Measuring Production Abroad
(Draft Chapter 8, Global Production)

UNECE Meeting of the Group of Experts on National Accounts – Interim meeting on Global Production

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April 4, 2013
Section 1 – Introduction

- Challenge: Measuring domestic production and associated international trade flows in the world of globally fragmented production, in a consistent and internationally comparable fashion

- Measurement depends on
  - Conceptual framework and what is and what is not manufacturing, services and trade, under different production arrangements
  - An understanding what the associated data needs are and how these can be met, while preserving accuracy and managing response burden.

- National accounts
  - Complex framework
  - Multiple uses
Section 2: Data needs by typology

- A few pages that link to Chapter 1

- Uses the typology of Chapter 1 and outlines the basic data associated with the production models outlined

- Data needs are not dissimilar across typologies, though factoryless goods producers (FGPs) more of a challenge

- TBD: Consolidated table of data needs that can be referenced in Section 5
Section 3: International guidance ...

- ISIC4 focuses on ownership of material inputs for FGPs as manufacturers ... Possibly too narrow in new economic reality?

- Other industrial classifications (namely NAICS 2012) refer to a broader set of criteria for FGPs, including ownership of IPPs and output as well as control of the production process.

- Outside of discussions on processing and merchanting, SNA08-BPM6 does not say much on global production. With respect to ownership issues of FGPs they refer to risks-rewards ... Seems more in line with NAICS?
Section 4: Measurement challenges ... clarity

- International guidance less clear on the line between merchanting and processing and the related classification of firms ... Especially for FGPs
  - Degree of offshoring for FGPs: 100% or less?

- FGP criteria will be difficult to measure on traditional collection vehicles, whether targeted at production units (often establishments) or enterprises

- Affiliates, non-affiliates: Issues associated with FGP criteria
  - Foreign direct investment (>50% of voting shares) may be a key
  - FDI lasting interest linked to risks and rewards (ownership criteria)
  - FDI challenge of changing global corporate structures from M&A activity
Measurement challenges ... quality

- **Problems with existing estimates**
  - Manufacturing and trade surveys likely inadequate for merchanting-processing (sales, expenses, inventories); trade in services surveys exclude processing; merchandise trade statistics require adjustment
  - Distortions to current estimates of trade statistics and supply-use tables, especially with respect to cross-border processing

- **Data quality issues associated with new estimates**
  - Business versus economic measures: Classify FGPs by global parent or domestic activities?
  - Relevance: FGPs impact on labour and multifactor productivity; analytic value of inventories held abroad
  - Transparency: Much larger gaps between merchandise trade and SNA-BOP trade in goods
Section 5: Measurement approach – general considerations

- Profile firms engaged in global production – feasible if
  - Relatively small in number and concentrated in select industries
  - Focussed on major ones (accounting for large % of activity)

- Asking related ownership questions on surveys difficult ... QUALITY concerns, increased response burden
  - Manufacturing-trade surveys that may be establishment based may not be able to answer accurately
  - Enterprise surveys likely better

- Use a priori knowledge and assumptions ... One such assumption could involve FDIR
Measurement approach – strategy

- Consider phased-in approach ... provisional estimates
- Assess incidence of processing/merchanting, FGPs (known cases, economic intelligence, profiling of firms)
- Use harmonized industrial/commodity classifications; and understanding of business units across data sources
- Minimize new collection vehicles, not new information; use integrated approach, by leveraging several sources of information (centralized business register an asset); and, record linkages to construct and verify estimates
- Make use of good data confrontation practices
MANUFACTURING

- Identify revenues-expenses w/r to manufacturing on behalf of others ... and international processing (+ inventories abroad). Likely possible to estimate products (some level of aggregation) under processing ↔ merchandise trade detail

- For FGPs, add qualitative questions on ownership-control criteria ... Will survey units be able to accurately respond to these questions?

