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The Beginning Farmers' problem In Canada

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Abstract: Concerns about beginning farmers in Canada derive from trends in data that show that the population of farmers and the number of young farmers are declining. This paper discusses and analyses issues regarding the constraints and opportunities beginning farmers in Canada face. The discussion covers whether issues peculiar to beginning farmers are, from an economic policy point of view, a source of concern and whether there are motives for government intervention. The main conclusions are 1) the decline in the number of farms in Canada responds to economic forces, 2) the price of fixed assets constitutes the main barrier to entry and 3) government support to entry in agriculture would have a negligible effect on the number of farms and the entry of new farms.

Résumé: L'analyse des tendances dans le secteur agricole au Canada montrent que le nombre d'agriculteurs et le nombre de jeunes agriculteurs sont en déclin. Ces statistiques accentuent les inquiétudes quant aux perspectives d'avenir pour les nouveaux agriculteurs. Ce papier discute et analyse les contraintes et opportunités des nouveaux agriculteurs au Canada. La validité de l'hypothèse selon laquelle les problèmes qui affectent les nouveaux agriculteurs sont propres au secteur agricole et requiert des interventions gouvernementales est examinée. Les principales conclusions sont : 1) le déclin dans le nombre de fermes au Canada est le résultat de forces économiques, 2) le prix des immobilisations est la plus importante barrière à l'entrée et 3) les programmes de soutien gouvernementaux favorisant l'entrée en agriculture ont un effet négligeable sur le nombre de fermes et l'entrée en agriculture.

Keywords: Agriculture, Barriers to Entry, Beginning Farmers, Fixed Assets.

JEL classification: Q10, Q12, Q18.

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The Beginning Farmers' Problem in Canada

The National Future Farmers Network meeting in Gatineau in November 2010 discussed challenges and opportunities for new entrants in agriculture. Participants to the meeting included Jean-Pierre Blackburn, minister of state for agriculture, representatives for federal, provincial and territorial governments, industry associations and young farmers. The meeting identified several areas of challenge for young farmers, including: access to capital, farm transfer, education and profitability.

Concerns about beginning farmers in Canada derive from trends in data that show that the population of farmers and the number of young farmers are declining. Between 2001 and 2006, the number of farms in Canada decreased by 7.1%. During the same period, the number of farm operators below 35 years of age decreased by 25%. In 2001, farm operators under 35 years represented 11.5% of the total farm population. That number was down to 9.1% in 2006 (Statistics Canada, 2007).

This paper discusses and analyses issues regarding the constraints and opportunities that beginning farmers in Canada face. The discussion covers whether issues peculiar to beginning farmers are a source of concern and whether there are motives for government intervention.

Before I begin my analysis, let me define a few concepts. Since 1996, Canada's census of agriculture defines a farm as an agricultural operation that produces for sales at least one of the following: crops, livestock, poultry, animal products or other agricultural products like Christmas trees, honey or maple syrup. The definition does not specify a minimum size of operation.¹ The census of agriculture defines farm operators as the persons responsible for the day-to-day management decisions made in the operation of a census farm or agricultural operation (Statistics Canada, 2008a).

Unlike the National Future Farmers Network, I focus on beginning farmers rather than on young farmers. The National Future Farmers Network defines young farmers (young farm group) as farms managed by an operator under the age of 40. In this paper, I discuss issues regarding entry in farming regardless of the age of the operator. I will focus on new entrants, that

¹ In the United States, minimum criteria defining a farm for census purposes were first established in 1850, but the farm definition has changed nine times since. Starting in 1975, a farm is defined as any place from which \$1,000 or more of agricultural products (crops and livestock) are sold (USDA, 2011).

is, farmers with only a few years of experience.² Note that a farm's owner is not always the farm's operator as a new farmer may very well invest into a farm and never set foot on it.

