FARM VALUE EVALUATION: METHODS AND CHALLENGES

Sub-Theme: Labour Force of the Future

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Abstract*:*

Statistics clearly show a continuous decline in the number of farms in Europe. One fourth of farms disappeared in Metropolitan France between 2000 and 2010. With 13,200 entering farmers in 2013, compared to 17,200 exiting farmers, the renewal rate was 77%. In this context, some concerns have been expressed regarding a lack of generational renewal in agriculture despite existing policies targeting this issue. This communication based on a literature review contributes to scientific knowledge and provides new perspectives to farm stakeholders and policy-makers on farm transfers, focusing specifically on the role of the value of the farm in this process. Agricultural sector is particularly affected by succession problems: high farm value due to animals as well as land, buildings and machinery; hence, high transfer cost; low attractiveness due to hard working conditions; and by contrast low profitability. Farm transfer depends on the value of the farm. There are numerous methods to assess the value but they are less used. The 'patrimonial' method based on the accounting/market value of the different assets the farm comprises is rather used. Therefore, the farm value depends also on sociological points of view, needs to take into account intangible assets and not only financial considerations.

Keywords: *farm value; succession; agricultural valuation methods; Farm transfer; literature review*

1. Introduction

Statistics clearly show a continuous decline in the number of farms in most industrialised countries, and this is true for Europe (European Commission, 2012) and for France (Giroux, 2011). Between 2000 and 2010 one fourth of farms disappeared in Metropolitan France, reducing their number to 490,000. With 13,200 entering farmers in 2013, compared to 17,200 exiting farmers, the renewal rate was 77% (Pelc, 2014). In this

context, some concerns have been expressed regarding a lack of generational renewal in agriculture in Europe and especially in France, despite existing policies targeting this issue, such as support to new farmers within the Common Agricultural Policy (CAP). The success of this policy aiming at supporting generational renewal in agriculture depends also on the agricultural restructuring policies (e.g. pre-retirement programmes, land reform, and farm modernisation programme). The concerns regarding the lack of generational renewal mainly relate to the need to transfer farms to new farmers rather than existing farmers, to fight against ageing of agricultural working population, as it is believed that the new farmers bring innovation and dynamism to the farming sector, thus increasing the sector's competitiveness (Calus et al., 2008; European Commission, 2012). However, existing farmers may also include younger, more educated and more motivated farmers than transferring farmers, and thus, enlargement strategies where a farm is totally or partly transferred to one or several existing farmers for enlarging their farm may also be of positive value for the farm sector in general. In any case, our analysis does not aim at contributing to this debate and will consider all cases of farm transfer.

What is clear, however, is that the maintenance of farms, whether small or large, is crucial in some areas, as agriculture can prevent land abandonment and its related ecological problems, when land is kept fallow, afforested or sold for urbanisation purposes. Agriculture may also contribute to employment and economic activities in isolated regions where there are few possible alternative economic activities (Cooper et al., 2009). In this context successful farm transfers, that is to say transfers from exiting farmers to (entrant or existing) farmers with a strong survival rate, are crucial (Lepage et al., 2011).

This communication aims at contributing to scientific knowledge and providing new perspectives to farm stakeholders and policy-makers on farm transfers, focusing specifically on the role of the value of the farm in this process. We will characterise the factors that define the farm value during transfer and that influence the latter. Farm transfer encompasses several meanings, ranging from full succession where one farm is fully passed on to one successor, to the selling of the farm in several parts, and to the replacement of a partner in a partnership farm, and encompassing both intra-family and extra-family situations as well as transfer to new entrants or to existing farmers. Farm transfer depends on the value of the farm. There are numerous methods to assess the value but they are less used. The 'patrimonial' method based on the accounting/market

value of the different assets the farm comprises is rather used. Therefore, the value of the farm depends also on sociological points of view, needs to take into account intangible assets and not only financial considerations.

The original and relevant questions we would like to discuss in this communication are : "What is the value of a farm ?" in a sense of "what does value mean?"

To discuss these questions, we describe firstly the methodology and the data we used (2.). Then the results are presented (3.) and discussed (4.) before a short conclusion (5.).

2. Methodology

Our methodological strategy is to perform analyses with existing literature. We used google scholar and selected key-words related to farm value, succession, agricultural valuation methods and farm transfer to find relevant articles on our topic.

