

Impact of Globalization on the US Statistical System

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Presentation Outline

- Background
- International Statistical Community Response
- U.S. Statistical Community Response
- Implementation
- Expected Impact on Economic Statistics

BACKGROUND

Value and Production Chains

- **Value Chain**: The set of interrelated economic activities that contribute to the provision of a good or service starting with product development and ending with customer service
 - ▶ Global when some of the activities occur in different countries
 - ▶ Can involve any number of establishments and firms
- **Production Chain**: The set of economic activities within or among firms in a value chain needed to produce a specific product
 - ▶ Typically controlled by a lead firm
 - ▶ Global if activities occur in different countries

Fragmentation

- Traditionally, all production chain tasks were performed in one establishment or in multiple establishments of one firm
- Improvements in communications, technology and transportation allowed steps to be performed in different locations even internationally
- Establishment can focus on innovation and control all production chain tasks without directly performing any transformation
- Manufacturing industry statistics based on the output of establishments that perform transformation

Fragmentation and Economic Statistics

- Economic statistics not designed to handle the completely fragmented production model
- “But as the world has become infinitely more global and three-dimensional, ...statistics have not kept pace.... we are using a 1950s dashboard to operate a 21st-century machine.”¹
- Need a model that can accommodate production fragmentation decisions that are made by firms in response to continual changes in global economic conditions

The Washington Post, April 21, 2013, [It's an Old Numbers Game. What if They're Wrong?](#)

INTERNATIONAL RESPONSE

International Revision Process

- There are four different sets of methodological concepts and procedures used by the international statistical community
- Within last ten years, there were multi-year projects evaluating and updating processes for each
 - ▶ Slight differences in timing but collaboration across groups
 - ▶ Extensive outreach to gather conceptual input and feedback on drafts

International Guidance

- The International Standard Industrial Classification of All Economic Activities (ISIC Revision 4)
- System of National Accounts (SNA) 2008
- Balance of Payments and International Investment Position Manual, Revision 6 (BPM6)
- 2010 International Merchandising Trade Statistics: Concepts and Methods (IMTS2010)

Industry Classification

ISIC Revision 4

If an establishment outsources

- Parts, but not all of the production process:
 - ▶ Classify as if it were carrying out the complete process
- The complete production process:
 - ▶ If not goods production, classify as if it were carrying out the complete process
 - ▶ Goods production
 - If it legally owns the inputs, classify in manufacturing
 - If not, classify in trade

National Accounts

- SNA 2008 and BPM6 - Record trade based on change of economic ownership
 - ▶ Economic ownership of processed goods is tied to legal ownership of inputs
- When ownership does not change:
 - ▶ Goods for further processing are excluded from trade flows
 - ▶ For the resulting good, value of the processing service is included as a services trade flow
 - ▶ No goods trade flow for the finished good

Treatment in Trade Statistics

- Multiple uses for trade statistics
- Priority to the need for statistics that reflect physical cross-border movement of goods
- Recognized inconsistency with National Accounts
 - ▶ Countries encouraged to explicitly identify in their trade statistics goods for processing and goods resulting from such processing

U.S. RESPONSE

U.S. Response

- Economic Classification Policy Committee (ECPC) handles NAICS classification issues for the U.S.
- NAICS 2007 and earlier
 - ▶ No clear guidance on establishments that outsource all their manufacturing activities
 - ▶ Inconsistent classification decisions
 - ▶ May have affected U.S. economic measures
- ECPC actions
 - ▶ Chartered a research team to identify characteristics and classification options for establishments involved in goods production
 - ▶ Posted Federal Register Notice asking for input

Production Establishment Characteristics

Group identified three types of establishments involved in goods production

Type of Establishment	Characteristics
Integrated Manufacturer	Performs all the tasks of the production chain
Manufacturing Service Provider	Performs transformation tasks but does not perform production management tasks
Factoryless Goods Producer	Does not perform transformation tasks but performs all production management tasks

Classification Options Considered for FGPs

1. Manufacturing

- ▶ outsourcing transformation tasks is no different than outsourcing other tasks.
- ▶ Allows returns to intellectual property to be included in manufacturing sector.

2. Wholesale trade

- ▶ Composition of labor and capital expenses are similar
- ▶ Wholesale trade margins are for buying and selling only
- ▶ FGP margins would include design and production oversight

3. Management of companies and enterprises

- ▶ Both manage the manufacturing process
- ▶ Ignores design and de-emphasizes selling

Classification Options Considered for FGPs (cont.)

