Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada

United States Department of Agriculture

North American Market Integration

- A Survey

NAAMIC Workshop
May 6, 2004

Purpose

- **To survey the economic literature regarding North American (NA) integration in the agri-food sector**
  - **To summarize the lessons learned so far**
  - **To identify knowledge gaps and suggest areas for future research**

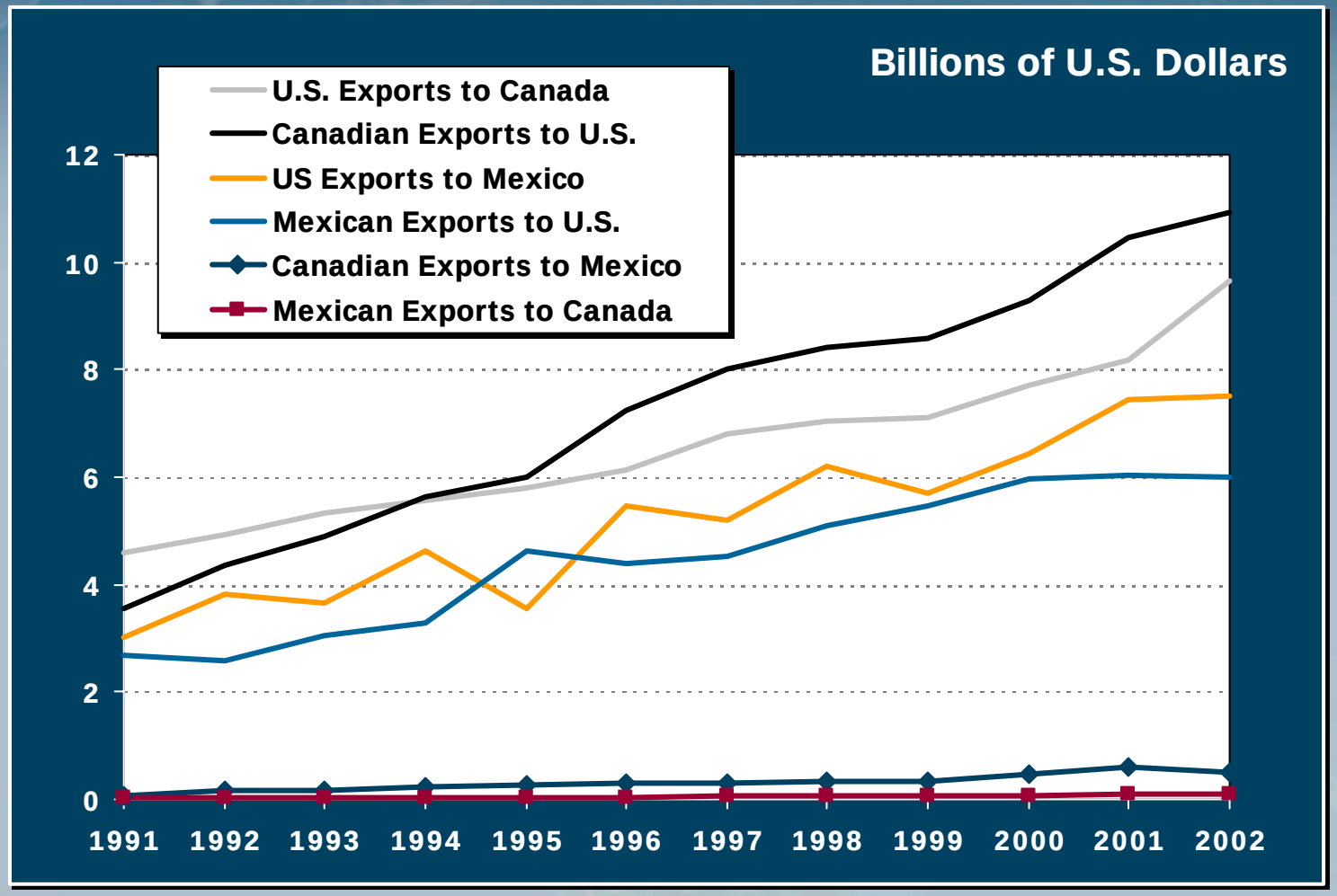
- **Structure of presentation**

How useful are trade statistics as indicators of integration?

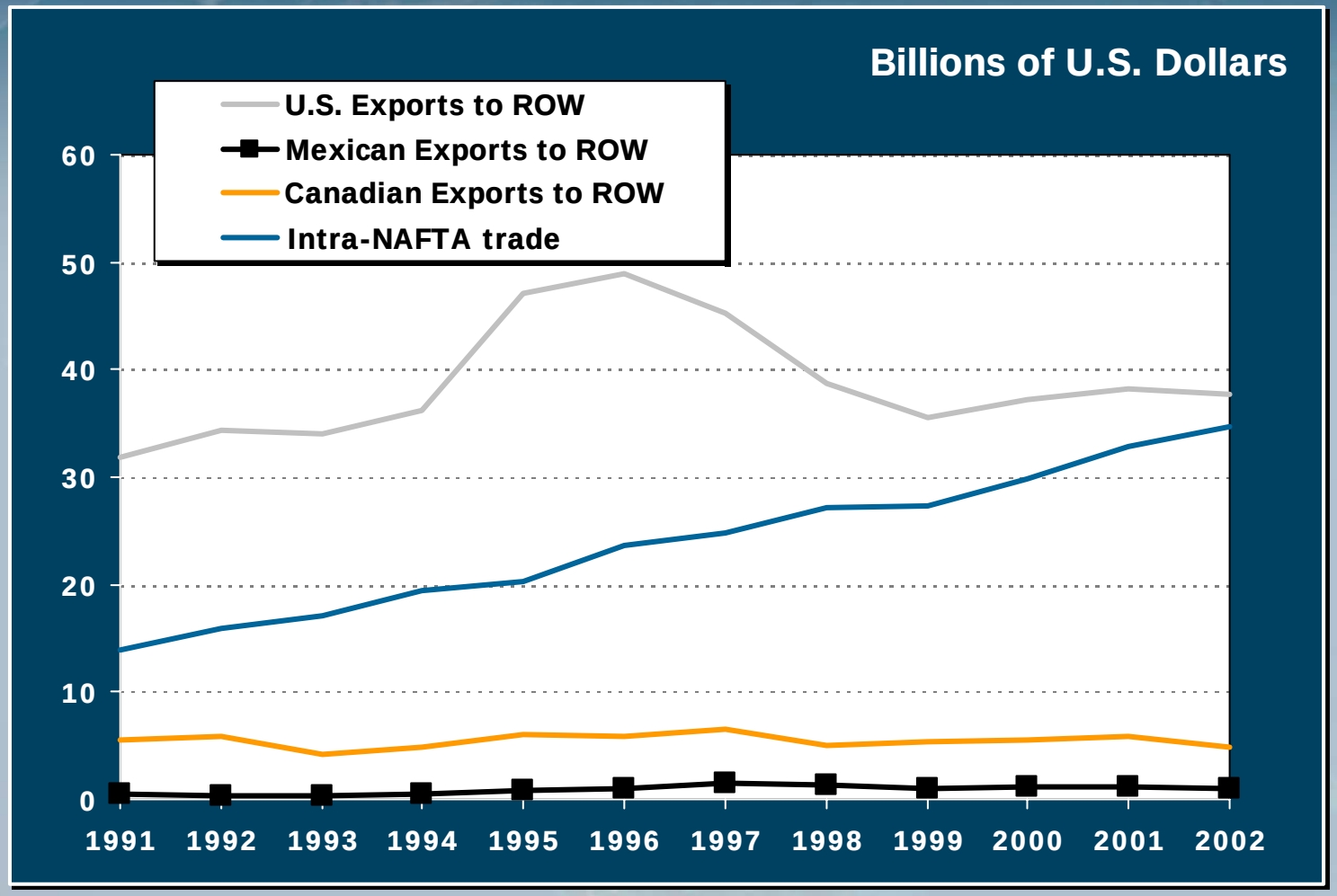
- **Generally provide good insights**
  - **Detailed information on volume, value, and commodity composition of trade over time**
  - **Lacks the precision of price-based studies**

