Competition from Eastern Europe and Beyond – New Players in the Global Pork Industry

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The twenty-first century pork industry is evolving at a rapid pace. It is characterised by increased levels of global competition, expansion of industrialized production, vertically integrated value chains and production of differentiated products to meet the needs of increasingly demanding consumers. For Canadian hog farmers, gaining an appreciation of the global operating environment, especially the emergence of new hog production regions, is important in assessing the future direction and profitability of the industry and their own enterprises.

The Global Pork Matrix

World pork production has increased more than 42% since 1990, from 65.9 million tonnes to 93.6 million tonnes in 2005. Over the same period beef production increased only 2% while poultry production more than doubled. China continues to completely dominate global pork production, whereas the European Union's (EU) share of total production has fallen significantly, despite the addition of new member states, many of whom are traditional pork producing countries (**Figure 1**).

An appreciation of the global operating environment is important in assessing the future direction and profitability of the industry

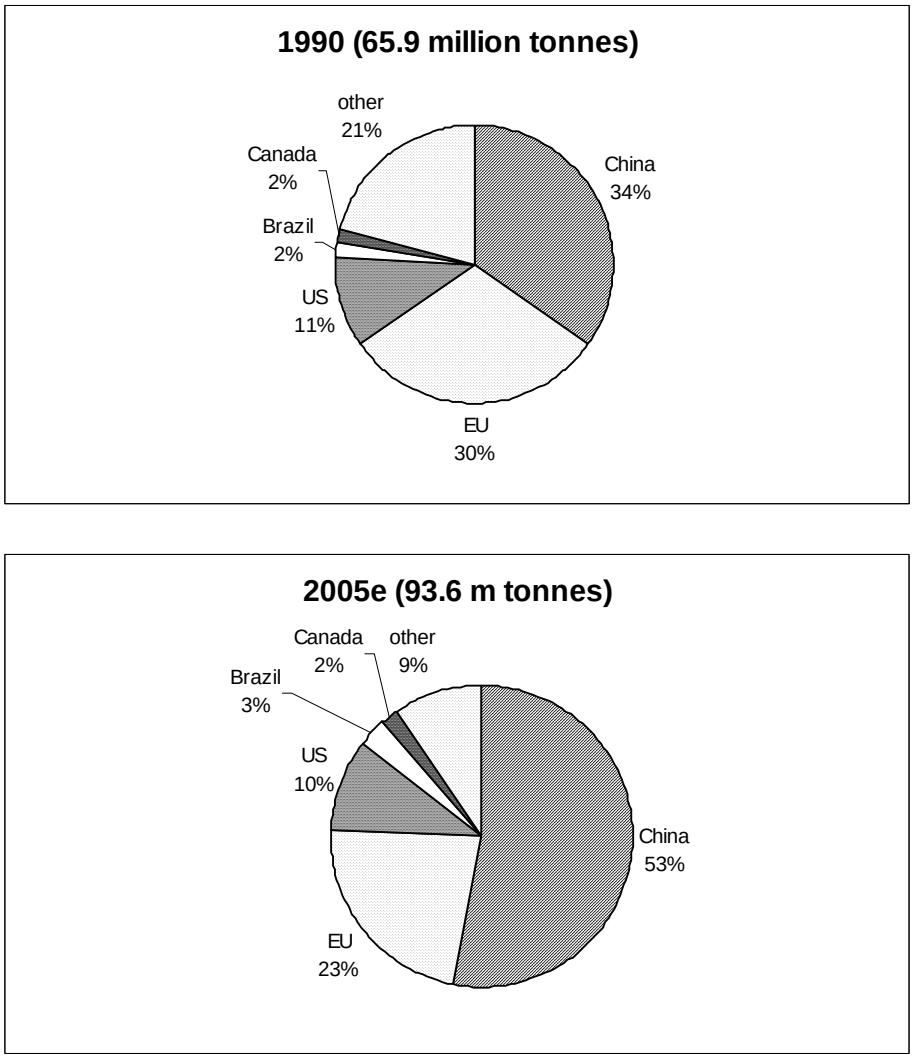

Figure 1. Shift in global pork production, 1990 vs. 2005e; Source: USDA, 2005; e = estimate

Trade in pork has more than doubled since 1990. Trade in pork and pork products is currently dominated by a small number of key players, namely Canada, the U.S., Brazil and the EU (**Figure 2**). While China remains a major exporter today it is expected to move from a net exporter to a net importer by the end of the decade. As is the case with many agricultural products, Brazil has asserted itself on the world pork stage over the last decade despite the fact that domestically, the pork industry remains a poor cousin to the beef and

poultry sectors in terms of size, investment interest and domestic consumption. Canada has continued to cement its position in the world market taking advantage of its competitive cost structure, envious health status and proximity to the U.S.