The evolution of exit and entry in agriculture

Entry and exit from a sector of the economy is natural and healthy as some firms fail to earn positive profits and exit while others see opportunities and enter. In fact, this phenomenon is referred to as “creative destruction” by Joseph Schumpeter. What is peculiar with agriculture is the trend where more farms exit than enter while the demand for food is growing. Many factors have contributed to the decline in the number of farms in Canada. Understanding these factors requires describing the forces that have affected agricultural production in Canada in their proper historical context. As we will see below, the net exit in agriculture is the natural result of economic forces. Whether this is a problem is a question of perception with respect to historical practices and perhaps social ideals regarding rural life.

For many families across Canada, farming is a way of life; more a lifestyle than a business. Traditionally, family farms were passed on from the father to his sons and entry in farming was somewhat considered a birth right. Retired farmers often remained on the farm and lived with or near family members who took over the farm operations. The rural landscape and farm succession practices have changed significantly since and multi-generation farms are becoming less common (James, 2007).

Over time, farmers adopted new technologies and farms have grown in size to exploit economies of scale. Labor-saving technologies greatly affected the rural landscape. As the demand for labor in agriculture fell, farm wages declined and workers migrated to cities. The decline in rural population was accelerated by better earning prospects in cities and also better living conditions and access to services such as electricity, phone, health and dental care, schools, etc.). “Rural isolation” was a major social and economic problem. In the United States, government policies encouraged migration to cities (Johnson 1958).

Some of the forces that drove people out of rural areas are still at work today. Between 2001 and 2006, farm population declined by 6.2% (Statistics Canada, 2008b). Amenities and services in rural areas have much improved, but still cannot match those in urban areas. Other

² The United States Department of Agriculture defines beginning farmers as farmers with less than 10 years of experience.

factors affect farmers' quality of life, including the long working hours, especially during planting and harvesting and the difficulties in taking vacation (e.g. dairy) and socializing. In addition, the hardship of farm work, the risk of injury and the stress associated with risk from price uncertainty and yield contribute to make farming a less desirable occupation than others requiring similar skills. Thus, unless monetary rewards are sufficiently large compared to rewards in other sectors of the economy, the entry rate in agriculture will be low. Census data show that the median income for farm families was \$56,412 in 2005, well below the average income of \$63,846 for families in the general population. These figures are not corrected for differences in taxation, holding of capital assets and cost of living, but still they suggest that farm earnings offer little compensation for the quality of life differential which constitutes for many a barrier to entry in farming.³

For beginning farmers willing to accept lower income to enter agriculture, the capital requirements may constitute a formidable barrier. Farming at an efficient scale requires large investments in land, machinery and production rights in supply managed industries. It is difficult for new entrants to gather sufficient financial resources as qualifying for a loan requires collateral. Banks often require cosigning by family members. In the traditional model where a farm is passed to a family member, succession by a family member is a difficult process today. For many farmers, physical capital and production rights constitute their retirement savings. Thus, passing a farm to a family member at a price below market value can significantly impact the quality of life a retired farmer and create frictions among family members. In addition, tax laws may further complicate the transfer of a farm between family members. The government of Canada offers Succession Business Planning Services, a program that may ease succession by family members (James, 2007).

Farming today is a business that involves large amounts of capital. A farmer is an entrepreneur and entering the farming business is not different than entering in any other sectors of the economy. Entry in agriculture may however have become more difficult over time because of the amount of capital required to operate at an efficient scale. This is true in particular for farming commodities that require large land areas or for sectors that require the purchase of

³ Of course, evaluating quality of life between rural areas and urban areas in this manner is subjective. Some may prefer a farming lifestyle and are willing to accept lower income than a comparable occupation in an urban area.

production quotas, like milk, poultry and eggs in Canada. The next section examines issues regarding capital investment for new farmers that are especially acute in agriculture.