- **Quality of data has improved but is still not superior**
  - **Unnerving differences between US and Mexican statistics**
  - **Similar differences existed between US and Canadian statistics prior to initiation of joint data collection in 1990**

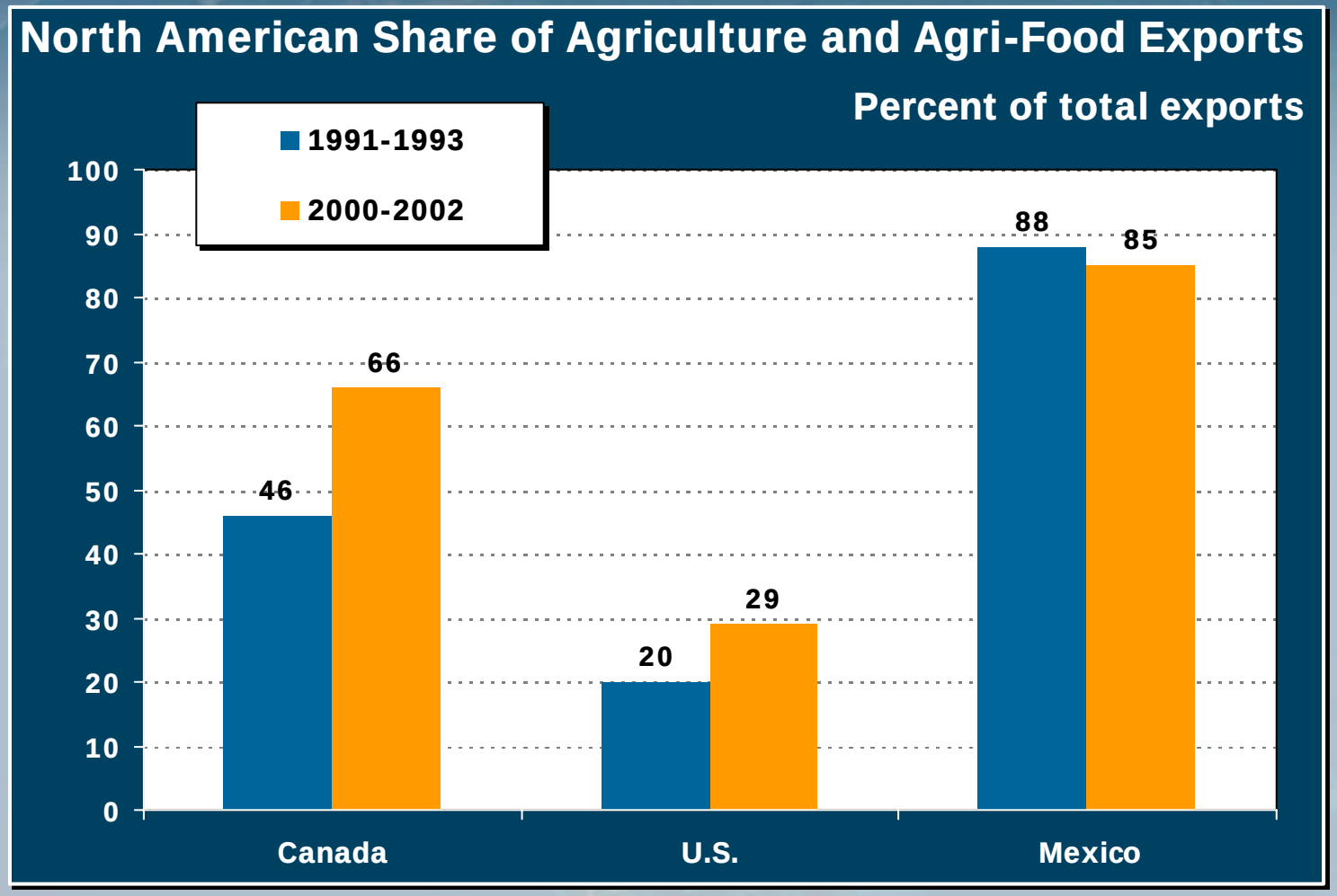
Continental agri-food trade has grown tremendously over CUSTA/NAFTA period



