FEASIBILITY OF A MADE-IN-CANADA HOG PRICE FORMULA

SASKATCHEWAN PORK INDUSTRY SYMPOSIUM 2019
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AGENDA

Mandate

Value of Canadian pork

The choice of a reference price

Made-In-Canada price reference model

Conclusion and discussion
OBJECTIVES OF THE MANDATE

• Assess the opportunity and feasibility of establishing a Made-in-Canada price based on relevant indicators to better reflect the value of the Canadian carcass

  − Determine the value of Canadian pork relative to other major competitors in Canada’s key export markets: United States, Mexico, Japan and China

  − Identify and quantify the factors that contribute to determining the value of Canadian pork in these four markets

  − Propose a set of market indicators that could be used to create a “Made-in-Canada” price formula for live hogs
Our analysis has been conducted following an approach combining:

1. Interviews with different stakeholders
   - Buyers of Canadian & US pork meat in exports markets: China, Japan, Mexico, USA
   - Canadian stakeholders: packers, producers’ organizations

2. Data analysis: trade, prices

3. Literature review and consultation with experts on price discovery processes
PricePaid = RefPrice \times \text{ConversionCoefficient} + \text{Basis} + \text{Premium/discount}

- Reflects market conditions at the macro level
- Equivalency between prices: technical factors, exchange rate
- Reflects local market conditions (can be + or -)
- Reflects specific quality attributes and packer’s business model
Many differences between Eastern and Western provinces
- Production systems, supply chain structures, market regulations
- Share of live pigs exported to the USA
- Share of pork supply exported to Japan
- Market access costs (transportation)
- Level of competition between packers

Challenge to design a one-size-fits-all price formula
- A Canadian Price Reference Model instead of a Canadian Price Formula
GENERAL FRAMEWORK

A Canadian Price Reference Model

CanRef = RefPrice X ConversionCoefficient + CAN_Premium

What best reflect market fundamentals for the Canadian hog production?

Does the Canadian hog production have general attributes supporting a premium for Canadian pork over US pork?
Our analysis led us to propose a price model that:

- Uses reference prices that best reflect the market conditions for North American hogs:
  - Based on a US market reference
  - Acknowledging the loss of representativeness of some US hog reference prices and the higher relevance/increasing use of a cutout reference in price formulas
- Captures and shares the higher value of Canadian pork meat documented in some markets
- Recognizes a premium for the cost of producing ractopamine-free pork
THE VALUE OF CANADIAN PORK

Source: the Canadian Chamber of Commerce in Japan
CanRef = RefPrice X ConversionCoefficient + CAN_Premium

Does the Canadian hog production have general attributes supporting a premium for Canadian pork over US pork?
Japanese buyers value **trustworthy** and **stable suppliers**, but also specific **farming practices** and **production certification** (traceability, quality insurance), including **feeding programs** and **genetics**

- Canada has developed a **reputation for high quality**

**The price** is obviously key, but **image** is also important

**The premium** is related to the **origin**, but also to the **brand**

- The way the product is processed in the plant (desired product characteristics = quality consistency, compliance with specifications, shelf life, food safety)

**Loyalty** is rewarded by the buyer, **stable supply** is a key factor

**The buyer** will have a **direct relationship** with the seller
**Value of Canadian Pork – Japan**

**Pork Import Prices by Product, Avg. Apr-18 to Mar-19, & CA Premium over US**

Canadian pork benefits from a premium for all fresh cuts.

EU too far for exporting chilled pork by sea competitively.

CPTPP: Canada advantageous position will get stronger vis-à-vis the USA.

Source: Agriculture and Livestock Industry Promotion Organization investigation
Note: does not include consumption tax
VALUE OF CANADIAN PORK – JAPAN

Pork Import Prices by Product, Avg Apr-18 to Mar-19, & CA Premium over US

- Lower premium for frozen cuts
- EU better positioned...
- Volume also important

Source: Agriculture and Livestock Industry Promotion Organization investigation
Note: does not include consumption tax
Throughout the interviews, products of Canadian origin were usually noted as being of higher quality than those of other origins.
- This materialises in a Canadian price premium for most products.