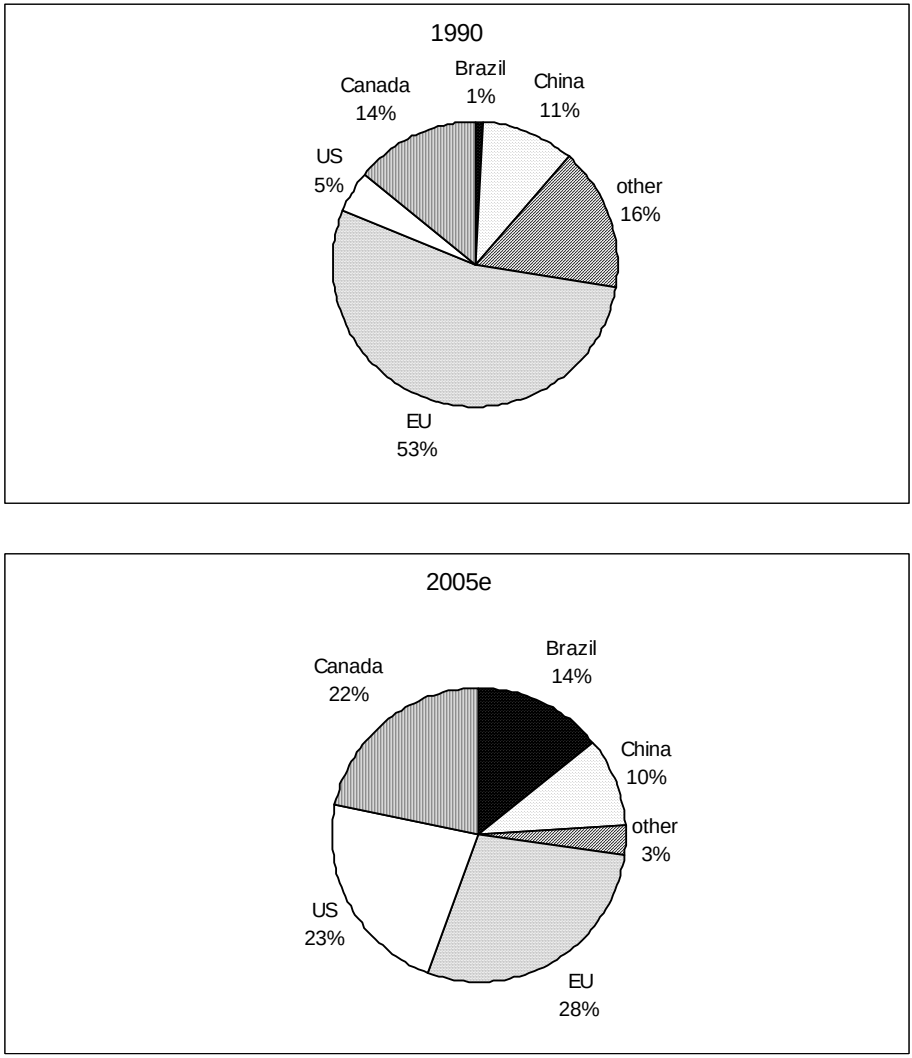

Figure 2. Major pork exporters, 1990 vs. 2005e, Source: USDA, 2005, e = estimate

The importance of international trade to some pork producing countries should not be underestimated. U.S. pork exports were valued at more than USD 2

billion in 2005, representing just over 1 million tonnes in volume or 12% of U.S. pork production. This is the fifteenth consecutive year of record exports and the U.S. is now the world's second largest pork exporter, after the EU. U.S. pork exports have contributed significantly to the profitability of the U.S. industry over recent years, given that domestic competition for stomach share has been intense and pork has struggled to maintain its position against both poultry and beef. At the same time the U.S. is a relatively large importer of pork, which implies that the domestic industry is using export markets to maximise the value of the carcass.