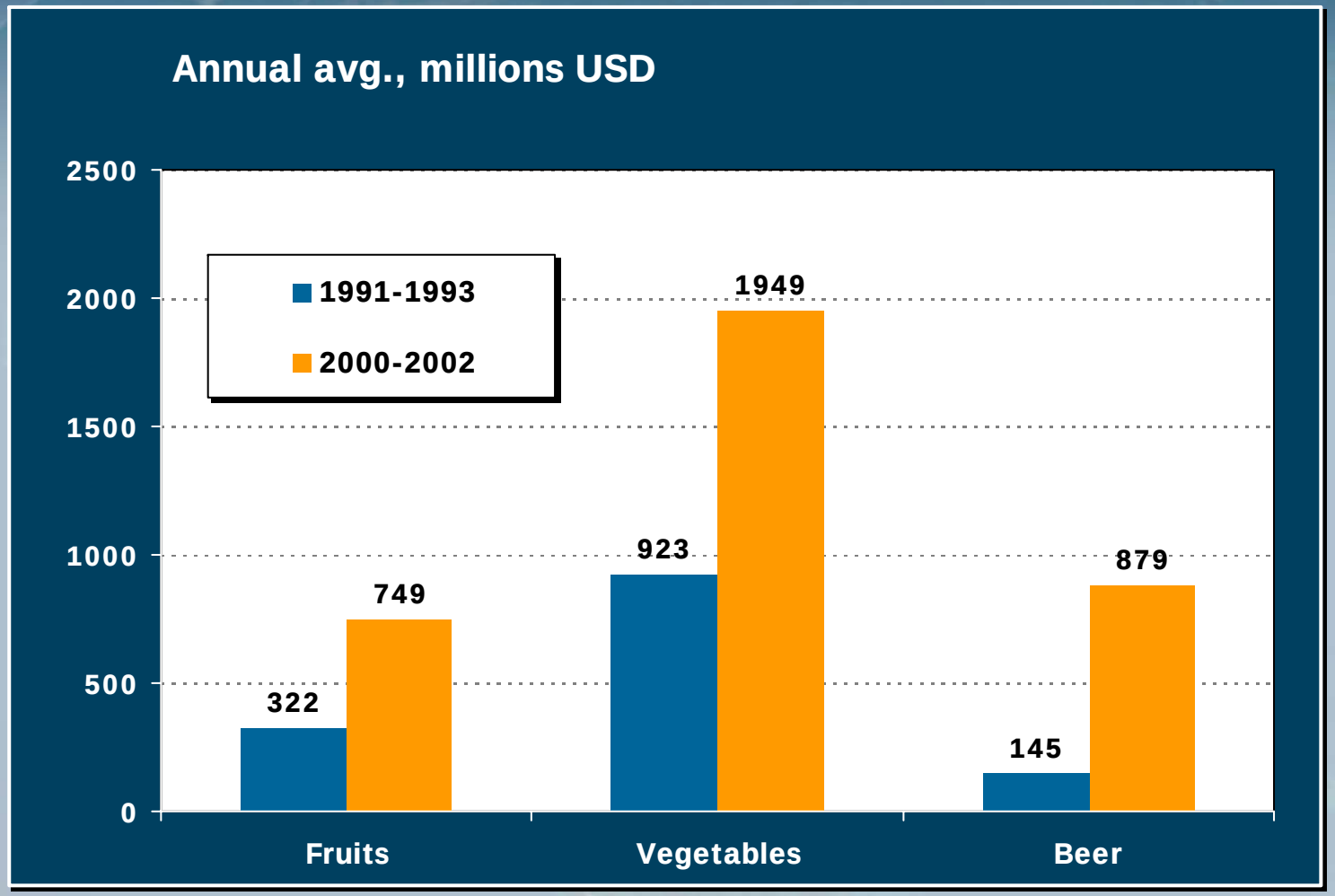
Agricultural exports to the rest of the world have experienced modest growth over the same period



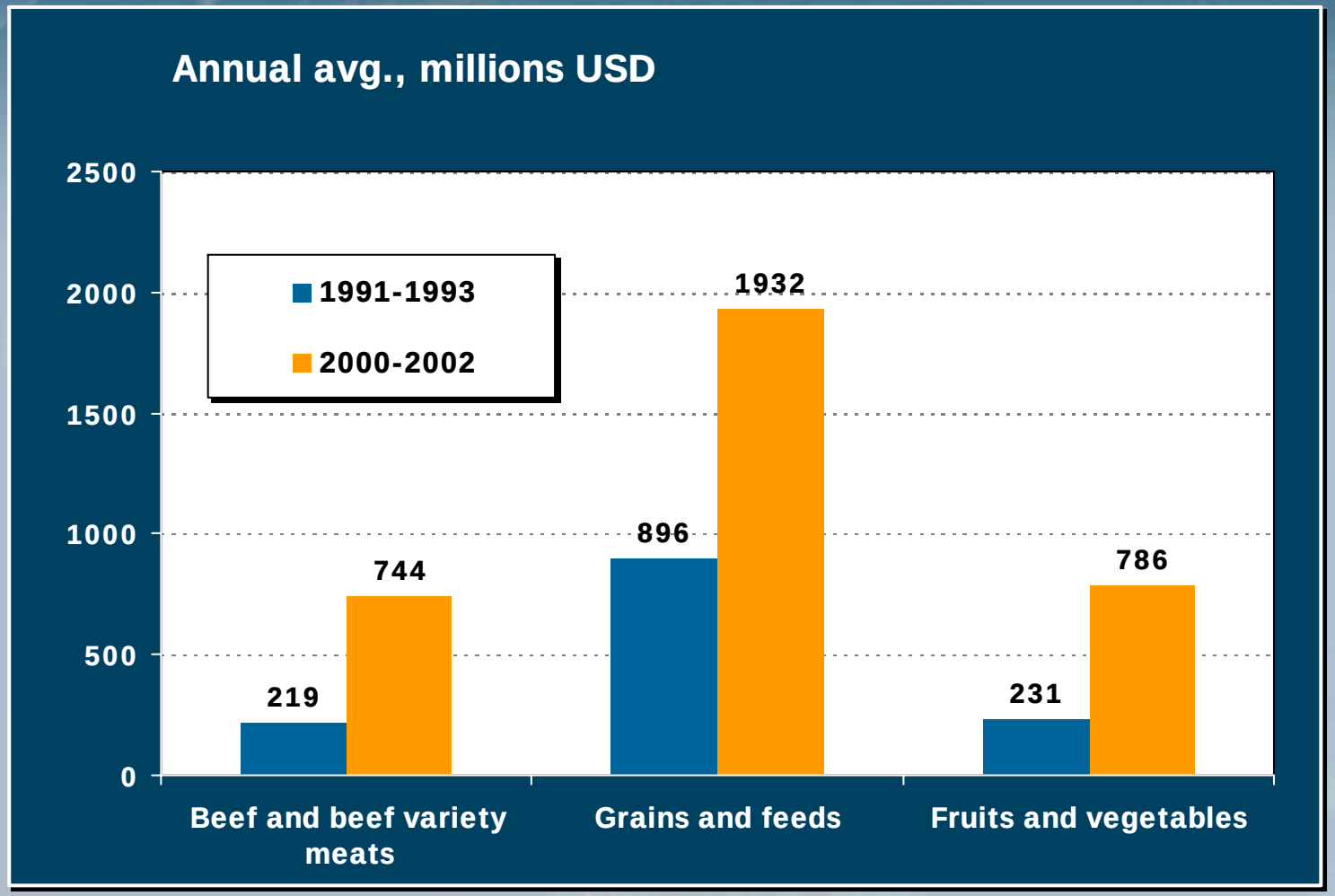
Canada and the US have become more dependent on their NAFTA partners, Mexico more diversified



