

Does Franchising strategy promote business growth? - Based on an unbalanced panel

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Abstract—This paper studies the system of franchising enterprises and uses franchising as a growth strategy to achieve business growth effects. Our growth model is as a starting point for research, the China 2008 to 2011 the franchise hundred data collection gets unbalanced panel, and then we estimate and test the panel model. The results show that franchising strategy for business growth has a significant positive effect. A related finding is that the internal conditions such as pre-scale enterprise and single-store average sales growth of the enterprise have significant negative effects.

Keywords- franchising strategy; business growth; Panel Data

I. INTRODUCTION

"Franchise" is into China in the late 1980s, after the introduction, absorption and rapid development these three stages; the franchise has an important position (Wang, Zhu, and Terry in today's business model, 2008). This paper is based on China Franchise hundred empirical data expansion franchise and business growth effects.

II. THE MODEL

To assess the effect of the franchise in the business growth process, the paper conditions of use empirical analysis of convergence growth model, which is commonly, used models and methods of literature (Sen, 1998; Dant, Kacker, Coughlan, and Emerson, 2007). we will use he two front model to test following assumptions:

$$\dot{y}_{it} = \beta_1 \dot{x}_{it} + \beta_2 y_{i,t-1} + \beta_3 z_{it} + u_{it} \quad (1)$$

Where y_{it} is the i -th enterprise growth rate at time t

$$\dot{y}_{it} = \log(\text{total outlets}_{i,t}) - \log(\text{total outlets}_{i,t-1})$$

x_{it} is the business franchise growth of i at time t of a

$$\dot{x}_{it} = \log(\text{franchised outlets}_{i,t}) - \log(\text{franchised outlets}_{i,t-1})$$

$y_{i,t-1}$ is the initial scale of i at time t ,

$$\dot{y}_{i,t-1} = \log(\text{total outlets}_{i,t-1})$$

The average sales companies in the i -th time t ,

$$z_{i,t-1} = \log(\text{average sales of outlets}_{i,t-1})$$

Double logarithmic normal distribution is used to model error approach. The model error term:

$$u_{it} = \eta_i + \varepsilon_{it} \quad (2)$$

η_i is the individual effect of enterprise unrecognized,

ε_{it} has role in the whole business impact. Equation (2) ignores the time effect. Given the importance of the error terms of the model, we give the corresponding discussion below, for more details you can refer to the relevant materials (Hisao, 2003; Green, 2003; Wooldridge, 2002).

Growth model (1) uses a measure of the number of head office business growth, increase in the number of stores use to measure the effect of the use of franchising. You can also use the sales, and other indicators to measure the amount of capital growth, but the growth rate of the number of head office is better robustness of these indicators and the growth rate is of the number of stores (Martin and Justis, 1993; Blair and Lafontaine, 2005; Dant, Kacker, Coughlan, and Emerson, 2007). Of course, the exact proportion of the new increase in the number of franchise headquarters is more reasonable, but so far, you can not get from any official sources to the information. Percent change, some researcher's measure uses the franchise franchising strategy (Lafontaine, 1992; Sen, 1998) model (1) the use of proxy variables franchise is growth in the number of stores, the purpose is to make the choice of variables and. model structure coincide.

From the perspective of the panel data econometrics, model (1) of the data generation process and its variance structure (2) are very important (Green, 2003, Chap.13) model (1) assumptions are: 1) assumption of linear model about parameter β_k , $k = 1, 2, 3$ is a linear relationship; 2) sectional observational independence assumption is independent observation of various enterprises, but at the time of observation of each enterprise may not be independent; 3) strictly exogenous, the impact of heterogeneity and the error term ε_{it} is explanatory variables in the past, present and future η_i are irrelevant and not related to the individual effects term; variance structure 4) with the variance of the error term it is no serial correlation. If the relevant explanatory η_i variable, the

model (1) is a fixed-effects model; if η_i is not associated with the explanatory variables, the model (1) is a random-effects model; if the model (1) of the panel data structure does not hold, then the model (1) is mixed-effects models.

We can be applied ordinary least squares estimation of mixed effects model, and observe whether there are effects inspection panel. The null hypothesis of the test is a class F-test, all companies share the same intercept; alternative hypothesis is the presence of variation of these intercepts. F test is to compare the least squares dummy variable regression sum of squares, and there is no dummy variable regression sum of squares. If the F statistic significant, we can not reject the panel effects. The main difference between the random effects model and the fixed effects model is the individual effect, which is correlated with the error term. We can carry out the existence of random effects Hausman test. Hausman test compares the estimated amount of the random effects model and a fixed effects model (Hausman and Taylor, 1981). Under the null hypothesis of random effects, these two estimators are consistent estimator, one may be more effective. In the alternative hypothesis, the two types of estimators in a class become a more effective non-uniform, but it is not so efficient and estimator is still consistent. Therefore, if the null hypothesis was established, two types of estimators will be very similar; on the contrary, the difference represents the estimated amount of the two types of null hypothesis rejected. Large Hausman statistic means reject the original hypothesis.

III. THE DATA

Unbalanced panel data set is used in this study data, including 181 companies from 2008 to the point in 2011, a total of 460 observations. The main source of data is the 2008 to 2011 China Franchise hundred enterprises; it is obtained by the China Chain Store Franchise Association (CCFA) for the survey conducted by our franchise business. CCFA form when first released, the ranking is 100. From 2009 onwards, there are 120 arranged in the standings, but it retained the 100. China Franchise hundred (2008-2011) reports cover all sectors of thousand dollars, a variety of franchise sales and franchise head office count number. In 2011, after 11 departments include retail, food and non-food retail, restaurant industry, hotel industry, education services, dry cleaning industry, home decoration, car service, fitness and other formats. The dataset contains various departments are from each franchise business information, but not like most other studies that focused on the restaurant industry. This means we can be more effective, more accurate to once again examine the relationship between the franchise and business growth. We need specify that each year the franchisor did not remain stable, which means that not all businesses throughout 2008 to appear on the 2011 rankings.