Major pork importing countries tend to fall into two broad categories; those countries with consumers who have a strong preference for high value pork but whose domestic production is stable at best, such as Japan, and those countries where domestic production is increasing but is still insufficient to meet growing demand, such as Mexico and Russia (**Figure 3**).

U.S. is now the world's second largest pork exporter

Interestingly, while the EU has become a less significant (but still the largest) pork exporter it has also become a less significant importer, reducing its overall dependency on pork imports (imports have fallen from 154,000 tonnes in 1990 to only 54,000 tonnes in 2005). This shift can be attributed to the expansion of the EU to include countries such as Poland who are significant pork producers but also to the maintenance of prohibitive market access barriers that artificially support domestic production.

It is reasonable to assume that while there will be minor adjustments to the pork production and pork export league tables over time, a core group of large exporting countries will cement their positions, namely Canada, Brazil, the U.S., the EU-15 and the New Member States (NMS), particularly Poland and Hungary. This group will increase their total pork production as well as remain the world's key exporters (**Figure 4**). That is not to say that countries like Mexico, Argentina, Romania (who joins the EU in 2007) and the Ukraine will not find profitable export opportunities and improve their level of self sufficiency. In contrast, Russia will simply become somewhat more self sufficient and China will move swiftly from a net exporter to a large pork importer.