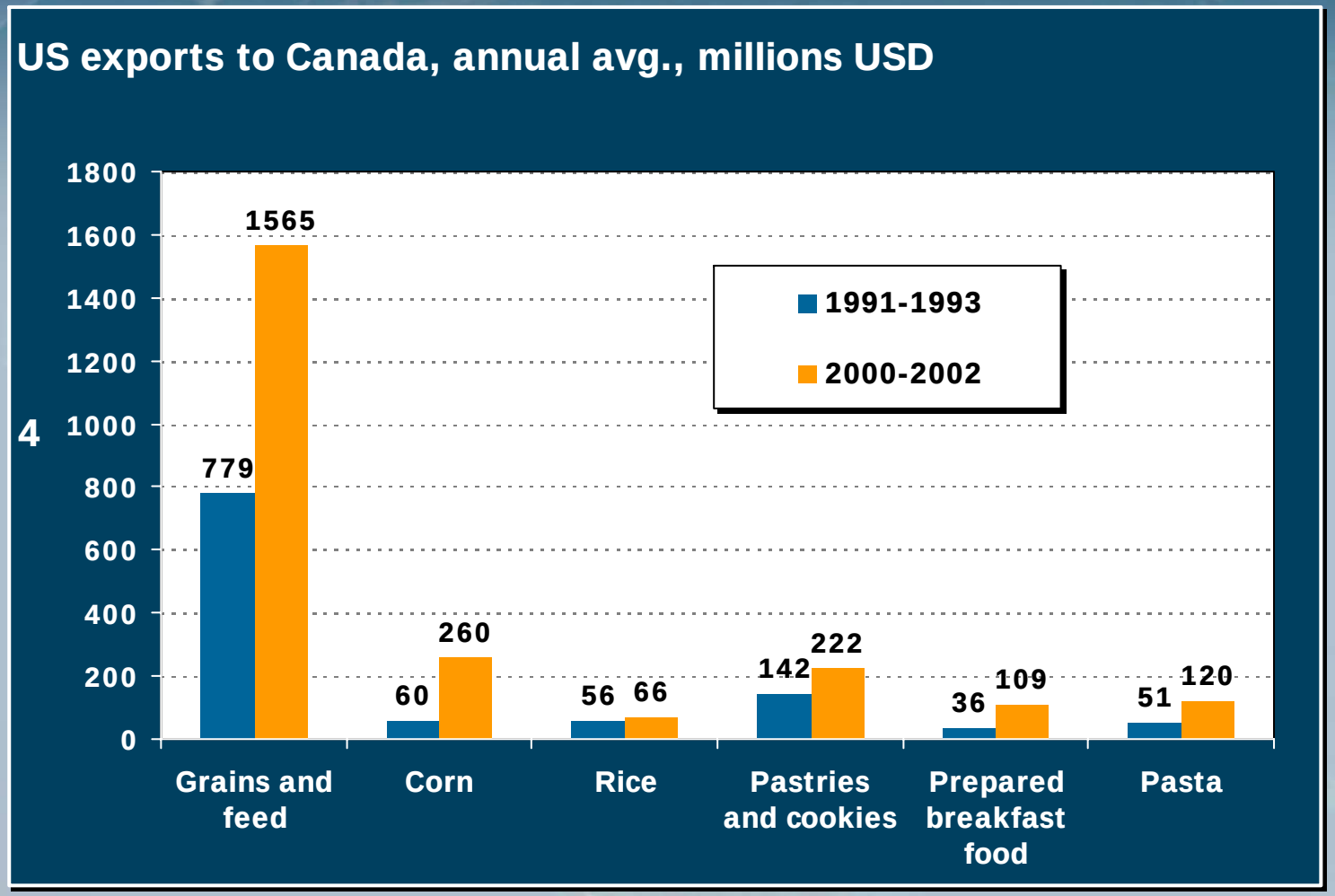
Mexico's main agricultural exports to the US reflect Mexico's comparative advantages



Similarly, the main US agricultural exports to Mexico are indicative of the comparative advantages of US agriculture



Intra-industry trade between Canada and the US reflects the integration of two economies with similar strengths



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The same holds true for Canadian exports to the US