We complement it with analyses based on answers we have obtained for 5 years through interviews with stakeholders including bankers, farm accountancy offices, farmers' unions, chambers of agriculture, notaries, etc. The interviews aimed at collecting stakeholders' opinions on the various methods for farm valuation and the various components of the value of a farm. Financial and banking data for several farm examples have been collected also.

3. Results

3.1.Literature review

Although recently there has been a revitalisation of the grey and professional literature on farm transfers (Confédération des Experts Agricoles et Fonciers et Immobiliers, 1999; Rossi et al., 2014; France Agricole, 2014; Teagasc, 2014), the academic literature is thin. Existing studies have investigated the determinants of farm succession (e.g. Stiglbauer and Weiss, 2000; Kimhi and Nachlieli, 2001; Glauben et al., 2004; Mishra A. and El-Osta, 2008; Glauben et al., 2009; Lobley and Baker, 2012; Cavicchioli et al., 2015; Gaté and Latruffe, 2015) such as farmers' demographic characteristics and farms' structural characteristics, but do not consider the specific case of farm value.

The main limit to quantitative studies on farm transfer is the absence of appropriate data to conduct economic and statistical analyses. In fact, databases that can help observe precisely farm transfers are the Agricultural Censuses, which are available approximately every ten years. However, these databases do not incorporate any economic or financial data that could provide information on farm value and performance. By contrast, the Farm Accountancy Data Network (FADN) does provide detailed accounting data. However, these data reflect purchase prices and may not necessarily correspond to current market prices, i.e. fair values of the farm components.

Although an extensive literature exists in finance on valuation, few and early books have focused on agricultural valuation (Barthélémy, 1997; Murray et al., 1983). One survey was used to determine which kinds of factors influence the way analysts estimate farm value (Eves, 2007). However, most studies encompass some fundamental accounting methods used in practice for valuation purposes mainly in non-agricultural sectors. The methods need to be tested in practice for the agricultural sector by empirical analyses on more recent data. When the topic of valuation is addressed in agriculture, it mainly focuses on land value (Ma and Swinton, 2012), thus neglecting the farm as a whole enterprise, which represents a major issue for valuation. Also, while farm value and property are regularly monitored in the United States (Nickerson et al., 2012), such follow-up remains to be done in Europe and in particular in France, where often only land value is systematically recorded each time a selling transaction occurs. Data on land transactions, available from the French Ministry of Agriculture, from the SAFER (semi-public bodies mainly aiming at avoiding speculation on farmland prices) or from private notaries, include the price of the plot exchanged and a few characteristics of the plot such as the location, the type of production or whether the buyer is a farmer. Transactions are separated into categories depending on whether the land is built or not, but there is no widely available database on the selling price of farm property excluding land, or the farm as a whole.

Nevertheless, financial valuation of companies has benefited from theoretical and practical advances which have led to the creation and the implementation of many techniques. Six approaches are mainly used in both direct and indirect valuation methods (Barthélémy, 1997; Wahlen et al., 2013):

(1) a 'fundamental' method which consists in evaluating the farm as an industrial project that will generate cash flows in the future. The farm value is the sum of the future net cash flows discounted at a particular rate. In this method, one needs to estimate accurately future cash flows (investment and operating flows) as well as the discount rate, which can be viewed as the required rate of return for that project;

(2) a 'financial' method based on the estimation of the owner's potential remuneration. The latter is used to assess the value of equity by retaining a standard required return on invested capital;

(3) a 'patrimonial' method based on the accounting/market value of the different assets the farm comprises. Each asset is estimated separately, and many aspects have to be taken into account (use or liquidation value, taxation, intangible assets);

(4) a 'comparison' method which assesses the value of a given farm by comparing the transaction value of similar farms in terms of size, value of sales, production specialisation, location, etc. The value of a farm can then be assessed as a multiple of standard indicators (e.g. sales, cash flows, earnings before interest, taxes, depreciation and amortisation – EBITDA, invested capital);

(5) an 'accounting' method based on the capitalisation of the annual depreciation for a period (e.g. 10 years). This annual depreciation is calculated as the balance after paying for all production factors;

(6) a 'borrower's capacity to repay' method based on the amount the borrower must pay back the loan to the lender annually. Knowing the credit rate and its duration, it is easy to deduce the capital that can be borrowed. If the borower doesn't hold other funds, the borrowed capital corresponds to the value of the farm.