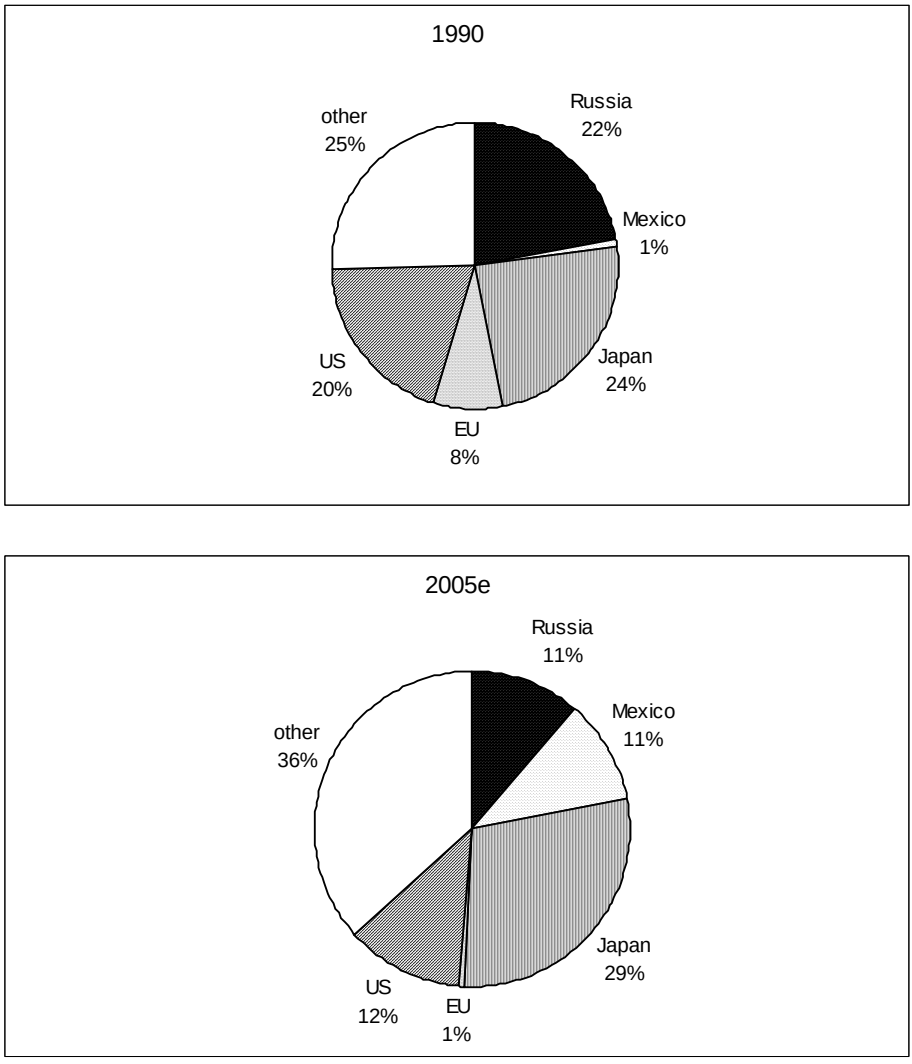

Figure 3. Major pork importers, 1990 vs. 2005e, Source: USDA, 2005, e = estimate

The Economics of Pork Production

At a cursory level the profitability of hog production is dependent on six fundamental pillars;

- Access to affordable feed grain
- Accommodation and other infrastructure costs
- Regulatory requirements (e.g. environmental legislation)
- Access to and cost of capital
- Labor costs and availability
- Management expertise and practices

Likewise, pork processing is dependent on access to raw materials (hogs), labor and capital, management expertise, regulatory requirements, infrastructure, technological adoption and access to end-users.

Access to feed grain is by far the most important cost driver for pork production

Access to feed grain is by far the most important cost driver for pork production across the globe. In all countries it accounts for at least half of all production costs. The innate volatility in feed grain prices also means that a particular region's competitiveness will ebb and flow over time. Countries like Brazil and Argentina benefit greatly from an abundance of feed inputs but there is also competition for this grain between the pork, poultry and beef sectors. Canada also falls into this category. The U.S. is a large and efficient producer of corn and soybeans and has benefited significantly from government support to the row crop sector.

Industrialized hog production is labor intensive. Access to affordable labor is becoming an acute issue in developed countries across the entire agricultural production spectrum. As production becomes more industrialized and the use of technology increases, finding adequately trained labor in developing countries is also a constraint. The development of the trade in feeder hogs from Canada to the U.S. has been influenced by relative labor costs between the two countries as well as exchange rate differentials and the fact that U.S. producers have ready access to corn that can be utilised to finish the hogs to slaughter weight, a production phase that requires less labor.

Access to capital is a requirement for any business. There are understandably huge disparities between the cost of capital across countries and across individual operations. For example, a farmer in Brazil would be faced with a

higher peso denominated interest rate when seeking finance for a new hog operation than an integrator in Canada, who would be able to finance a similar capital project at a much lower dollar denominated rate. Likewise a meat multinational looking to invest in Eastern Europe would undoubtedly have a lower cost of capital than an existing family farmer operating in that region. The level of government support across regions also varies considerably and as overall support to agriculture falls pork producers in some countries will find it increasingly difficult to remain cost competitive.

Across the board, but particularly in developed countries, the pork industry is being forced to operate within an increasingly stringent regulatory environment. Regulations govern everything from the environmental impact of hog farming to animal welfare standards and occupational health and safety requirements. The costs associated with manure disposal is making hog production in the Netherlands increasingly uneconomic. This is one of the reasons hog farmers from countries like the Netherlands are relocating to North America, South America and Eastern Europe.

Industrialized agriculture requires the shift to large-scale production units that use standardized technology and management and are linked to the processor by either formal or informal arrangements. The implementation of more industrialized production practices and improved vertical coordination has completely revolutionised hog production in many countries. But it has also disenfranchised many small farm hog producers and associated businesses.

▪ Prospects for Pork Production in Eastern Europe

Eastern Europe has been much touted as a potential pork powerhouse. Recent investments in the region by meat multinationals such as Smithfield Foods and Danish Crown provide concrete justification for the growing interest in this region. Despite a string of investments in Eastern Europe, their hog production and pork processing sectors remain characterized by high levels of fragmentation and the remnants of socialist agricultural policies.

The European meat (especially pork) industry is going through a period of structural change driven by the expansion of the EU, significant reforms to the Common Agricultural Policy (CAP) and intense competition from other meat producing regions. While further processing and value-adding activities are being consolidated in Western Europe close to the key consumer markets, primary production and first stage processing (slaughtering) is shifting east to countries such as Romania, Poland and Hungary attracted by cheaper land and labor and what are perceived to be less stringent regulations.