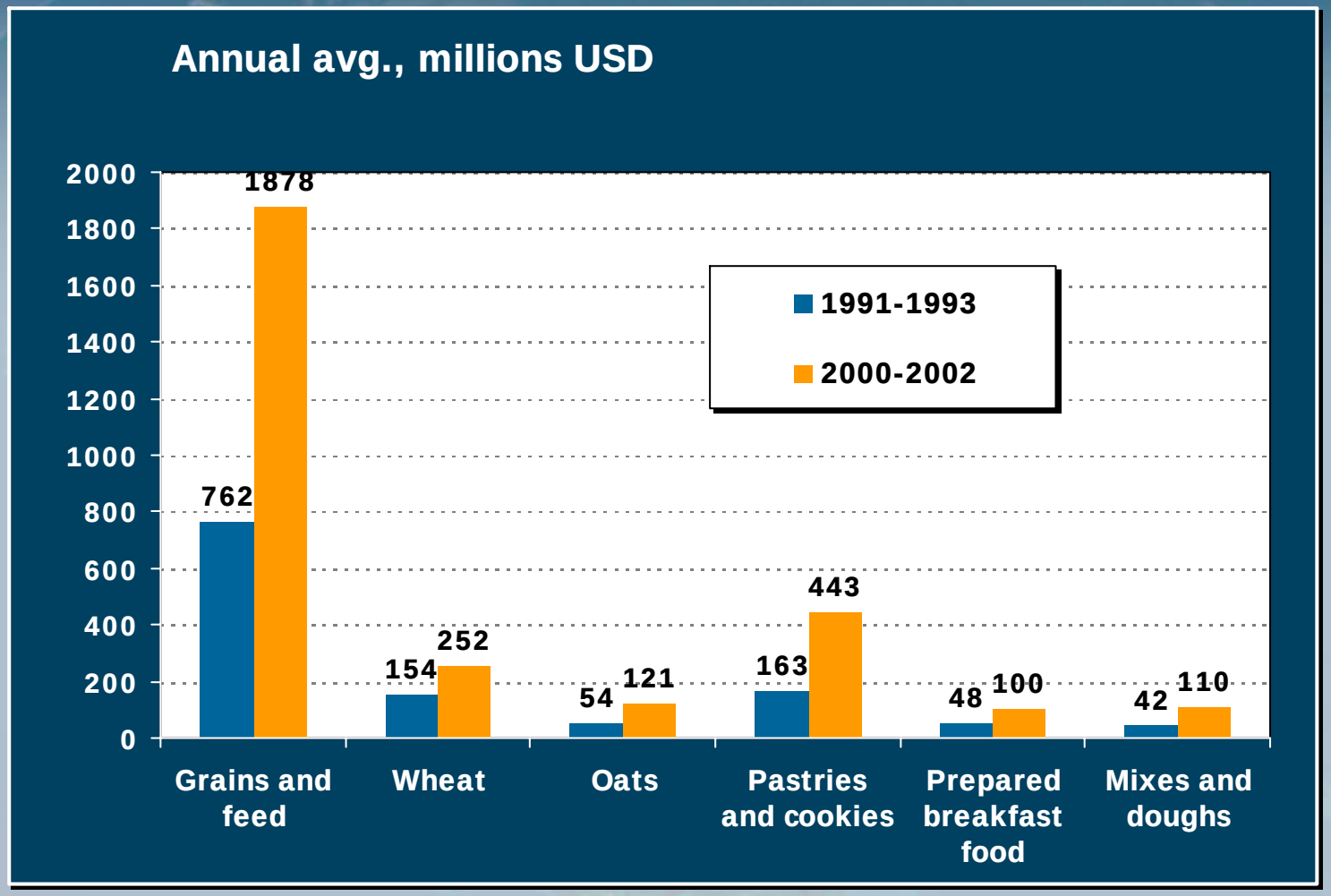
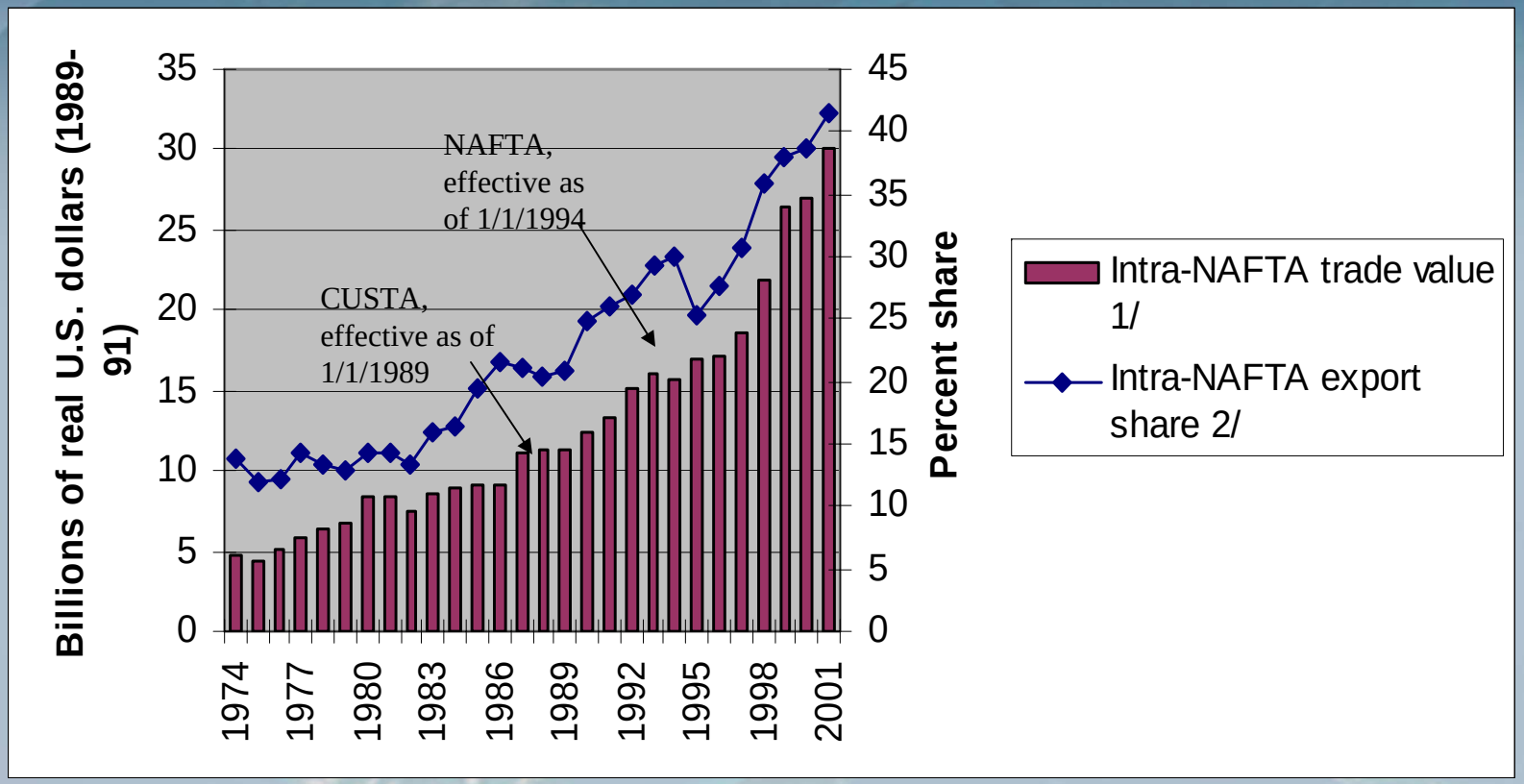