Other classifications of these valuation methods can also be done. Direct valuation methods value equity directly (methods 2, 6), while indirect valuation methods value the firm as a whole and then subtract the value of the debt to get the equity value (methods 1, 3, 4, 5). Moreover, some methods are directly based on farm assets (methods 3, 4) while others take into account the ability of the farm to create value (methods 1, 2, 5, 6). The choice of a specific method is therefore linked to the variety of farms'/firms' situations

and to the evaluators' requirements. In practice, estimating a firm's value supposes to rely on a set of different values that need to be aggregated into a single estimation. Because this estimation may differ from the effective price depending on power relations on the market and on family relationships, the economic and sociological context of the evaluation has to be taken into account.

We have tested in practice these 6 methods on 30 farms by empirical analyses on recent data for 5 years. We evaluated how much money it costs to become a new farmer. Generally, for a same farm, these 6 methods supply 6 values with a large dispersion from 25,000€ to 500,000€. This result is surprising but corresponds to the current situation according to the stakeholders we have interviewed since 2011.

Among works already focusing on farm valuation only concentrated on land value, some of them used financial valuation methods: Barry (1980) used the Capital Asset Pricing Model (CAPM) to provide a valuation based on financial markets. Following this approach, Baker et al. (2014) used the beta coefficient estimated with CAPM to assess farmland value by comparison with market returns. Burt (1986) used the fundamental method that consists in discounting cash flows to estimate the value. By contrast, to the best of our knowledge, no academic study focused on farm valuation considering farm as a whole (farmland and generated cash flows).

3.2. Stakeholders' opinion : to consider the diversity of components in a farm value

If the literature mainly focuses on tangible assets such as the main structural characteristics of the farm (buildings, facilities, land, cattle, soil, etc.), by contrast, intangible assets take into account production contracts, sociological components such as professional knowledge and values, risk, capacity to embed the farm in its territory, capacity to get subsidies, regulatory compliance, and the characteristics of the industry such as the ability to innovate. Indeed, according to stakeholders we met, the economic value in itself can have several definitions, and the use of one in particular depends on the context of the farm transfer. There is no 'one-size-fits-all' approach. Several intangible aspects may be included in the farm valuation, which are either related to the farm itself or to its external environment:

- Factors related to the farm encompass the type and quality of farming, the exposure to specific risks in agriculture, global positioning on the market, sale

contracts, the role of the farm in a territory, advantages or disadvantages of the financial situation, customers' portfolio, business capital, skills of the farmers;

- Factors related to the environment encompass the dynamism and structure of the (upward and downward) industry, the legal and tax framework, as well as the existence of local and environmental regulations.

Intangible assets are, or may be, included in the estimation of farm value as explained previously. This approach goes beyond the traditional 'sum of the part' valuation by including a goodwill. The goodwill can be computed basically as the difference between the 'patrimonial' value of farm assets (re-evaluated at a current market price) and the 'fundamental' value of cash flows which takes into account discounted yields and risks on a long period.

Some additional specific aspects have to be considered. Firstly, in France, 'key money' ('pas-de-porte' in French) is forbidden, but in practice new tenants have to pay to outgoing tenants in order to access the land, especially where sugar quota existed. This kind of intangible assets has to be taken into account because it contributes to fundamentally influence the effective value of a farm transfer (Gault et al., 2013). Secondly, particular attention will be paid to the life cycle of the farm which has a direct impact on its value. Indeed, the position of the transfer in the life cycle of the farm influences its value because of the phenomenon of obsolescence of the assets. In other words, two farms with the same characteristics do not have the same value if their positions in their respective life cycle are different (Calus et al., 2008).

Finally, the selection of intangible components considered in farm valuation depends also on the end-use of the value (e.g. for farm transfer or for obtaining bank credit), on the type of officer who advises the transferring farmer (e.g. extension officer vs. banker), or on the source of financing for the farm purchase (e.g. own resources vs. bank credit). In addition, while the monetary value and the profitability of a farm are generally viewed by economists as the main aspect in farm transfer, several economic researchers have advocated to account for farmers' non-economic (or non-instrumental) objectives and values.