Japanese preferences act to position Canadian exporters favourably, particularly over US competitors.
- Reputational strengths seem likely to strengthen, as long as careful brand management and promotion continue.
VALUE OF CANADIAN PORK – CHINA

• RELATIVE VALUE OF DIFFERENT SUPPLIERS
  − Price remains fundamental, whilst meeting quality perceptions of importers
  − Relationship with supplier is less important. Stability & scale of supply key
  − Some larger Canadian plants have been cited as good
    • French is coming out quite a lot as being of very good quality
  − Each importer has specific expectations they need or like
    • Applying a one-size-fits-all approach to China therefore not really relevant
  − Ractopamine-free pork can represent a premium of 20 to 50 cents/ kg depending on the period

• Canadian suppliers often cited as being good suppliers for specific products... price major driver and scale a key attribute driving attractiveness of a supplier
  − Hard to use as a market justifying a CA premium at export
**Value of Canadian Pork — Mexico**

- Mexico is a **price-driven market** supplied by US (82%) and Canada (17%)
  - Very low price market for ham and shoulders, mostly fresh
- Canada has gained market shares relative to the USA
- There is **no difference in price between origins** (US or CA) of exports to Mexico for a specific cut
  - The only **difference** is sometimes the % of **weight loss** that is up to 2% higher from Canada because of the **greater distance**
    - Opinions vary on this topic
- MX importers may prefer the Canadian pork for quality perception
  - CA packers were said to provide more attention to detail: more 'artisanal labour' with a better 'finishing'

→ This enables MX importers to be more specific with import requirements
- MX importers may prefer the US product as it is cheaper
  - CA packers do not have the same scale as their US counterparts
  - Quality-wise, the CA product has their preference
- **Hard to use as a market justifying a CA premium at export**
Value of Canadian Pork – United States

Pork Imports by Origin, 2009-18

Source: USDA
Value of Canadian pork — United States

- North American market highly integrated: *same product, same yield*
- US brokers buy as much here as they do in the US
- **Commodity market: price driven**
  - Some patriotic demand for US pork
- **Niche: customers asking for a brand, not an origin**
  - Some preference for Canadian pork (smaller, colour, longer hocks, reputation of the brands)
- Cost to access market higher for Canadian pork in the Midwest
PRICE DISCOVERY ISSUES AND THE CHOICE OF A REFERENCE PRICE

Source: Energepic.com
A Canadian Price Reference Model

CanRef = RefPrice \times ConversionCoefficient + CAN\_Premium

What best reflect market fundamentals for the Canadian hog production?

- Price discovery issues
- Choice of a reference price
Price discovery is critical to trade relations between market participants
- Market information is at the core of an efficient competitive market system
- That explains LMPR in the US

Performance depends mostly on
- Number of market players, market structure and market coordination
- Regulation

Cash market declining everywhere
- Use of formulas and forward contracts reduces transaction costs
- ↑ use of AMAs

Access to market information is an issue everywhere
- Voluntary price reporting has limits
- Availability of data is limited
- Information asymmetry between producers and packers to the benefit of the latter
Denmark and Chile: 90% integrated. No cash market for live hogs. Price discovery occurs at the exit of the packers’ plant (cutout level).
- Wholesale revenues is the determinant of price paid to contract producers.

Germany and Quebec: governed by regulation, price set by some sort of collective negotiation.

Mexico: high level of integration, cash market for lowest quality channels.
- Highly integrated to the US market, formulas using US ref. price.

Beef in Western provinces: a “black box”, a “broken system”.
- Voluntary reporting mechanism not efficient.

Virtually no cash market for hogs in Canada:
- Ontario: mandatory price reporting for live hogs sold under contract + Ontario 100% formula.
- Quebec: All special agreements are public (premiums, quality grids and all other conditions are also disclosed).
- Western provinces: most of the pigs integrated or sold through price formula contract.
  - Factor is a “black box”.

Price discovery mechanisms are a concern in many regions and sectors.
**Price Discovery – Canadian Provinces: Ontario**

- Increasing spread between OP ref. price and reported price
  - Reflects increasing packer capacity and better margins

![Price spread: reported price vs 100% formula](image-url)
PRICE DISCOVERY – CANADIAN PROVINCES: WESTERN CANADA

- Lower price than in Eastern Canada

<table>
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<tr>
<th>Year</th>
<th>Province</th>
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<tr>
<td>2008</td>
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<td></td>
<td>Quebec</td>
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<td></td>
<td>Manitoba</td>
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<td></td>
<td>Saskatchewan</td>
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<td></td>
<td>Alberta</td>
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Source: Statistics Canada (Table: 32-10-0077-01)
Average monthly price paid to producer, includes all premiums


**PRICE DISCOVERY – CANADIAN PROVINCES: WESTERN CANADA**

- Lower price than in Eastern Canada

![Graph showing price discovery in Canadian provinces](image)

### 2014-19 av. price

- Ont: 88 CAD/cwt
- Qc: 82
- Man: 82
- Alb: 79
- Sask: 78

Source: Statistics Canada (Table: 32-10-0077-01)

Average monthly price paid to producer, includes all premiums

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THE CHOICE OF A REFERENCE PRICE

• To reflect the market conditions under which Canadian hogs are sold
  – North American market that is highly integrated (CA, US, MX)