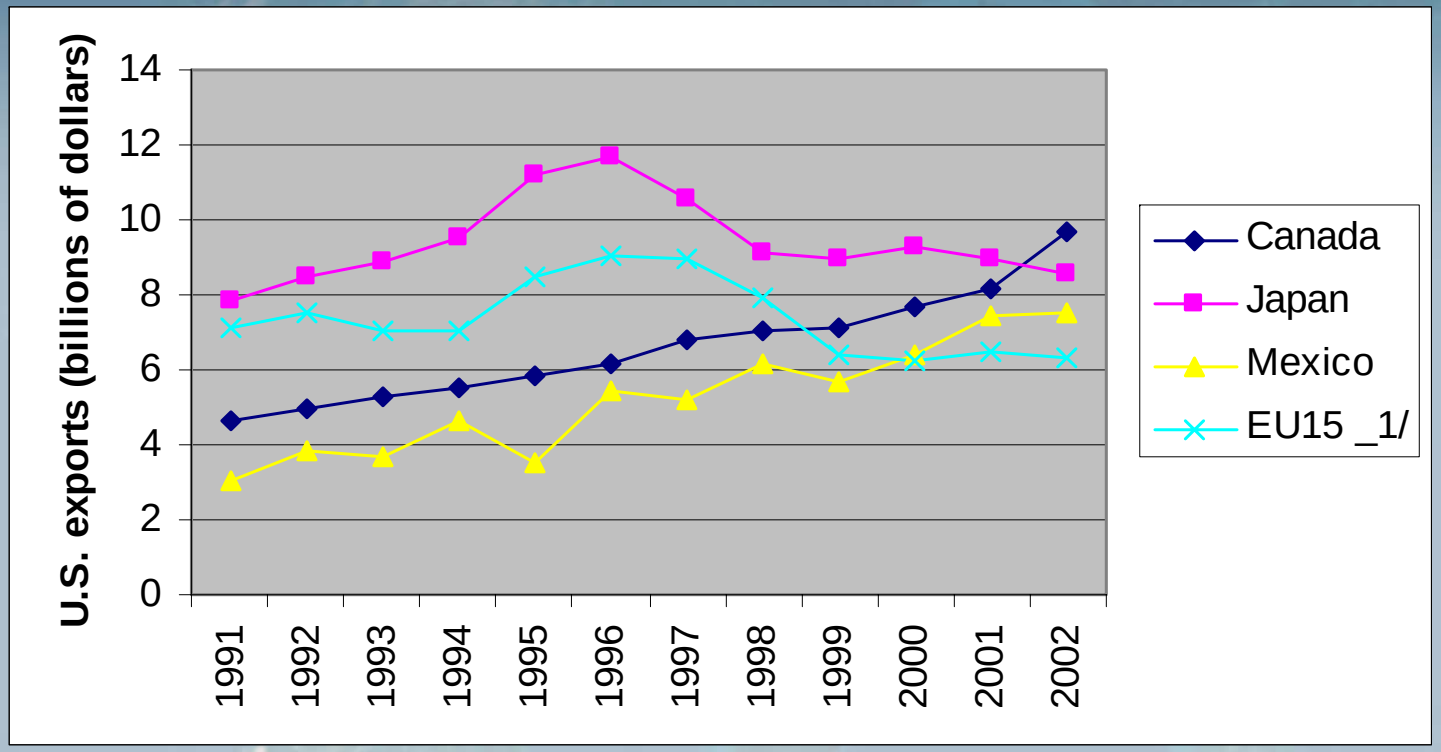
Figure 1: Trade shares show that intra-NAFTA agricultural trade grew faster than NAFTA trade with the rest of the world



1/ Intra-NAFTA trade value is the total value of U.S., Canadian, and Mexican trade with each other.

2/ Intra-CUSTA/NAFTA export share denotes trade among the NAFTA partners compared with their exports to countries outside of NAFTA.

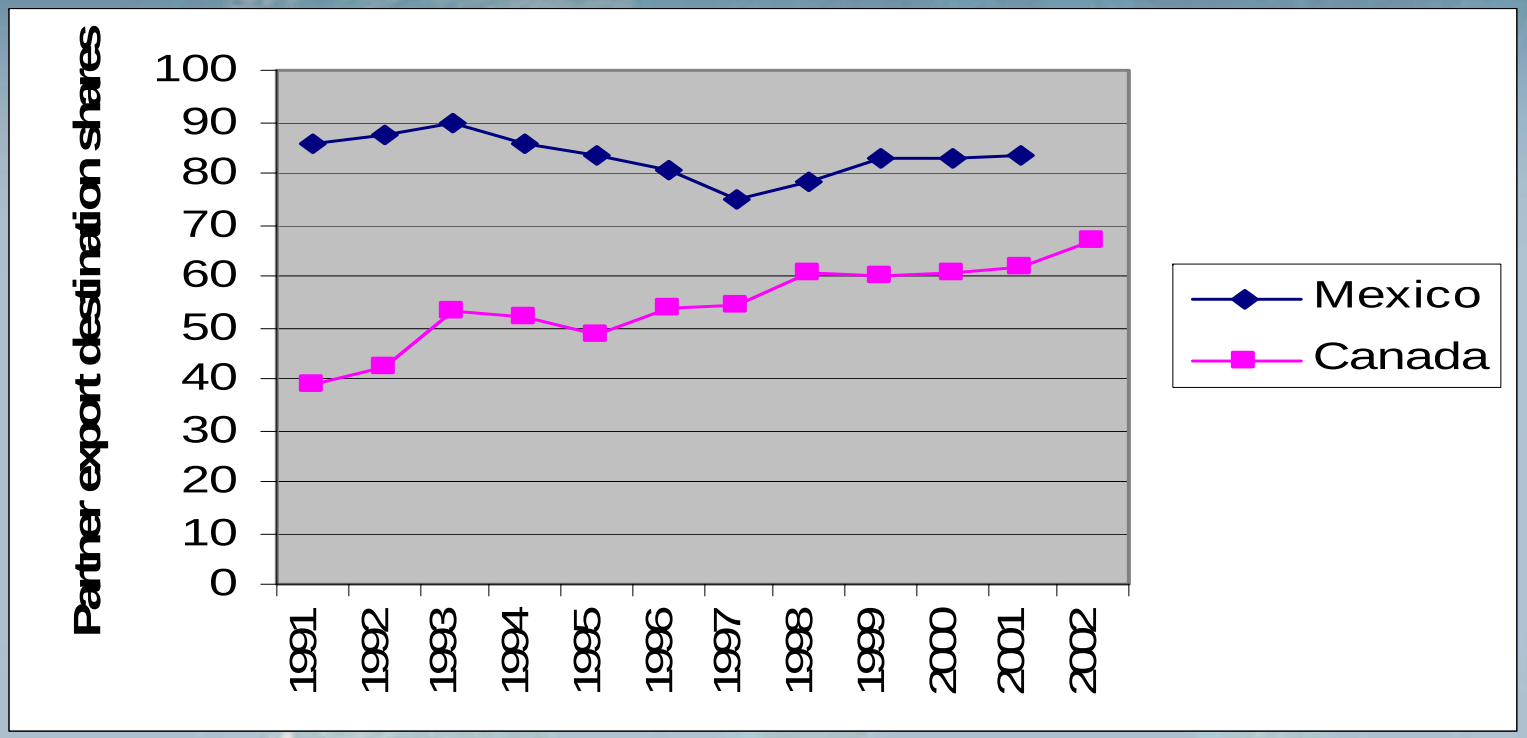
Figure 2: Canada and Mexico are becoming increasingly important markets for U.S. agricultural exports



_1/ Members of the European Union (EU15) include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

Source: UN Comtrade

Figure 3: The United States is also a very important agricultural market for exporters in Canada and Mexico