4. Discussion : To go further the only economic value

The change of hands of a business is a question of interest for all sectors of the economy. Agriculture is however rather specific.

The main specificity is that agriculture relies on land. Thus, land is part of the farm assets that has to be valued and transferred. This is an intricate issue, as not only land is used as a factor of production, but it is also considered by farmers as a family asset with the objective of preserving it and passing it on to the next family generation. In addition, land may be very pricey in some areas, such as in highly productive farming areas or in peri-urban areas where development pressure is high (e.g. Akimowicz et al., 2013). All this makes the study of farm valuation and farm transfer more complex.

The second specificity of agriculture is that it is a sector where business heads are under a lot of stress (hard working conditions, in particular in specific sectors such as livestock breeding; high risk leading to volatile profits; tense relationships with retailers), leading to high figures in terms of suicides (Droz et al., 2014). This may thus make the sector little attractive for successors and reduce the value of a farm.

A third specificity is, in contrast to what is explained just above, that farmers may enjoy so much their activity that they are ready to lose money out of it and remain in business in spite of it. Gasson (1973) was the pioneer in identifying farmers' values. According to the author, farmers may not always act under 'resource constraints', that is to say in a way that maximise their profit. They may also be motivated by social values, such as maintaining a tradition (including the land owned by the family), being able to be creative and independent, and enjoying a specific lifestyle. These non-pecuniary benefits to farming have been highlighted in the literature, based on statistical measurement (e.g. Fall and Magnac, 2004; Key and Roberts, 2009) or on attitudinal statements (e.g. Gorton et al., 2008; Howley, 2015). These benefits may play a role on the sector's attractiveness for successors, as well as the way farmers value their farm.

Fourth, the sector is subject to major regulations, with European and national policies aiming at regulating farm practices in terms of environment and animal welfare, at regulating the creation of new farms and farm transfers, but also at supporting financially the businesses with subsidies. This framework may influence the economic value of a farm, but may also render farm transfers more difficult (Gate and Latruffe, 2015).

The final specificity is the plurality of stakeholders surrounding farmers: State agents, upward and downward firms, extension services, accountants, bankers, research services, unions and various associations aiming at developing agriculture. All these specificities make the analysis of farm value and farm transfer in agriculture a complex task.

As explained above, non-pecuniary benefits from farming may form part of the farm value. Howley (2015) suggested that the latter include 'intrinsic' aspects, that are linked to the labour per se, and 'extrinsic' aspects that relate to social and lifestyle characteristics going hand to hand with farming. In addition, from a sociological point of view professional transfers cover various components, among which financial assets are only one side of the coin, and symbolic heritage which includes transferring professional knowledge and values is the other (Jacques-Jouvenot, 2014).

Because these non-economic aspects are difficult to quantify, studying this issue with both economic and sociological perspectives should be a challenge and an originality. It has never been done so far to our knowledge, although this is of high value for this particular issue. Indeed, sociological mechanisms, which are central to a transfer process, could help explain findings that may appear non rational to economists. Sociology may also help adapt the general (large-scale) economic findings to specific contexts where personal relationships and behaviours influence farm transfers. Reversely, economics can inform sociologists on the most widespread (or average) findings on a specific issue, encouraging to question why such findings are not prevailing in their case study.

5. Conclusion

Generally, the farm value used during transfers by professional stakeholders is given by economic or financial metrics. However, the latter do not account for sociological value (e.g. the fact that the farm assets are family assets), which may be so high that it prevents transfer.

Even if we consider farm value methods need extensions or alternatives in particular from finance, the major challenge is to take into account the diversity of components in a farm value, and in particular farm intangible assets, whether these are economic aspects (such as the role of the farm in a territory, managerial skills, payment rights or contracts)

Studying the issue with both economic and sociological perspectives has never been done so far to our knowledge, although this is of high value for this particular issue. Moreover, financial and sociological aspects (such as professional knowledge) need to link the value of a farm to its transfer, by analysing farmers' wealth accumulation strategies, transferred farms' performance.

To encompass this issue we are starting a new project that aims at carrying for the first time in the literature a thorough assessment of how the value of a farm is assessed, both from economic and sociological points of view, and how both points of view can (or should) be fully integrated in the context of farm transfer.

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