• To reflect the overall objective of the industry
  – The extend to which the value is to be shared among stakeholders

• Various options
  – Cost of production reference
  – Live hog reference price
  – Cutout reference
  – Combination of any of the above
THE CHOICE OF A REFERENCE PRICE: PROS AND CONS

• CoP reference
  − Exacerbate the risk borne by packers
  − Asymmetric price transmission limits the ability to manage margin squeeze and puts packers in a situation of misalignment with competitors regarding market signals (not widely used in the US)
  − Makes sense only if used as a floor price: hedge against grain price surge

• Live hog reference
  − Relevant as they reflect market fundamentals on the supply side
  − Provides info on the cost of hog supply in relation to packers’ competitiveness

• Cutout reference
  − Allow downstream value of pork to be shared upstream
  − Facilitated alignment of business interest along the value chain
  − Increasingly used in US contract formulas (alone or in combination)

• Combination of any of the above
  − Consist of a good option because it includes more market information
The choice of a reference price: the necessity of US references

- 18% of Canadian pigs exported live to the USA
- 27% of pork meat consumed in Canada come from the USA
- 19% of the Canadian pork production exported to the USA
  - 31% of Canadian exports
- Non-US exports represent 43% of Canadian pork production
- USA is a major competitor in most Canadian export markets
  - China, Japan and Mexico

- Links with the US industry and market are obvious
  - US reference price remain a key market indicator for price determination
  - Reflects the competitive environment of Canadian hog/pork production
What about setting up a Canadian cutout?

• Several obstacles
  – Very low number of meat packers in Canada
    • Would make it difficult to comply with confidentiality rules
    • Risk that data could frequently not be published
    • Interest for a specific Canadian cutout price would be to account for the apparent premium on some export markets (Japan)
      – Very likely that sales on this market would not pass the confidentiality test
      – Leaving the cutout value without its most worthy piece of information
  – Without a regulatory framework mandating packers
    • Rely on packers volunteering to report sales
    • Current business environment not very conducive to such an effort
THE CHOICE OF A REFERENCE PRICE: ANALYSIS OF US REFERENCE PRICES

• What do the different reported US prices represent?
  − Do market participants behave similarly under the different marketing arrangements?
  − Are the hogs sold through the different marketing arrangements the same?
The negotiated (cash) market is extremely thin for live hogs
- Is it still a relevant reference?

US swine sales (heads), distribution by marketing arrangements, 2001-2018

source: USDA report LM_HG201
The choice of a reference price: analysis of US reference prices

- Live hog cash price consistently at a discount over the last 4 years
  - Uncertainty about expected quality of hogs on the cash market
  - Producers do not exert much market power on this market

Spread between AMA and Negotiated base prices for US swine, annual average 2001-18

AMA: Other Market Formula, Other Purchase Arrangement, Swine or Pork Market Formula

Source: Groupe AGECO based on USDA - AMS, report LM_HG201.
The hogs sold on the spot market are not representative of the commodity market: smaller hogs of lesser quality.

Source: Groupe AGECO based on USDA - AMS, report LM_HG201.
US packers have been capturing a larger share of the pork value: the cutout price is a better indicator of the value created.

Source: Groupe AGECO based on USDA – Meat Price Spread data. The price data are monthly averages of reported price under LMPR.
The negotiated (cash) market for pork is not thinning (± 30%)
- It is a relevant source of market information
THE CHOICE OF A REFERENCE PRICE: ANALYSIS OF US REFERENCE PRICES

- Swine negotiated price alone does not provide relevant market information about the value of US live hogs
  - Composite live hog price necessary: weighted average of reported price of different marketing arrangements for live hogs

- The cutout value provides market information for two thirds of the US swine production
  - One third of swine sold through a contract with a cutout component
  - One third of swine are packer-owned

- A composite price is more meaningful: combination of live hog and cutout prices
PROPOSALS FOR A CANADIAN PRICE REFERENCE MODEL

Source: https://www.istockphoto.com
A Canadian Price Reference Model

\[ \text{CanRef} = \text{RefPrice} \times \text{ConversionCoefficient} + \text{CAN\_Premium} \]

- 3 options
- Japanese premium + Racto premium
THE JAPANESE PREMIUM

- Japanese premium relies on both the work of packers and producers, justifying sharing it: But to what extent?
- Not captured in US cutout price reference
- The costs incurred by producers to comply with Japanese market requirements are applied to all hogs produced