Capitalization in fixed assets and barrier to entry

The discussion above explains how technological improvement contributed to the decline in farm labor demand and why entry in agriculture is more difficult because increase in capital requirements for farming. However, the previous section did not discuss how output prices impact the entry and exit of farms. Microeconomic theory shows that an increase in the price of output induces an increase in the quantity supplied. First, firms already in the market have an incentive to increase their production and second, new firms have an incentive to enter the market, when fixed entry costs are not prohibitive. We will see below that increase in price may have a small effect on entry in farming.

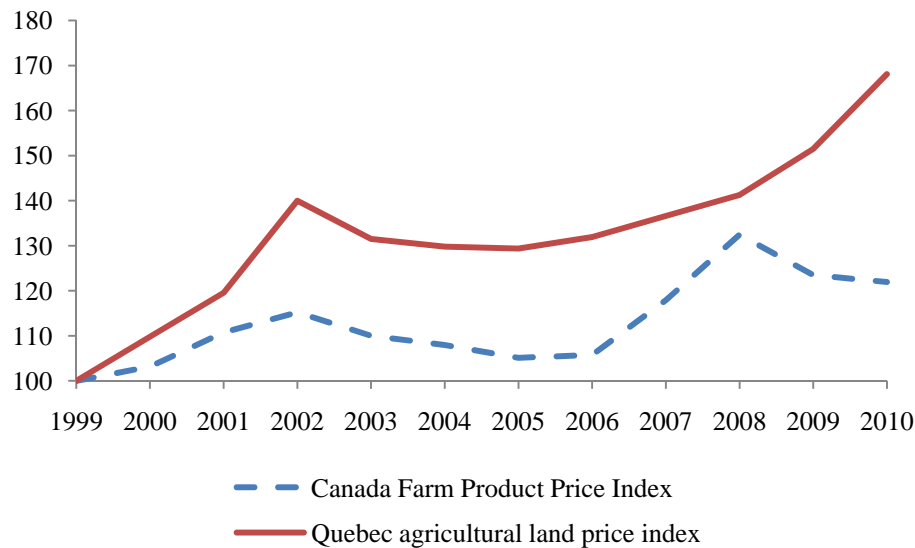
Figure 1 illustrates the evolution of the Farm Product Price Index in Canada between 1999 and 2010. The Farm Product Price Index measures prices received for agricultural commodities at the first transaction point. The index peaked twice: in 2002 and 2008. In the period between the last two censuses on agriculture, in 2001 and 2006, the index increased and then declined to the price level of the first census. This suggests, holding everything else constant, that the price of farm output had a negligible impact on the number of farms between the last two censuses of agriculture.⁴ We can thus infer that other forces have pushed farmers out of agriculture during that period.

Since 2007, the price of agricultural output has increased, not only in Canada but everywhere else in the world. The trend continued in the first half of 2011 as the farm product price index reached 127 (not shown in the graph). This means that the price of agricultural products in Canada increased by about 30% between 2007 and early 2011. One of the drivers of the increase in the price of farm products is the price of energy. On the supply side, energy is an input and a positive shock does not benefit farmers. However, on the demand side, increase in the price of energy has a positive effect on farm profits. Given the energy policy in the United States, an increase in the price of oil triggers an increase in the demand for ethanol which in turn stimulates the demand for corn. The higher demand for corn also affects the price of substitute

⁴ This statement of course does not account for differential price change across farm sectors. For example, it is possible that farm price decreased in a sector where farms are small but increased in a sector where farms are large. These price movements would cause the total number of farms across sectors to decline.

crops (both production and demand substitutes). Thus, higher petroleum prices cause increases in the demand for agricultural products and the resulting higher commodity prices end up benefitting farmers even though some input prices are higher too.

Figure 1: Annual Canada Farm Product Price Index and annual Quebec agricultural land price index between 1999 and 2010 (1990 = 100)



Sources: Statistics Canada (2011) and Financière Agricole (2011). The indices are normalized to 100 in 1999 by the author.

