
Age	19.36***	0.004	39.33***	0.000	67.54**	0.048
Male	401.09***	0.006	303.38***	0.010	1336.36**	0.017
Cons	-324.44	0.277	-1458.92***	0.000	-3259.04*	0.053
1. Obs	5941		4452		410	
2. Overall fit test (p-value)	0.000***		0.000***		0.000***	
3. Hausman test on coeff. diff. (p-value)						
Chinese vs Malays	0.000***		0.000***		0.000***	
Chinese vs Indians	0.000***		0.000***		0.000***	

In order to evaluate the nonlinear (quadratic) effect of the age variable on the bid premium, we re-estimate the models in Table 5 with the presence of age and age squared (see Appendix 2). There are no noticeable changes to the estimated coefficient of all “8”-plate variables and gender. However, the age variables (age and age squared) turn insignificant when they are included in the models. This might be due to the multicollinearity between age and age squared as indicated by the values of VIF that are more than 10 and the significance of the restriction test on age and age squared.

DISCUSSIONS AND CONCLUSION

This paper aimed to estimate the superstition value of the Malaysian Chinese to number “8” using a comparison approach. The existence of Chinese, Malay and Indian ethnicities that do not share common preferences toward number “8” provide a natural experiment to estimate the Malaysian Chinese superstition value. Chinese are found to win most of the auctioned all “8” plates (68%-78%). This finding indicates the popularity of number “8” among Chinese bidders in our sample. However, the obsession

towards number “8” by the Chinese bidders does not translate into a higher winning bid premium as compared to non-Chinese bidders. The estimated marginal effects for all “8” plates reveal that the Chinese bidders are in fact paying a significantly lower bid premium than the Malay and Indian bidders. Thus, our findings do not support anecdotal evidences which showed Chinese bidders to be “crazy” (irrational/superstitious) about number “8”. This finding has one important implication, that is, the effects of conspicuous good and future resale consideration for number “8” are lower for the Chinese than the Malays or the Indians. One plausible explanation is that the Malay or Indian bidders could have overvalued the effects of conspicuous good and the resale prospect of number “8” plates, or it could be that the Chinese bidders have undervalued the effects. The role of conspicuous good and future resale consideration should not be ignored in estimating the superstition value of a number eight car plate. There is an important caveat to the above findings. In estimating the value of superstitions, due to data limitation, the estimated model could only control bidders’ demographic variables (age and gender). Other variables such as employment status, educational and family background, are ignored. It is suggested that future research should explore more into this limitation.

Acknowledgement

We would like to thank the Ministry of Higher Education Malaysia and Universiti Utara Malaysia for providing financial support for this study through the Fundamental Research Grant Scheme (S/O Code: 13018). Our gratitude is also extended to the anonymous referee whose comments have improved this paper substantially.

References

Bourassa, SC, & VS Peng. (1999). Hedonic prices and house numbers: The influence of feng shui. *International Real Estate Review*, 2(1), 79-93.

- Chau, KW., VSM Ma, & DCW., Ho, D. (2001). The pricing of luckiness in the apartment market. *Journal of Real Estate Literature*, 9(1), 29-40.
- Dag, I. (1999). The relationships among paranormal beliefs, locus of control and psychopathology in a Turkish college sample. *Personality and Individual Differences*, 26, 723-737.
- Delacroix, E., & Guillard, V. (2008). Understanding, defining and measuring the trait of superstition. Online paper. Retrieved from https://www.researchgate.net/publication/41221415_Understanding_defining_and_measuring_the_trait_of_superstition
- Krajewska-Kulak, E., Kulak, W., Radziejawski, P., Rozwadowska, E., Lankau, A., Kowalewska, B., Kondzior, D., Szyszko-Perlowska, A., Krajewska-Ferishah, K., Ortman, E., & Moczydlowska, A. (2011). Current view of traditional superstitions in general population of Podlaskie province. *Progress in Health Sciences*, 1(2), 76-83.
- Long, S. (1997). *Regression models for categorical and limited dependent variables*. Advanced Quantitative Techniques in the Social Sciences Number 7. Sage Publications: Thousand Oaks, CA.
- Lim, H. E., Wong, W.C., & Abdullah, N.A.H. (2016, January). *The economics of luckiness among Chinese in Malaysia: What is the value of superstition in car plate number of “8”?* Paper presented at the Asian American Conference for Academic Disciplines 2016, Singapore.
- Lin, F-Y., Lin, H-R., & Lee, T-Y. (2014). Workplace beliefs about luck among Taiwanese nurses. *Journal of Nursing*, 1, 1-7.
- Liu, H., & WK., Wong. (2012). *Can superstitious beliefs affect market equilibrium? Personal beliefs and beliefs about others*. Working paper, National University of Singapore.
- Nelson, S. E. (2011). The Yijing and philosophy: From Leibniz to Derrida. *Journal of Chinese Philosophy*, 38 (3), 377-396.
- Newport, F., & Strausberg, M. (2001).