Poland

Poland was the first of the Eastern European countries to catch the attention of the global pork industry. There are more than one million farmers living in Poland, making accession to the EU in 2004 a challenging process while also explaining the political and cultural importance of family-based agricultural production in the country.

The Polish breeding herd is 1.7 million sows and more than 85% of these are on 800,000 farms. Only 20% of Polish hog producers sell more than 2,000 hogs a year. To put this in perspective, Informa Economics estimates that contract hog producers in the U.S. must be able to sell at least one truckload of hogs (150-180 hogs) a week to be economically viable. Most large scale hog production in Poland takes place in the west of the country, while processing plants tend to be in the east closer to Russia; this allowed them to better service the Russian market when Poland was under Russian influence. A large number of feeder hogs are imported into Poland for finishing, taking advantage of Poland's lower feed costs and slaughter capacity. Investments by companies such as Smithfield Foods are making vertical integration and contract pork production more common; however, vertically integrated and larger-scale production units continue to face significant backlash from independent producers, environmental groups and in some cases the government.

Poland has a highly fragmented meat processing base with more than 7,000 slaughtering plants, 3,000 for hogs but less than 10 currently approved for EU export. The two largest packers produce approximately 22% of total supply (**Figure 5**). The largest foreign market for Polish pork is Russia, which currently accounts for more than 60% of pork exports.

From a cost competitiveness standpoint, hog production in Poland will become increasingly comparable to Western Europe as land and labor costs rise. This alone will not discourage an expansion in production but over the long term may make Poland a less attractive supply base. Just as with Western Europe, success in Poland will depend on the production and processing efficiency of individual players and the extent to which they can perfect an industrial pork production model.

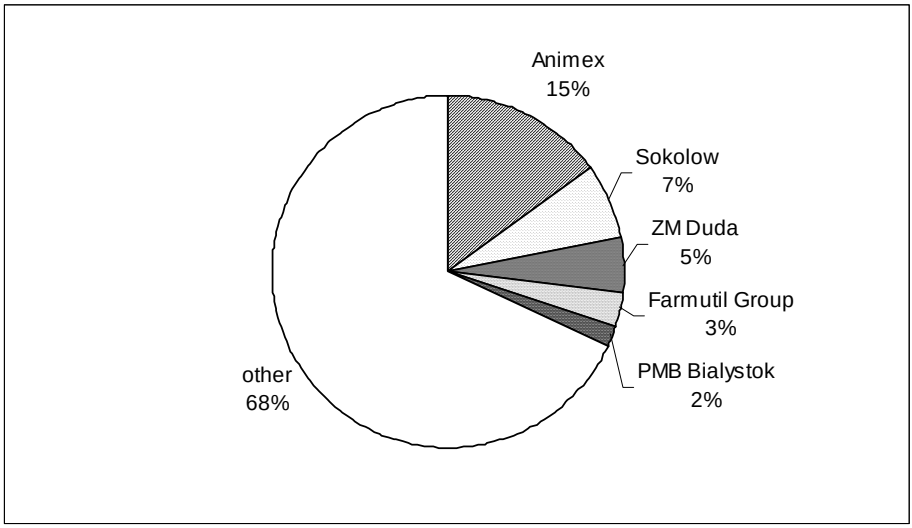

Figure 5. Market share of the major pork processors in Poland, Source: Rabobank estimates, 2005

Romania

In 2004, pork became Romania's top agricultural import, with imports valued at more than USD 220 million. Given this it may seem strange to include Romania on the list of potentially influential pork producers in Eastern Europe. While the domestic hog herd has been contracting for a number of years production is expected to pick up from the beginning of 2006. Today 75% of the herd is held by individual households and only 21% of domestic hog supply is delivered directly to processors, while the share of self-consumption is 63%. This means that many processors rely heavily on imported pork. Over the longer term production is forecast to increase, driven primarily by foreign investment but also by government initiatives to increase production.

Romania's accession to the EU in 2007 will afford it preferential access to markets in Western Europe but to date only eight plants have been approved to export fresh meat to the EU. Accession is also likely to encourage a shake-out in the industry, with only the large farms equipped with modern facilities and technology remaining operational. Over the longer term Romania will increase its grain production and grain imports, improve its self sufficiency in pork production and will become a significant pork supplier to its European neighbours. But it will be difficult for Romania to build significant export opportunities outside of Europe.