The large increases in agricultural output prices, holding technology constant, should have encouraged many new farmers to enter agriculture. Of course, the increase in prices must be perceived as permanent to have a significant incidence. A response in the number of farms may take a few years before being observed as potential entrants wait to have enough information about prices trends to make up their mind and lags because of the time it takes to create new farm entities. High prices for agricultural output have been observed for a few years now. It will be interesting to compare farm numbers from the 2006 and 2011 censuses of agriculture and see whether the recent increase in the price of has slowed down the decrease in the number of farms.

Stronger incentives to enter agriculture from higher prices dissipate through increases in the price of fixed factors. Whenever a shock impacts a supply chain (e.g. higher consumer

income, lower energy prices) its effect is distributed along the supply chain according to the elasticities of demand and supply (Alston and James 2002). Thus, if the price of an agricultural product increases, it benefits not only farmers, but all other firms within the supply chain. For instance, the more inelastic the supply of a production factor is, the more the price of that factor increases following an increase in the price of an agricultural product. For factors of production with elastic supplies, the effect of a demand shock triggers large (small) quantity (price) adjustments.

In agriculture, the supply for many factors of production is inelastic. A good example is land. The surface available for agricultural production is limited by zoning regulation and by geophysical constraints. In addition, in most areas, arable land has little use outside of agriculture. This means that the residual supply of land to the agricultural sector is quite inelastic. Thus, any increase in the price of agricultural product is in part captured by the price (rental rate) of land. Capitalization of the associated rent implies a positive correlation between the purchase price of land and the price of agricultural products. Figure 1 shows an index of the price of land in Quebec between 1999 and 2010. During that period, the price of agricultural land increased by nearly 70%, far outpacing the increase in the price of agricultural products. Observe that between 1999 and 2005, the price of land followed a path similar to the price of agricultural products, although it increased at a faster pace. Since 2005, the price of land in Quebec has been increasing steadily, reflecting an increase in the demand for agricultural land from better (future) expected revenue for farmers and decline in the interest rate.⁵

Other assets can capture rents from farming. This is especially true of production rights. For sectors that operate under supply management policies, the supply elasticity of production rights is zero and rents from farming are capitalized in the value of quotas/production rights. In Quebec and Ontario, the value for one unit of dairy quota, one kilogram of butterfat per day, or roughly the milk produced by a single cow, was regulated in 2009 after it surpassed the \$32,000 mark. The current ceiling is \$25,000 (Meilke and Cairns 2011). Maritime Provinces, who are in the same pooling agreement as Quebec and Ontario, are in the process of bringing down their quota prices as well. The \$25,000 limit of one unit of quota is still about tenfold the price of a cow. The value of the quota was about \$15,000 in the mid-nineties and had doubled in value by

⁵ Capitalization of return to land implies that the price of land decreases with respect to the interest rate. The recent downward trend in the interest rate therefore contributes to increase the price of land.

2004, reflecting both improvements in demand and supply conditions in the dairy sector. The imposition of a price ceiling was motivated by concerns about entry. As one would expect, the volume of milk quota for sale decreased dramatically following the imposition of the price ceiling, which more difficulties for dairy farmers to enter and expand.

It is impossible to prevent increases in the price of agricultural products from boosting the value of fixed assets. While the owners of assets enjoy an increase in wealth, increases in the value of fixed assets further strengthen the barrier to entry in agriculture. Depending on the responsiveness of asset prices to the price of agricultural products and how entry in agriculture is sensitive to the price of capital, the recent increase in the price of agricultural products may not accelerate entry in farming and perhaps even contribute to the consolidation and a reduction in the number of farms. As the value of fixed assets increases, farms have incentives to increase their scale of production. This is however more difficult in supply managed industries.

The value of fixed assets manifests as a barrier to entry as a constraint in accessing credit. Most beginning farmers do not, of course, have the financial strength to buy a farm without credit. As the value of fixed asset increases, it becomes more difficult for beginning farmers to secure the amount of capital to farm at an efficient scale. Freeman, Nolan and Schoney (2009) find that the initial resource endowment is important to long-run farming success. This result highlights a contradiction in the credit market where beginning farmers must secure a large amount of capital to farm at an efficient scale and survive in the long-run while banks are averse in loaning such amount. Note however that the contradiction does not necessarily represent inefficiency in the credit market. It rather shows that the expected yield for banks in loaning to farmers must align with the yield in other sector of the economy and the risk preference of banks.

