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The determinants of dealership structure: Empirical analysis of the Chinese auto market

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ABSTRACT

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This paper investigates the factors that affect manufacturers' decisions to grant local monopoly to a dealer and the factors that determine the dealer's status of sole dealership in the Chinese automobile market. Our empirical findings suggest that manufacturer decisions depend on dealers' retail network: manufacturers are inclined to choose a sole dealer for their brands if that dealer also has retail outlets for substitute brands in the local market and to choose multiple dealers otherwise. These findings can be explained by the theory proposed by [Mathewson, G. F., Winter, R. A., 1994. Territorial restrictions in franchise contracts. Economic Inquiry 32 (2), 181–192.], who suggest that manufacturers transfer the exclusive right of resale from themselves to dealers only if dealers' contribution is crucial to the vertical relationship. When dealers also have extensive retail channels for other brands, their retail efforts and experience become crucial to brand success, and thus manufacturers are more likely to offer them sole resale rights. Moreover, our empirical findings suggest that manufacturers also consider product quality and market conditions when making their decisions. *Journal of Comparative Economics* **000** (2016) 1–21. Department of Decision Sciences & Managerial Economics, Chinese University of Hong Kong, Hong Kong, China; School of International Business Administration, Shanghai University of Finance and Economics, China.

1. Introduction

The Chinese auto market has expanded at an astonishing rate over the past decade. Sales of passenger vehicles in China surpassed those in the U.S. in 2009, making China the world's largest auto market. The resale sector has made great contributions to the success of the Chinese auto industry, and thus has attracted considerable research attention. However, it remains unclear how manufacturers distribute their brands to auto dealers to successfully diffuse them in a new market and expand in an existing market.

Manufacturers play a leading role in determining the automobile retail structure because of their dominant position in their relationships with dealers, which is governed by regulation. In 2005, the Measures for Implementing the Administra-

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tion of Brand Sales of Automobiles (hereafter, the Measures),[1] and the Automobile Trade Policy (ATP)[2] were promulgated to regulate business between manufacturers and dealers. These regulations stipulate that general distributors or brand dealers cannot be registered until they obtain written authorization from automobile manufacturers or suppliers (including automobile manufacturers and general distributors).[3] Moreover, authorized distributors can only "distribute specific brands of automobiles,"[4] and "their store name, logo and trademark used must be consistent with those authorized by the automobile supplier" (Item 3, Article 9 of the Measures). These regulations require dealers to make specialized investments in brands, thereby granting manufacturers the dominant position in the manufacturer-dealer relationship. That position allows manufacturers to make strategic decisions on dealership structure to ensure that dealers serve them well. They can dampen intra-brand competition and award monopoly profits to a sole dealer to encourage specialized investment from that dealer *if* they believe dealers' resale efforts are crucial to their brands. Otherwise, they can introduce intra-brand competition and take away monopoly profits to compensate for their own resale efforts.

This paper investigates the dealership structure in the Chinese automobile markets to determine under what circumstances manufacturers dampen competition among dealers. We take into account the heterogeneity of both manufacturers and dealers. One important heterogeneous feature of dealers is the status of their retail channels, that is, whether they have retail outlets for substitute brands in the focal market. This has a significant effect on manufacturers' decisions, as it determines the role of dealers in their relationships with manufacturers. When dealers have extensive retail channels for a variety of brands, their retail efforts and experience are crucial to brand success, and thus manufacturers are more likely to authorize them to have sole resale rights. Dealers' retail networks are determined by market conditions, which can also affect manufacturers' choices. To solve the endogeneity problem with dealers' status, we apply a bivariate probit model to analyze the determinants of dealership structure. Specifically, this empirical framework recursively models dealers' choice of whether to carry substitute brands and manufacturers' choice of whether to dampen intra-brand competition given dealers' brand choice status. Our empirical findings suggest that macroeconomic conditions such as population and income play significant roles in manufacturers' dealership structure decisions. More importantly, a manufacturer is inclined to introduce competition among dealers if those dealers serve the manufacturer alone. One possible explanation for this finding is in line with Mathewson and Winter (1994)'s suggestion that manufacturers transfer exclusive resale rights from themselves to dealers only if dealers' contribution is crucial to the vertical relationship.

Most previous research discusses the rationale behind a vertical structure rather than its determinants. Among the studies in this area, Dixit (1983), Mathewson and Winter (1983), Mathewson and Winter (1984) investigated the social and private incentives for vertical restraints. Many theoretical papers have also analyzed the welfare effect of a vertical structure (e.g., Lin, 1990; Bernheim and Whinston, 1998; Martimort, 1996. Other studies have sparked a debate over whether some specific vertical structures or restraints are anticompetitive Telser (1960); 1990); Mathewson and Winter (1984); Rey and Tirole (1986); Tirole (1988); Rey and Stiglitz (1995)). Empirical work on vertical structures is rare, with most such research focusing on the competitive and anticompetitive effects of certain restraints. Asker (2016) examines whether exclusive dealing contracts in the Chicago beer market in 1994 led to foreclosures. His empirical findings suggest that exclusive dealing does not induce a foreclosure effect, and thus that intervention into exclusive dealing arrangements results in a welfare loss. Sass (2005) reaches a similar conclusion. Other empirical studies provide evidence to show that exclusive territory arrangements can stimulate the provision of dealer services (Sass and Saurman, 1993; 1996; Zanarone, 2009). This paper extends previous research by modeling manufacturers' choices of dealer structure, whereas previous research treats such choices as exogenous. As one exception, Nurski and Verboven (2016) investigate the incentive of exclusive territories by applying benefit-cost analysis. Accordingly, our empirical analysis follows Goldberg (1984)'s proposition that manufacturers should increase the number of dealers in a market until the gains from such intensive coverage are equal to the costs of the reduction in sales per retailer. Hence, the optimal dealer structure depends on the marginal benefit and cost of extra dealers.

This paper is also related to previous research on exclusive dealing and exclusive territories. In a distribution contract or agreement between a manufacturer and a dealer, the exclusive dealing (ED) refers to the stipulation that prohibits the retailer from selling a brand that competes with the manufacturer's products in the same market, and exclusive territory (ET) refers to the stipulation that prohibits the manufacturer from authorizing other dealers to compete in the same market. Our observed manufacturers' and dealers' decisions to dampen competition may reflect a contractual commitment to an exclusive dealing or exclusive territory, but the difference between the observed and formally defined ET and ED is also apparent: we study only manufacturers' one-period choices without excluding the possibility of future changes in market structure, whereas exclusive territory research excludes such a dynamic issue. Section 2 reviews previous literature on ED and ET in detail. Following previous literature, we propose some hypotheses regarding the determinants of ED and ET, and then apply the Chinese distribution data to test these hypotheses.

This paper contributes to the literature in the following respects. First, it is the first empirical study to investigate the relationship between dealers' resale experience and manufacturers' choice of dealership structure. Because certain unob-

[1] Order No. 10 (2005) of the Ministry of Commerce, the National Reform and Development Commission and the Administration for Industry and Commerce, February 21, 2005.
[2] Order No. 16 (2005) of the Ministry of Commerce, August 10, 2005.
[3] Item 2, Article 8 and Item 3 Article 9 of the Measures.
[4] Item 2, Article 8 of the Measures.

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