Source: UN Comtrade

Trade intensity indices also show increased dependence on NA market

- **Bilateral trade intensity indices (BTI's) measure relative importance of specific exporter in supplying imports to particular country in comparison with other supplying countries**

$$BTI_{\text{Canada-to-US}} \equiv \left(\frac{\text{Canadian exports to the US}}{\text{World exports to the US}}\right) / \left(\frac{\text{Canadian exports to the world}}{\text{World exports to all countries but Canada}}\right)$$

- **BTI's confirm that intra-NAFTA trade more important than extra-NAFTA trade**

- **US market is relatively more important for Canadian and Mexican exporters than Canadian or Mexican markets are for US exporters**
  - **BTI Canadian exports to US is 6 ; BTI US exports to Canada is 4**
  - **BTI Mexican exports to US is 7; BTI US exports to Mexico is 5**

Composition of NA agri-food trade is changing

- **Importance of bulk commodities declining**
- **Canada and U.S. trading more high-value processed products and intermediate goods**
- **Mexican exports now dominated by fresh produce and horticultural products, Mexican breweries also major force**
- **Intra-industry trade growing – particularly between Canada and US**
  - **Sign that production processes cut across border**
- **Evidence of increasing trade complementarities since CUSTA / NAFTA**
  - **Trade increasingly reflects comparative advantage**

The trade criterion can be misleading

- **Trade flows affected by many factors**
- **Discriminating monopolists segment markets to maximize profits**
- **Entrepreneurs may be indifferent as to with whom they trade**
- **Arbitrage may not be profitable due to transportation and marketing costs**

Theoretical yardstick: Price-based view of market integration

- **Consistency with LOP, Dornbusch, Rogoff**
- **Nationality not important, Goldberg & Knetter**
- **A matter of degree, Fackler & Goodwin**
- **S.R. & L.R. dynamics of price adjustments, Fackler & Goodwin**
- **"Market connectedness," McNew**
- **Rationale absence of arbitrage, Barrett**
- **Price variability, Hufbauer, Bradford & Lawrence**
- **"thickness" of product availability, Knetter & Slaughter**

Laymen's definitions

- **Removal of barriers to commercial exchange, Robertson**
- **No arbitrage rents, Harvey**
- **Market integration exists when product flows between countries are on the same terms and conditions as within countries, Knutson & Ochoa**
- **An integrated market consists of two or more economically *interdependent* but spatially separated markets in which there are *no barriers that distort trade* and investment activities across borders**

Law of One Price holds for Canada-US agri-food trade

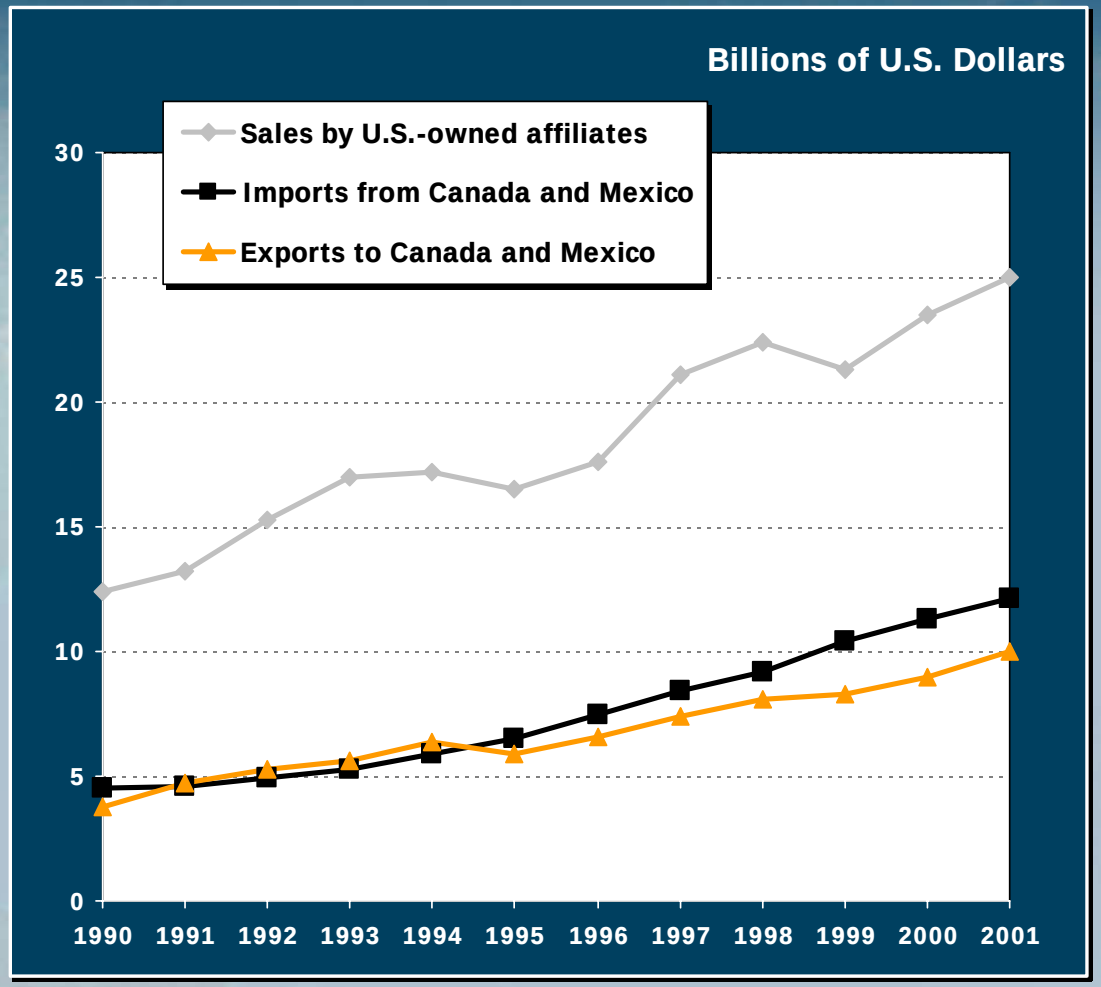
- **Econometric studies quantifying the degree of integration in commodity markets**
- **Prices in Canada/U.S. beef and pork markets highly correlated, supply-managed sectors less so**
- **Policy changes have increased price co-integration**
  - **Prices in Canada/U.S. wheat and barley markets more co-integrated following repeal of WGTA, NAFTA**
- **Asymmetrical price effects**
  - **Price shocks originating in the U.S. have greater impact on Canadian prices than vice-versa**
- **Law of One Price less useful in US-Mexico context**
  - **Incomplete exchange-rate pass through, high and variable Mexican inflation rate**

