



Economic impact of direct marketing and contracts: The case of safe vegetable chains in northern Vietnam



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ABSTRACT

The paper investigates the respective impacts on incomes of contractual arrangements, direct sales and spot marketing for “safe vegetable” farmers in northern Vietnam. It is based on a survey of 137 peri-urban vegetable farmers that was analyzed using different econometric methods to correct selection biases. Direct sales and contractual arrangements have a significant positive impact on income compared to spot marketing. Contracts have less impact on income compared to direct sales. It is recommended that policies be formulated to stimulate direct dealings between farmers and consumers, which enhance consumer confidence in terms of quality and translate into higher farmer income than anonymous exchanges or contracts.

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Introduction

It is increasingly acknowledged that access to high-value chains has a positive impact on farmer incomes and poverty alleviation (World Bank, 2008). Rising incomes and fast urbanization are driving up the demand for high-value produce, including fruit, vegetables and meat, as well as heightening consumer concern for food safety. This, combined with the liberalization of foreign direct investment, led to the mushrooming of supermarkets in developing countries in Latin America starting in the mid-1980s and then their rapid spread to Asia and Africa in the 1990s (Reardon et al., 2003).

Changes in consumer demand and in the retailing sector are creating new market opportunities, but are also thrusting new challenges on small-scale farmers, as the new markets have special requirements in terms of quality and delivery deadlines. Contractual arrangements between farmers or farmer groups and buyers have been documented as efficient ways to overcome these challenges and to increase farmer incomes. Contracts are a special form of vertical integration in the chain. Vertical integration involves the participation of one firm in two adjacent stages in the vertical marketing channel from producer to consumer in terms of decisions

and/or ownership (Carlton and Perloff, 1994). The role of vertical integration in reducing transaction costs was brought to the fore by Williamson (1987). Transaction costs are all indirect costs incurred in setting up, conducting and monitoring the transaction, i.e. the cost of searching out, selecting, agreeing to, implementing and enforcing contracts (North, 1990). Measurement of quality characteristics is a specific type of transaction cost. The safety of food produce is a quality attribute that is especially difficult to observe and measure. The consequences of quality measurement constraints on the supply of low-quality produce (as good quality produce does not get a quality premium) and even the disappearance of market transactions have been demonstrated by Akerlof (1970). Increased vertical integration is a response to a greater number of quality measurement errors (Barzel, 1982).

A typology of forms of coordination according to degree of vertical integration can be found in various papers on transaction costs economics, including Williamson (1987) and Jaffee (1993). At the two extremes lie spot market coordination and hierarchy (or the firm). Spot market coordination generally refers to coordination of the selling and purchasing operations through the fixing and publicizing of prices, i.e. price incentives. The firm is typically a centralized, hierarchical organization, which stands in contrast to classical market contracting. Hierarchy refers to the centralization of decisions, command-and-control approaches with coercive power translated into regulations. Hybrid forms are intermediary forms between markets and hierarchies, with some sharing in

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decision-making between the two partners in the transaction (Ménard, 2004). These include different types of contracts. A contract can be defined as a set of commitments governing transactions, e.g. prices, volumes, quantities, input provision. Vertical integration increases from spot markets and market reciprocity to contracts and hierarchy. Vertical integration reduces transaction costs, but, on the other hand, it increases governance costs, i.e. the costs of ensuring that the arrangements are complied with (Williamson, 1991).

Numerous empirical tests have been conducted showing that contractual arrangements reduce transaction costs (see in particular Shelanski and Klein, 1995 for a review). Further, in the last 10 years, studies measuring the effects of contractual arrangements on farmer incomes have developed. A review of existing studies was recently made by Miyata et al. (2009) showing the positive impact of contracts on farmer incomes. Yet, most existing studies compare incomes of farmers with and without contracts, but do not provide for selection biases related to differences in characteristics (observable and unobservable) between farmers that enter into contracts and those that do not. These selection biases can be reduced by various econometric methods, including propensity score matching (PSM) (Rosenbaum and Rubin, 1983). This technique was used by Miyata et al. (2009) in their study of contracts for the marketing of apples and green onions in Shandong province, China. Their conclusion is that contract farmers earn more than their neighbors growing the same crops even after controlling for observable and unobservable characteristics. Another rigorous evaluation (based on PSM techniques) of the economic impact of different modes of coordination in food chains was conducted by Maertens and Swinnen (2009) in the case of vegetable exports in Senegal. A comparison of incomes was conducted between farmers under contract with export companies, farmers employed by exporter estate farms and independent farmers. The study showed that contract farmers earn more than vertically integrated farmers who themselves earn more than farmers outside export schemes (neither contracted nor vertically integrated).