### Tentative estimate of the Japanese premium for pork cutout value

<table>
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<tr>
<th>Cuts</th>
<th>Cutout 1%</th>
<th>Japanese premium per cutout 2</th>
<th>Exposure to Japanese market 3</th>
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<tr>
<td>Butt</td>
<td>23%</td>
<td>7 USD/100 kg</td>
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<tr>
<td>Loin</td>
<td>21%</td>
<td>37–66 USD/100 kg</td>
<td>32%</td>
</tr>
<tr>
<td>Belly</td>
<td>13%</td>
<td>26 USD/100 kg</td>
<td>16%</td>
</tr>
<tr>
<td>Shoulder</td>
<td>20%</td>
<td>35 USD/100 kg</td>
<td>25%</td>
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<tr>
<td><strong>Total Japanese premium (carcass basis)</strong></td>
<td></td>
<td><strong>5–7 USD/100 kg</strong></td>
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</tbody>
</table>

1 From Groupe AGÉCO (2009).  
2 As per data collected by GIRA for this research. Based on a weighted average accounting for fresh and frozen products. Cut prices converted to carcass price using a 76% meat yield.  
3 Groupe AGÉCO based on Trade Map data. Source: Groupe AGÉCO and GIRA.

For illustration purpose only!
THE RACTOPAMINE-FREE PREMIUM

• Ractopamine-free hogs command an premium in the US
• This justifies Canadian producers receiving a premium too
• Quebec’s pork producers receive a premium of about $1/100kg
  - Lower than, or on par with, what is paid to hog producers in the US
• Hence, $1/100kg seems reasonable
THE CHOICE OF A REFERENCE PRICE: OUR PROPOSAL

General framework

\[
\text{CanRef} = \text{RefPrice} \times \text{ConversionCoefficient} + \text{CAN\_Premium}
\]

- 3 options

- Japanese premium + Racto premium

- A US cutout reference alone or in combination with a live hog reference
  1. Cutout only
  2. Cutout in combination with live hog
  3. Live hog with a cutout window
PROPOSAL FOR A MADE-IN-CANADA HOG PRICE REFERENCE MODEL

**Option 1: Based on the cutout reference**
- 95% PORK CUTOUT PRICE (e.g., LM_PK620)

**Option 2: Based on a combination of a live hogs and cutout reference**
- 18% LIVE HOG PRICE (e.g., CME Lean Hog Index)
- 82% PORK CUTOUT PRICE (e.g., LM_PK620)
- 95%

**Option 3: Based on a live hog reference with a cutout window**
- 90% FLOOR PORK CUTOUT PRICE (e.g., LM_PK620)
- 100% CEILING PORK CUTOUT PRICE (e.g., LM_PK620)
- 100%
TESTING THE 3 PROPOSALS WITH REAL DATA

• Simulation of the 3 options over the 2013-2019 period
  – Comparing the behaviour of the proposed price reference models with key Canadian reference prices
    • Ontario 100% formula
    • Quebec new formula
    • Base price for key contracts available in Western Canada
      – Olymel « OlyW2019 » Base price
      – Maple Leaf « ML Sig4 » Base price
      – Hylife « Hylife » Base price
IMPROVED REFERENCE PRICES FOR CANADIAN HOG PRODUCERS IN ALL 3 OPTIONS

- Spread between each option and key Canadian live hog reference prices

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A MUCH LOWER SPREAD WITH THE US CUTOUT PRICE

- Spread between the CME Pork Cutout and each option of a “Made-In-Canada” hog price reference model

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<td>$13</td>
<td>$15</td>
<td>$10</td>
<td>$5</td>
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</table>
Simulation of the 3 Options over the 2013-2019 Period

• In all 3 options, volatility of hog prices is reduced

• Option 3 (cutout window) most closely follows the spread variations when live hogs and cutout prices are aligned in the US and contains the upswing of the spread

• Volatility of the spread is significantly reduced
Conclusion and discussion

Source: Wordpress.com
A MADE-IN-CANADA HOG PRICE FORMULA REFERENCE MODEL

• Based on a relevant US market reference: a cutout reference, alone or in combination with other references

• Capturing and sharing the higher value of Canadian pork meat in the Japanese market

• Recognizing a premium for the cost of producing ractopamine-free pork

• Recognizing the challenge of a one-size-fits-all model
  – Differences between Eastern and Western provinces
THE ELEPHANT IN THE ROOM

• The best formula with the best arguments does not answer the question of its implementation in the Canadian hog sector

• Without leverage, regulatory or other measures to improve the balance of power, it will probably be difficult to force packers and producers to adopt such a formula

• It is hard to imagine that packers will voluntarily adopt a formula that will result in reduced margins for them

• Need to demonstrate that it is in their interest to do so
  − Several efforts made to date to demonstrate that it is in the common interest of the sector to have a profitable production sector capable of investing for the future
  − This project provides an additional tool to establish a new "contract" between production and slaughter
Thank you! Any questions?

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