Table (1) shows the descriptive statistics 460 observations herein constitute samples. Table (1) can be found, the franchisor retains about 21% of the operated stores, and franchise licensees retain approximately 79%. These data Lafontaine and Shaw (2005) the result is very close to, respectively, 20% and 80%.

Table 1: Descriptive Statistics

	Mean	Standard Deviation	Minimum	Maximum
Million Yuan Sales	262.61	758.07	1.25	6831.68
Number of Franchised	1023.39	4933.24	4.00	101261
Number of Company-owned	166.15	412.34	0.00	4246
Total Outlets	1189.54	5008.84	14	102470
Percent Franchised	0.79	0.22	0.03	1

Table 2. The effect of Franchising on Firm Growth(No. observation 460)

Model	Variable	Estimates	Standard Error	T Statistics	Specification Test	R2
Pool Effect	Intercept	0.35	0.11	3.21 (0.00)	651.65 (0.00)	0.66
	μ_1	0.59	0.03	21.62 (0.00)		
	μ_2	-0.01	0.01	-1.13 (0.26)		
	μ_3	-0.04	0.01	-3.78 (0.00)		
Fixed Effect	μ_1	0.29	0.04	7.12 (0.00)	2.61 (0.00)	0.57
	μ_2	-0.31	0.05	-5.78 (0.00)		
	μ_3	-0.16	0.04	-3.88 (0.00)		
Random Effect	Intercept	0.47	0.14	3.45 (0.00)	89.28 (0.00)	0.64
	μ_1	0.56	0.03	20.05 (0.00)		
	μ_2	-0.02	0.02	-1.45 (0.15)		
	μ_3	-0.05	0.01	-3.80 (0.00)		

IV. THE ESTIMATION AND TESTING

In order to estimate the impact on the business development of the franchise, paper selects 2008-2011 annual Chinese statistics chartered one hundred and subsequent analysis and uses statistical software program R2.14 (Team, 2012) and PLM package (Croissant and Millo, 2008). Economic analysis in this article, select a log-log form to make residual error as a normal distribution.

Under business-related assumptions, equation (1) can be properly said the least squares estimates. Polling effect problem is that it ignores the invisible but will cause the Company's special individual impact of uncertainty. If you can not be estimated by the control, parameter estimation because of omission errors becomes inconsistent. To avoid this problem, we use a fixed sample data argument. Fixed sample data can affect the control of the individual. He can also be achieved using more and more free observation angle. Typically homogeneity of variance test was used to influence the polling section and fixed effects model and selection of the most appropriate model. Hausman test is also calculated to compare the fixed effects model and random effects models.

Prediction after this article, we have a special impact on the company by controlling for other potential determinants and preferences. In the table (2), we show the poll results, the estimated results of the fixed effects model and random effects model. After the empirical analysis, polls show effects model, franchising and corporate development was positively correlated, but statistically significant 0.01 levels. After the control variables, reduce the number and average unit single-store sales, including the expected signs in the TH model. However, at the 0.10 level, reducing the number of single-store is not obvious. Homogeneity of variance test results shows that the polling-effects model is not applicable.

In the random effects model, the franchise got its expected (positive) sign, and at 0.10 levels significantly it promoted the development of the company. Lower skilled single store, not obvious at 0.10 levels, while the average single-store sales at 0.10 level is a significant impact. Horsman experiments show that it is relative to the random effects model, fixed effects model is more appropriate.

In the fixed effects model, all variables are at 0.1 constituency was statistically significant in the expected results. Homogeneity of variance test results table people fixed effects model is more perfect than the polling effect model. Although this method is of fitness, $R^2 = 0.57$, than rotation effects model (0.57) and random-effects model (0.57) is lower.

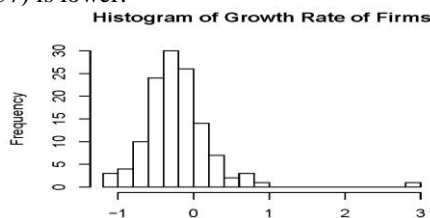


Fig 1: Histogram of Fixed effects of 181 Firms

Figure 1 shows the fixed effects model 181 companies. From Figure 1, we can see that the business development rate (-1, 1), within a few obvious deviation from the normal direction of outliers in this period. The average fixed effect is -0.21, the median is the fixed effect of -0.26. One company got a very high growth rate (2.93). Send abnormal data (deviation exceeds 2), the mean and median of -0.24 and -0.27, respectively. Overall, the growth rate of China's franchise system is reduced rather than increased.

V. CONCLUSIONS

Since the 1980s, the franchise in China has achieved remarkable growth. This paper companies from standard data analysis and found that franchising and business growth in China is closely related to the franchise system. Franchise by providing financial capital and management skills help companies overcome growth constraints obstacles. The article also shows business growth by growth strategies, especially in the past affect the size of the previous period and the current period of the average single-store sales. Although the relationship between franchising and business growth has been discussed in the West, it is a new franchise Chinese problem. There is no doubt that to deepen the study of the properties of the franchise will contribute to a better understanding of the Chinese and international franchising.

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