Yet, it is difficult to conclude from the latter study that contractual arrangements bring additional income when compared to spot marketing. Incomes from green beans exported (through contracts) are compared with incomes of farmers not working under contracts. Thus, it is the introduction of a new crop rather than the form of coordination that generates additional income. Besides, even when the same crops are considered, as is the case in the study by Miyata et al. (2009), the quality characteristics are different between farmers selling under contract and those without a contract. It is therefore difficult to come to a conclusion regarding the impact of the contract versus the impact of quality upgrading. Finally, it would be interesting to compare the effect of contractual arrangements with other ways of coordinating transactions in a chain where specific quality attributes are involved, generating high transaction costs. Existing studies focus mainly on vertical integration driven by the buyer, who provides inputs in exchange for the product purchase. Another possible situation of vertical integration is when farmers engage in retailing and have regular interactions with consumers, which can be termed as direct marketing (Cadilhon, 2007). The case of safe vegetables in Vietnam provides a good basis for evaluating the impact of different types of vertical coordination.

Despite the growing demand for safe food, farmers frequently complain about the strong inconsistency of their income. Not all farmers are successful in finding traders offering to buy their vegetables at premium prices.

The purpose of this study is to address the most beneficial form of vertical coordination for farmers involved in quality efforts based on household-level data collected in the peri-urban area of Hanoi in 2008 using different econometric methods. The data set

is suitable for our purpose due to the different types of traditional and modern outlets prevailing during the survey period. It is estimated that the value of the retail trade in USD grew at a rate of 10% per year for the period from 2003 to 2007 and that of modern trade at 20% per year in the same period. The share of supermarkets in retail food marketing is nevertheless still limited (around 14%) (USDA, 2008). Most foodstuffs are still sold in retail wet markets, both planned and spontaneous. Farmers are the decision-makers when it comes to choosing the retail trader and this allows us to analyze the impact of different coordination modes on farmer income. The paper is organized as follows: After the overview just presented, the second section provides background information on safe vegetable marketing in northern Vietnam. The methodology and data are outlined in the third section. The main results and discussions are subsequently presented. The final section includes some implications of the findings for new research and policy recommendations in terms of safe vegetable production.

Background information on vegetable marketing in northern Vietnam

Like many countries of Southeast Asia, Vietnam is characterized by fast economic development and urban growth. The GDP growth rate was 6.23% in 2008. In 2008, the urbanization rate was 27.3% (and rose to 30.4% in 2010), while the urban growth rate stood at 3.26 between 2005 and 2010 (WUP, 2011). Food safety and food freshness have become of primary importance to urban consumers, especially for vegetables, fruit and meat (Figuié et al., 2004).

On the supply side, Vietnam is characterized by a dynamic agricultural sector which still faces structural constraints. Most vegetables available in Hanoi are produced in peri-urban zones where the limited size of land plots (generally under 500 m²) and property speculation result in farmers using increased quantities of fertilizer and pesticides to maximize productivity per hectare. Agriculture in peri-urban Hanoi is highly diversified; the average number of different food plants grown per farm is 7.5 (To, 2008). Vegetables are commonly grown in the dry season, from November to April, after two crops of rice. Farmers combine a variety of leafy vegetables (the most common one being water convolvulus), fruit vegetables (such as tomatoes), root vegetables (kohlrabi) and flower vegetables (cabbage). Basic tools are used on each farm for cultivating and spraying, including hoes, sickles, spades, watering cans and spray devices; more expensive equipment is scarce.

All farmers in Hanoi belong to cooperatives, which are primarily active in the area of infrastructure such as irrigation, while some of them are involved in input and output marketing, as well as in the organizing of training sessions. In 1995, public interest in the safety of vegetable produce led the Vietnam Ministry of Agriculture to implement an ambitious program called “safe vegetables”. The program educated farmers in the reasonable use of fertilizers and pesticides, based on IPM principles, as well as in the use of water from wells and non-polluted rivers. Similar programs were organized by NGOs. Safe vegetable production certificates are awarded by the Plant Protection Department of Hanoi municipality to cooperatives and companies, based on meeting specific conditions of soil and water in the area, as well as compliance with restrictions on the use of chemicals (Pham et al., 2009). In 2008, Hanoi had 27 cooperatives holding safe vegetable production certificates, accounting for around 2% of the Hanoi vegetable growing area (while the safe vegetable program covers approximately 20% of the area). Some cooperatives received support under such programs to get access to retailing points or to enter into contracts with distribution companies, canteens, schools, shops or supermarkets and to have their vegetable output labeled as “safe”, including indication of the place of production. All of these outlets

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