Many meat multinationals have heralded Romania as the Iowa of Eastern Europe. While there is little doubt that it is currently severely lacking in terms of infrastructure and has disease related issues to resolve, its raw grain production, cheap labor and proximity to both Western Europe and the former Soviet bloc afford it significant potential.

Hungary

Hungary is another country that is commonly touted as a pork producer of the future. There is little doubt that production in Hungary will increase but it will have a higher cost base than Romania. To date it has been difficult for international companies to make direct investments in Hungary and most investments in the animal protein sector have been concentrated in the poultry segment. There are some indications that Hungary could become a valuable source of feed grain for the hog industry in Romania.

Ukraine

Another Eastern European country that has the potential to significantly increase its pork production is the Ukraine. It is currently and has been for some time the largest producer of grain in Europe and while it is further away from Western Europe than Poland or Hungary it does have an existing pork sector on which to base further growth. Significant investments will be needed to capture these advantages. If Romania is the Iowa of Eastern Europe then maybe the Ukraine is the Illinois of Eastern Europe.

Advantages and Constraints for Eastern Europe

At an overarching level, these countries are a long way from shifting their livestock products from a commodity to consumer-driven differentiated products. Most will continue to find it difficult to meet consumer requirements with respect to food safety, traceability, environmental sustainability and minimum animal welfare standards. They are still a number of years off being able to access markets like Japan due to animal health and food safety constraints. But where production can be built from scratch by one or a small number of mutually dependent parties then it is possible to meet many if not all of these requirements via a vertically integrated supply chain. But even these players will still need to contend with disease issues, infrastructure constraints, and political instability (**Table 1**).

Table 1. Competitive advantages and constraints of pork production in Eastern Europe

Advantages	Constraints
Access to affordable land and labor	Membership of the EU will see land and labor values increase over time
Access to feed	Competition for feed (poultry, cattle) and long term constraints on grain production
Potential for significant production increases (productivity improvements, consolidation, implementation of industrialised production methods)	Industry fragmentation (large number of small producers, large number of processors)
Proximity and access to Western Europe and Russia	Disease concerns
Increasing domestic consumption	Market access constraints
Environmental requirements less stringent than developed countries	Ability to meet food safety, traceability and animal health standards not universal
Experience with large scale production via state-run 'pig plants'	Growing concern over environmental impacts
Ability to enhance value-adding and further processing capabilities	Poor infrastructure (roads, legal framework etc)
	Economic and political uncertainty
	Cultural differences/ criticism of foreign investment

Increasingly, larger integrated players in this region will become very active in the processed meat segment, looking to process pork carcasses in Eastern Europe as opposed to exporting them to Western Europe to be further processed. Consumer preference for processed pork in Eastern Europe will also support expansion of this sector.

Eastern Europe can build a competitive cost structure for hog production. But they will face a myriad of challenges and have a vast number of internal problems to solve just to be able to supply their own growing domestic markets and their new colleagues in Western Europe. Infrastructure,

technology, logistical expertise and access to capital will continue to constrain development in this region.

▪ Beyond Eastern Europe

While Eastern Europe may be attracting a lot of attention, it is important for Canadian hog farmers to take a holistic view of the global pork complex. While Canada, the U.S., EU, Brazil and China will continue to be the global industry heavy weights, over the longer term new players will emerge.

U.S.

Competitive pressures have completely transformed the U.S. pork industry and this structural change is not complete. Since the early 1980s the industry has been restructured from a highly fragmented sector with thousands of independent hog producers and dozens of small and medium packers to an industry dominated by six multi-plant packers (along with five large single plant packers), a handful of powerful integrators and a core group of hog producers, the majority of whom are involved in contract hog production. Integration in the North American pork industry has also been a characteristic of this transformation. By 2004, national borders between hog production in the U.S. and Canada had largely dissolved. Industries in both countries have restructured to allow for specialization in particular stages of hog production. Exports will be an increasingly important revenue stream for the U.S. industry. On the downside, the U.S. industry continues to face criticism associated with its intensive production practices.