Entry in agriculture is still possible despite the large financial constraint and difficulties in accessing credit. One solution entails not owning assets like land or quotas and entering into rental agreements and share cropping. Contracting of farm services is one area of agriculture that is still under-developed. As more investors find it profitable to add agricultural land to their portfolio, the demand for farm services provided by skilled farmers owning machinery will increase. Another option is for beginning farmers to enter niche markets such as local food or organic food for which the demand has been increasing recently. Entry in those markets may not require large capital investment as farms in general operate at smaller scales. Still, developing a

niche is difficult and involves investment in time to market the product. Overall, there is no open door to agriculture and entry is difficult whatever the way a beginning farmer chooses.

How can beginning farmers enter agriculture given that financial barriers are increasingly constraining? The next section discusses some programs designed to help beginning farmers. Although these programs do not guarantee farm financial success, they may ease financial burden and credit access barriers to beginning farmers.

Assistance to beginning farmers

The Canadian government and provincial governments offer assistance to start up businesses.⁶ Should governments do more to facilitate entry in farming? Little governmental resources have been allocated specifically to beginning farmers. However the Canadian government has been listening to the problems faced by young and beginning farms through the National Future Farmers Network. Other initiatives that facilitate communication between beginning farmers and provide extension services to them include the Canadian Young Farmers Forum (Canadian Young Farmers' forum, 2011) and Quebec's Fédération de la Relève Agricole (Fédération de la Relève Agricole du Québec, 2011).

In the United States, extension services provide support to beginning farmers. That support is organized through land-grant universities and has the objective to teach young farmers successful farming practices. Extension agents give conferences, visit farmers and provide information through websites, like the one of the Beginning Farmers Center at Iowa State University (Iowa State University Extension, 2011). Various publications have also devoted space to the problems of beginning farmers (e.g. the 2nd quarter of 2011 issue of Choices Magazine edited by McFadden and Sureshwaran). Similar resources do not seem to be as abundant in Canada.

In Quebec, the Commission on the Future of Agriculture and the Agri-Food Sector in Quebec (CFAAQ, 2008) recommended that technical schools (e.g. Instituts de Technologie Agroalimentaire or ITAs which are like specialized community colleges) play a more important role in training and knowledge transfer.⁷ The Commission also recognized that beginning

⁶ See for example Canada Business (2011).

⁷ 10 of the 49 recommendations of CFAAQ relate to the development of human capital and training. Recommendation #17 calls for ITAs to be under the responsibility of the provincial ministry of agriculture while recommendation #18 calls for the development of new programs to optimize the delivery of training services.

farmers are not adequately trained and that the problem is getting worse. In 2006, 40% of the successful applicants for a start-up subsidy had only a high school diploma compared to 26% in 1998 (CFAAQ, 2008 p.134). This is why CFAAQ recommended that financial assistance be granted conditional on the completion of a technical school degree. Quebec provincial government restructured extension services in 2006 with the creation of regional extension networks that complement the work done by financial institutions, input suppliers, private consultants and advisers hired by small groups of farmers. Since 1990, there exists regional centers facilitating the transfer of farms, but their long term viability was jeopardized by the 2006 reform (CFAAQ, 2008 p.147). The Commission was visibly concerned about the assistance made available to beginning farmers, but it also made recommendations to help farmers exit unprofitable sectors enter sectors with better long term profitability.

Many economists believe that government intervention is only desirable when markets fail to maximize total surplus. Market failures include information asymmetry, public good, externalities and market power. None of these market failures significantly hinder the entry of new farmers. Still, some argue that agriculture is a special case that warrants generous government support. I discuss below some arguments for subsidizing entry in agriculture. These arguments are not new as they relate to arguments made to support agriculture in general. Other authors address these arguments in more details (e.g. Johnson 1958 or Gardner 1992).