- Americans' belief in psychic and paranormal phenomena is up over last decade.* Princeton: Gallup News Service.
- Ng, T., Chong, T., & Du, X. (2010). The value of superstitions. *Journal of Economic Psychology, 31*(3), 293-309.
- Sagone, E., & De Caroli, M. E. (2014). Locus of control and beliefs about superstition and luck in adolescents: What's their relationship? *Procedia – Social and Behavioral Sciences, 140*, 318-323.
- Sharivastav, M., & Kotnala, A. (2015). Psycho-social factors contributing to superstitious behaviour: Literature review. *International Journal of Research – Granthaalayah, 3*(5), 42-47.
- Skinner, B. F. (1948). Superstition in the pigeon. *Journal of Experimental Psychology, 38*, 168-172.
- Torgler, B. (2003). *It is about believing: Superstition and religiosity.* Working paper No. 2003-10. Basel: Center for Research in Economics, Management and the Arts (CREMA).
- Wang, S. (2016). Driver pays 1 million RMB for 'lucky' 88888 license plate, gets pulled over 8 times in one day. Shanghaiist Online News, Jun 29, 2016. Retrieved from http://shanghaiist.com/2016/06/29/lucky_license_plate_backfires.php
- Wang, A. (2011). Superstition still widespread in high-tech Asia. AsiaOne News, Feb 27, 2011. Retrieved from <http://news.asiaone.com/News/Latest+News/Asia/Story/A1Story20110227-265543.html>
- Wolfradt, U. (1997). Dissociative experiences, trait anxiety and paranormal beliefs. *Personality and Individual Differences, 23*, 15-19.
- Wong, W. C., Abdullah, N. A. H., & Lim, H. E. (2017, May). *Malaysian Chinese superstitions value: Evidence car plate auctioning.* Paper presented at the 19th Malaysian Finance Association Conference. Perak, Malaysia: Universiti Tunku Abdul Rahman (UTAR).
- Yau, H. T. A. (2015). To be or not to be superstitious – that's the question. *Procedia – Social and Behavioural Sciences, 208*, 5-12.

APPENDIX 1
THE ESTIMATED MODELS

Chinese

Tobit regression Number of obs = 5941
F(6, 5935) = 123.03
Prob > F = 0.0000
 Log pseudolikelihood = -50337.085 Pseudo R2 = 0.0041

premium	Coef.	Robust Std. err.	t	P> t	[95% Conf. interval]	
eight18	15928.74	866.4282	18.38	0.000	14230.22	17627.25
eight28	8670.007	466.6454	18.58	0.000	7755.212	9584.802
eight38	2773.559	463.6729	5.98	0.000	1864.591	3682.527
eight48	1078.507	400.0029	2.70	0.007	294.356	1862.658
age	19.36237	6.776112	2.86	0.004	6.078722	32.64601
male	401.0939	146.7023	2.73	0.006	113.504	688.6839
_cons	-324.4424	298.7011	-1.09	0.277	-910.0051	261.1204
/sigma	5478.588	382.363			4729.017	6228.158

Obs. summary: 995 left-censored observations at premium<=0
 4946 uncensored observations
 0 right-censored observations

Malay

Tobit regression Number of obs = 4452
F(6, 4446) = 59.01
Prob > F = 0.0000
 Log pseudolikelihood = -35984.939 Pseudo R2 = 0.0034

premium	Coef.	Robust Std. err.	t	P> t	[95% Conf. interval]	
eight18	16386.66	1462.314	11.21	0.000	13519.79	19253.52
eight28	9736.05	839.7853	11.59	0.000	8089.653	11382.45
eight38	2599.572	906.6011	2.87	0.004	822.1828	4376.962
eight48	2479.809	404.1195	6.14	0.000	1687.533	3272.084
age	39.33135	6.504148	6.05	0.000	26.57998	52.08271
male	303.3831	117.4073	2.58	0.010	73.20633	533.56
_cons	-1458.919	280.2993	-5.20	0.000	-2008.445	-909.3925
/sigma	4225.333	409.9475			3421.632	5029.034

Obs. summary: 829 left-censored observations at premium<=0
 3623 uncensored observations
 0 right-censored observations

Indian

Tobit regression Number of obs = 410
F(5, 404) = .
Prob > F = .
 Log pseudolikelihood = -3365.9825 Pseudo R2 = 0.0052

premium	Coef.	Robust Std. err.	t	P> t	[95% Conf. interval]	
eight18	21829.1	2572.315	8.49	0.000	16772.3	26885.89
eight28	10426.2	279.7837	37.27	0.000	9876.189	10976.22
eight38	4216.9	720.9009	5.85	0.000	2799.715	5634.086
eight48	1345.601	575.6421	2.34	0.020	213.9733	2477.229
age	67.5436	34.05146	1.98	0.048	.6034363	134.4838
male	1336.358	558.9089	2.39	0.017	237.6253	2435.091
_cons	-3259.043	1676.219	-1.94	0.053	-6554.245	36.15813
/sigma	6329.841	1670.478			3045.926	9613.755

Obs. summary: 85 left-censored observations at premium<=0
 325 uncensored observations
 0 right-censored observations

APPENDIX 2

THE ESTIMATED MODELS WITH AGE AND AGE SQUARED

	Chinese	Malay	Indian
	Coeff.	Coeff.	Coeff.
All "eight" (8) in:			
one digit (8)	15919.16***	16404.55***	21637.18***
two digits (88)	8676.29***	9744.47***	10452.82*
three digits (888)	2761.52***	2602.08*	4028.17
four digits (8888)	1113.19	2493.36*	1365.78
age	61.37	20.03	32.23
age squared	-0.49	0.23	0.42
male	402.87***	302.17***	1335.93*
_cons	-1164.29	-1089.3	-2570.43
Obs	5941	4452	410
Overall fit test (p-value)	0.000***	0.000***	0.000***
Hausman test on coeff. Differences (p-value):			
Chinese vs Malays	0.000***	0.000***	0.000***
Chinese vs Indians	0.000***	0.000***	0.000***
VIF	1 to 35.12	1 to 38.61	1 to 50.90
Restriction test (age and age squared)	0.0052***	0.0000***	0.0731*