Mexico

Pork production in Mexico is projected to grow. Large commercial hog farmers in Mexico are already achieving productivity benchmarks similar to those achieved by U.S. producers. Feed costs are higher – but labor costs are lower – than those in the U.S. or Canada but as Mexico opens up completely to NAFTA in 2008 this basis will shrink. A number of U.S. meat multinationals either have or are looking to make investments in Mexico. While Mexico will continue to be a net importer of pork they are likely to pursue export markets such as the Southwest U.S. and Japan based on preferential market access (Mexico has signed a free trade agreement with Japan, which provides for preferential access for Mexican pork).

Brazil

Production growth in Brazil is being supported by significant levels of investment by both local meat companies and international agribusiness conglomerates. All of the major pork processors in Brazil are also poultry processors, which allows them to better utilize infrastructure, customer relationships and marketing expenditure. Brazil continues to struggle with disease constraints, which in turn limit market access particularly to the highly sought after markets, such as Western Europe and Japan.

Argentina

Compared to its other agricultural pursuits, namely grains, oilseeds and beef, the Argentinean pork industry is very small but is expanding rapidly. The recovery in the domestic market, an abundance of feed and new export opportunities have encouraged investment. Argentina will steadily increase its exports as the industry attempts to replicate the success of the Argentinean beef, and more recently poultry, sectors.

Chile

In comparison to the world's major pork producers Chile is a very small player. However, over the past five years Chile has established itself as a producer of quality pork and has taken full advantage of its high sanitary status and proliferation in free trade agreements. In doing so it has become a key player in the Japanese and South Korean markets. Growth has been catalysed by strong demand in export markets and a stable and growing domestic economy. The pork industry is highly concentrated and vertically integrated with 75% of production controlled by five vertically integrated packers. Only 3% of total pork production comes from so-called non-industrial operations. Chile will continue to benefit from its privileged sanitary status and tight industry structure but production will ultimately be constrained by access to feed and land availability.

China

China will be a net importer of pork by the end of the decade. Small scale backyard farming operations are declining but remain dominant. This type of production model presents problems, including non standardised hog sizes and disease control difficulties. How successful China will be in adjusting its pork production model to accommodate massive rural to urban migration and the need for stringent disease and food safety controls remains to be seen. With significant shortages of land and water and 31% of the population living on approximately 7% of the land, China cannot be competitive in land or water intensive agricultural products over the long run. Pork production is relatively

water intensive and requires access to feed grains and land for manure disposal, which indirectly makes it land intensive. While China will meet some of its feed requirements by importing feed grains, many grain producing countries are likely to seek higher economic returns by converting their grain into animal protein at home and then supplying export markets, such as China, with meat. Imports of high quality pork will increase in the future, to fill the gap in the domestic market.

Asia

While non-China Asia will remain a large consumption market for pork, in the most part production in these countries will not keep pace with domestic demand. Vietnam may be an exception to this trend but significant investment will be required in genetics, infrastructure, disease control and border surveillance if the industry is to reach the export target of 100,000 tonnes a year set by the Vietnamese government.

European Union (EU)

Production in the traditional EU-15 countries will come under increasing pressure, driven by CAP reforms, environmental constraints and a high cost structure. Countries such as Denmark will continue to benefit from access to high value non-EU markets such as Japan while industry consolidation in countries such as Spain and France should improve efficiency. Production in the UK is expected to fall further in light of even tighter welfare requirements contributing to what are already the highest cost levels in Europe.

Australia

The Australian pork industry, while benefiting from its close proximity to Asia, unparalleled animal health status and access to affordable and locally produced feed continues to battle structural and scale inefficiencies. It continues to hold a commanding position in the Singapore market but has been largely unsuccessful at replicating this position in the lucrative Japanese market. Long term the use of imported pork, particularly in processed pork products, is expected to continue, despite current court action to halt imports on the basis of quarantine concerns.

▪ Conclusion

In the pork industry of 2020, successful industry participants will need to be more efficient and cost conscious to maintain and enhance their competitive position. How and where the handful of animal protein multinationals choose to make investments and subsequently, how these companies choose to

utilize their geographically diversified productive capacity, will ultimately determine what new pork production regions emerge and challenge the traditional exporting countries, such as Canada. Continued awareness and analysis of the global pork operating environment will be necessary in determining the future directions of national and regional pork industries.