Agriculture is a declining sector as both the number of farms and the work force employed in agriculture have been decreasing. This contrasts with the growth in agricultural output resulting from farms getting larger and more efficient. These trends suggest that the decline in the agriculture sector is not demand driven and is a consequence of technological improvements on the supply side. It is therefore difficult to justify government intervention to prevent the decline in the farm sector. Still, some may perceive that the decline in the agricultural sector erodes the quality of the rural landscape and of rural amenities. I argue that facilitating entry in agriculture would not improve the rural landscape. This is so because the efficient size of a farm would not be affected and therefore the density of farms in rural areas would not be affected either.

One argument to justify subsidizing beginning farmers is to secure a region/country's food supply. Before discussing the validity of this argument, let me define food security. According to the Food and Agriculture Organization of the United Nations (2003):

“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern.”

A strict interpretation of the definition implies that food security is precarious in Canada and in virtually all countries in the world because some individuals and households with low income cannot afford sufficient food at all time. Since most Canadians can afford sufficient food at all times, Canada is in a most enviable position in terms of food security. Nevertheless, should the Canadian government support beginning farmers on food security ground? Would such support reduce food prices enough to limit food insecurity for low income households? Like any governmental program that targets agricultural supply, supporting beginning farmers has little impact on food prices. First, the farm price accounts for a small share of the retail price. Second, most of Canada’s agricultural markets are open to trade which means that prices are determined on the international markets. Thus, subsidizing entry in farming does virtually nothing to improve food security in Canada. Policies aimed at income growth or income distribution are more effective means to improve food security in a developed country like Canada. Alternatively, research in agriculture is effective in lowering food prices and as such can be construed as a potent investment in world-wide food security (Alston, Beddow and Pardey, 2009).

Can government support to beginning farmers reduce the vulnerability of Canada’s food supply and maintain food affordable to Canadians in the event catastrophic incidents? For instance, can facilitating entry in farming secure food supply in Canada in the event of a war, terrorist attacks (which could target food supply) or in the event of a widespread drought? It is unclear how subsidizing entry in farming would reduce the vulnerability of Canada’s food supply. First, the value of any subsidy facilitating entry in farming would be capitalized into fixed assets, therefore doing in fact little to increase the number of farms. Second, forces that work toward consolidation would still be at work and the number of farms will likely keep declining. Third, arable land that can be farmed profitably is scarce and adding more farms would therefore do little to increase the total farm acreage. Finally, and most importantly, what matters in the event of a catastrophic incident is that Canada farm system is efficient enough to

support food requirements at a low price. This entails having access to inexpensive food products, whether they are domestically produced or imported. A small number of efficient farms may therefore be more desirable than a large number of small and less efficient farms in reducing the vulnerability of Canada's food system to catastrophic events. International markets provide food security and reduction in the vulnerability of food supply in Canada that subsidies to farms cannot provide. For example, in the event of drought localized to Canada, or even to North America, international markets would partially absorb the shock, limiting the effect to Canadian consumers. Even though the price of food would increase, almost all Canadian would still be able to afford sufficient food.