WHOLESALE-RETAIL TRADE

- Unlikely that merchanting is explicitly covered in surveys, such that questions or new breakdowns would need to be added ...
  - Goods purchased domestically for: (a) domestic sales; (b) sales abroad
  - Goods purchased from abroad for: (a) domestic sales; (b) sales abroad
  - Inventories of goods held abroad: (a) opening balance; (b) closing balance
Measurement approach – collection vehicles: Customs-based merch. trade

- **Objective:** Update SNA-BOP trade adjustments to eliminate processing gross flows and allocate net to trade in services ... matching new surveys; commodity details

- Merchandise can cross the borders for reasons other than trade with duty exemptions, that suggest additional useful customs forms available (processing) ... likely with commodity codes and fees paid
  - Basis of SNA-BOP adjustment; quality check on other measures

- Availability of importer-exporter registers allow for identification of detailed commodity trade back to the trading establishments ... Link to manufacturing surveys
Measurement approach – collection vehicles: Int’l. Trade in services (ITS)

- If no processing-merchanting information → new questions. Coverage issues, ITS firms not easy to identify and relatively small ... Implies enhanced frame-sampling, using profiling in manufacturing-trade sectors

- Content may also need to be updated to cover trade with affiliates and questions on ownership related to FGPs (efficient?)
Measurement approach – collection vehicles: Foreign direct invest. surveys

- Adequate coverage; information on MNEs’ ownership; for inward-outward FDI, identify-isolate majority owned affiliates by industry. Tie FDI ownership structures to manufacturing and/or trade data (record linkages)

- Alternative to questions on FGPs ownership → adopt set of rules based on FDI ownership-control of GP elements
  - Reduced response burden
  - Possible increased accuracy (than questions on activity surveys)
Measurement approach – collection vehicles: Foreign affiliates surveys (FAS)

- Make use of the FDI survey frame to identify majority-owned foreign affiliates (integrated with FDI surveys?)

- Sales of foreign affiliates typically cover
  - Foreign portion (exports) and often asks for sales back to country of the parent enterprise, sometimes including sales back to the parent enterprise and/or other affiliates enterprises

- Sales not typically broken down between final sales and processing arrangements, but such detail could be added

- Use FDI relationship or tie to additional questions on other surveys in the case of FGPs (e.g., record linkages with manufacturing surveys)
Measurement approach – collection vehicles: Broad enterprise surveys

- Collect domestic enterprise financial statistics — income statements / balance sheets for FIN/NON-FIN industries. Typically good coverage of universe

- Globalized production would largely take place among the larger enterprises, covered in the take-all strata → opportunity for qualitative/quantitative questions about global production, including ownership questions
  - Insert (e.g., additional schedule)
  - For a select group (target group) of multinational corporations identified from profiling

- Large instrument to collect processing-merchanting information (efficient?)
Measurement approach – collection vehicles: Surveys of IPPs

- Many countries instituted surveys (enterprise or legal entity) measuring R&D and IPPs ... designed in part to meet the SNA need to capitalize research and development

- Surveys cover questions on sales, property income, and IPPs purchases-fees, by IPP type, and sometimes cross-border activity. Can be linked to international trade in services and other surveys

- Supplementary questions on ownership and control of the production process associated with the IPPs ... but these might best be derived otherwise (efficient?)
Measurement – data confrontation

- **National data confrontation**
  - May involve cooperation across national compiling agencies ... ensuring that new estimates are consistent across the various surveys, and fit with adjusted international trade estimates
  - Ensure that the new estimates can be effectively integrated in the components of the national accounts
  - Ensure improved commodity balancing in the supply-use tables

- **International data confrontation**
  - Bilateral (multilateral) data confrontation as a best practice?
  - Important with new estimates to ensure international consistency in trade (and production) estimates for both domestic measures and measures of these activities abroad
  - **RESTRICTIONS:** Cost; legislation relating to confidentiality
  - Role for international agencies?
CONCLUSION ... APPENDICES

Measuring GP a medium-term objective
  • Country compilers likely to use variety of methods
  • Importance of data confrontation
  • Need for countries to convert to the ownership principles for trade in similar time frame – international consistency
  • Canada 2015 provisional measures; 2017 official measures?

- APPENDIX 1: MEASUREMENT
  • Case study: Approach to measuring global production in Canada

- APPENDIX 2: DATA CONFRONTATION
  • Case study: Canada-US bilateral trade and BOP-FDI reconciliations