Trade agreements not the only factors contributing to integration

- **Geographical location & cultural heritage**
- **Technology: Advances in transportation, storage, and electronic communication**
- **Macroeconomic factors**
  - **Level of development**
  - **Exchange rates**
- **National policy goals**
  - **Market orientation of domestic policy key to capturing benefits from trade agreements**
  - **Trade agreements**
    - **Regional: CUSTA and NAFTA on market access, investment**
    - **Multilateral: WTO's URAA on export subsidies, domestic support**

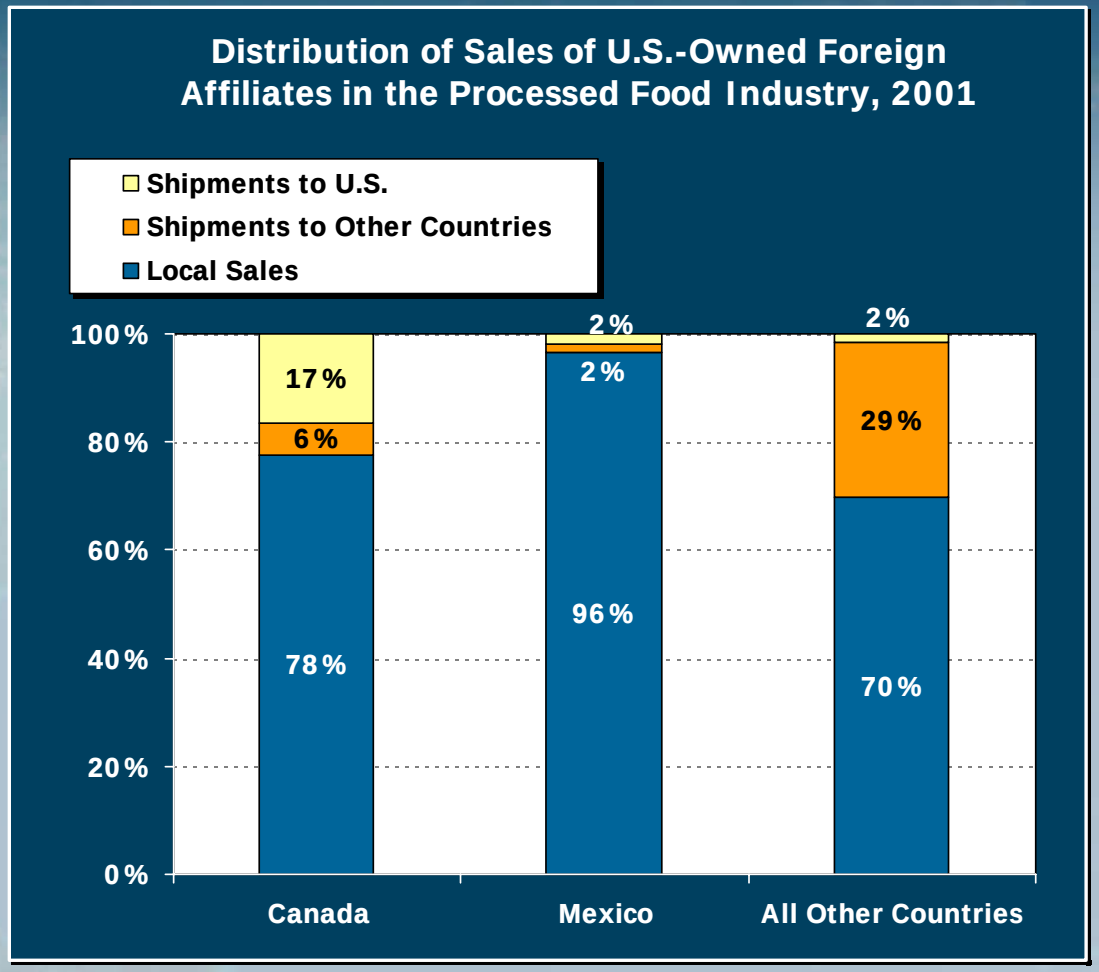
Foreign direct investment is an important element of integration

- **FDI in NA has grown tremendously since CUSTA/NAFTA**
- **Processed food demand in Canada, US, Mexico met more through FDI than trade**
- **Sales of US affiliates 2.5 times larger than exports of processed food to Canada or Mexico**



Most FDI is to serve domestic market

- **Most food companies in NA are "market-servers", not exporters**
- **Relatively more FDI in Canada is to serve US market**
- **Intra-NAFTA FDI not for purpose of exporting to rest of world**



Food firms display preference for majority ownership

- **Desire for control over brand, technology, and market development drives ownership decisions**
- **Typical steps to market entry**
  - **Export to test market potential**
  - **Strategic alliance with domestic firm**
  - **Foreign direct investment through mergers and acquisitions**
- **International joint ventures offer advantages**
  - **Anti-trust policy, access to distribution networks**
  - **Soft drink and brewing industries built solidly on international licensing**
  - **Cross-border contracting in production agriculture**

Big fish from Canada and Mexico now swim in bigger pond

- **Large firms in Canada and Mexico expand to take advantage of continental market**
  - **McCain (Canadian) operates 8 food processing facilities in US, one in Mexico**
  - **Weston Foods (Canadian) has large and growing share of US bakery products market, ¾ total corporate sales in US market**
  - **Gruma (Mexican) is largest producer of corn flour and tortillas in US, ½ total corporate sales in US market**

Link between integration and performance deserves more attention

- **More questions than answers**
- **Trade theory suggests gains from:**
  - **Specialization/comparative advantage**
  - **Economies of scale**
  - **Increased competition**
  - **Knowledge spillovers**
- **Benefits should be greatest in Mexico**
  - **Lower capital/labour ratio, low labour productivity**
  - **Higher agricultural tariffs**
  - **Greater access to US market**

Economic research needed to further policy discussions

- **Extent of price integration**
  - **No studies of price co-movements in Mexico-US agri-food markets & many US-Canada commodity markets remain unexamined**
- **Measurement of border transaction costs**
  - **As tariffs come down, impact of non-tariff barriers ever more important**
  - **Useful in the design of regulations and standards**
- **Effect of integration on competition**
  - **Relationship between increasing trade & investment and market power exercised by food companies**
  - **Input into design and enforcement of competition policy**

Economic research needed to further policy discussions

- **Effect of integration on productivity**
  - **Identify and quantify economic gains arising from trade and investment**
  - **Useful in trade communications**
- **Distribution of gains from integration**
  - **Many sub-sectors/regions are better-off, but some worse-off**
  - **Input into design of policies to ease adjustment**
- **Other topics?**