Producers' associations offer many programs to help beginning farmers. Let me discuss briefly some of these programs focusing in particular on industries under supply management. In these sectors, the price of production quotas is a substantial entry barrier. For a beginning farmer, production rights can be the most expensive asset. For example, the average dairy farm in Canada has 72 cows. Let me assume that a farmer starts with 40 milking cows because a new entrant is likely to operate at a smaller scale and that not all cows produce milk at a given time.⁸ For a quota value of \$25,000 per kilogram of butterfat per day, about the average production of a single cow, this means that the initial investment the quota for a farmer is in the order of one million dollar. Quotas in other industries under supply management are also expensive. In 2007, the average Ontario chicken farm had for over \$1.5 million of quota. By imposing a maximum value for dairy quota, Dairy Farmers of Ontario and its counterparts in other provinces, reduces the cost of entering dairy farming or expanding production even though additional profit from the reduction in quota costs is capitalized in part in other fixed assets. Overall, setting a maximum value for quota facilitates entry in dairy farming, provided there are enough quotas for sale. Dairy Farmers of Ontario complement their price ceiling regulation with other forms of support. The New Entrant Quota Assistance Program offers annually 120 kg of quota to new entrants (Dairy Farmers of Ontario, 2010). Under several restrictions that include that participants have never been licensed to produce milk before and must own at least 12 kg of quota, a selected beginning farmer can receive 12 kg of quota. At the ongoing quota value, this is equivalent to a subsidy of \$300,000. The *Fédération des Producteurs de Lait du Québec* offers similar programs to beginning farmers (Union de Producteurs Agricole, 2010).

⁸ Lactation lasts on average 305 days (Canadian Dairy Information Center, 2011).

It is difficult to criticize programs favoring entry in farming when these programs are adopted and financially supported by producers associations. Producers associations may find it beneficial for their industry to support entry. However, these programs, in particular limiting the value of quotas, do not benefit to all farmers. The price ceiling used to constrain quota values affects negatively farmers that do not plan to expand or who are near retirement by reducing the value of their assets.

Conclusion

The perceived existence of a beginning farmers' problem in Canada comes from the observation of two trends: 1) farms numbers have been declining in Canada for a long time; 2) the average age of farmers in Canada has been increasing. The difficulty to enter agriculture arises from financial barriers. This is not unlike other sectors of the economy that require large amount of start-up capital.

The decline of the agricultural sector can be attributed to improved farm efficiency through a movement toward capital intensive practices. New farming technologies reduce the demand for farm labor and increase the size at which a farm operates efficiently. As farms operate at a larger scale, entry becomes more difficult because farmers must secure more important financial resources. For young farmers that often do not have collateral, entry in agriculture has become increasingly difficult. Family succession of farms is also becoming more complicated because it involves larger amounts of money.

In addition to new technologies, two factors contribute to the increasing importance of financial barriers in agriculture. First, the supply elasticity of many factors of production is low. Thus, these factors of production capture the rent from farming in their price, increasing the amount of capital required to enter agriculture. Second, institutions, such a supply management, create non-physical factors of production (production quotas) with supply elasticities virtually equal to zero which further exacerbate the financial capital required to enter agriculture.

Should the federal and provincial governments intervene to counter the decline of the farm sector and the difficulties to enter agriculture? The decline in the number of farms in Canada reflects the work of market forces. Farms are becoming more efficient by increasing in

size.⁹ The large financial constraints to farmers reflect high earnings prospects which capitalized into fixed assets. Entry in agriculture will continue to occur as farming remains profitable. The markets will provide a selection process where only the most efficient farms survive. If a government decides to subsidize entry in agriculture, the value of the programs would be in part capitalized in the value of fixed assets and help less efficient farmers enter agriculture.

With the increase in the financial requirements to enter agriculture, I expect the farm sector to evolve toward larger and more efficient farms. In addition, given the high rates of return in farm assets such as land, I expect investors with a particular interest in farming to enter agriculture. The increase in financial capital is good news. Furthermore, it will likely bring about an expansion of the demand for farming services. This should make it possible for more beginning farmers to enter farming without having to buy costly assets such as land. In addition, an area where entry in agriculture is likely to occur is in sectors where demand is rapidly expanding. For example, the growth in demand for local and organic products should facilitate entry in niche markets where farms operate at smaller scales.

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⁹ This is especially true in milk production. In an impressive study, Moshein and Lovell (2009) found that even the largest dairy farms can still exploit economies of size. This somewhat contrasts with the results of Foltz (2004) who find that entry and exit of Connecticut dairy farm is better explained by yield than by farm size.

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