4. Research and development

- ▶ If FGP acquires design, there is no R&D activity
- ▶ would have to expand R&D sector definition to include this selling of products

5. Split based on location of transforming establishment

- ▶ Manufacturing if it is domestic
- ▶ Wholesale trade if it is foreign
- ▶ Doesn't handle establishments that switch or outsources both domestically and internationally

ECPC Decisions

- Classify FGPs in manufacturing in NAICS
 - ▶ Consistent with treatment of similar types of establishments in other sectors
- Encourage sub-industry breakdowns by IM, MSP and FGP, when appropriate
- Rejected ISIC decision to use legal ownership of inputs for classification
 - ▶ Focus on entrepreneurial risk
 - ▶ Decision to outsource individual steps in mfg process should not change classification
- Deferred implementation from 2012 to 2017

IMPLEMENTATION

International Implementation Planning

- In 2007, Conference of European Statisticians (CES) created an expert group that produced “Impact of Globalization on National Accounts” in 2011
- As follow up, CES asked Statistic Netherlands to elaborate on issues resulting in “In-Depth Review on Global Manufacturing”
- CES formed Task Force on Global Production responsible for developing guidance on unresolved issues related to SNA2008 and BPM6 and on implementation aspects of these standards

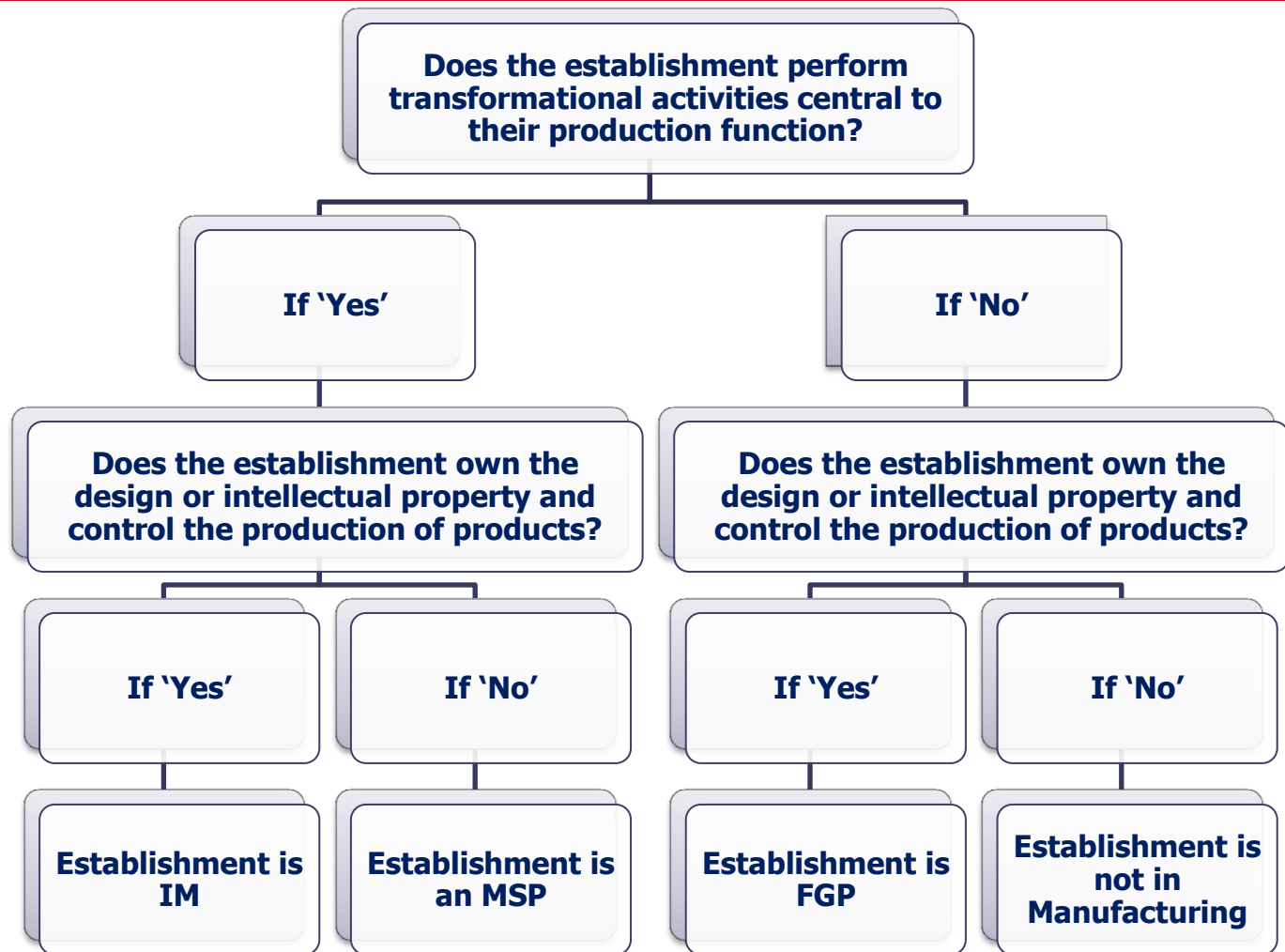
Task Force on Global Production

- Team presented draft report on conceptual issues and measurement challenges related to global production
- Based on comments, it will be updated to include more guidance and practical examples and will be published as a guide
- Also produced a report on Factoryless Goods production questioning the ISIC focus on ownership of materials.

U.S. Implementation Planning

- Inter-agency FGP Implementation Group formed by ECPC in June 2010 to support implementation of manufacturing redefinitions
 - ▶ New definitions impact detailed procedures and data for multiple programs in BLS, BEA, FED and Census
 - ▶ New concept requires interpretation – the devil is in the details
 - ▶ Need same interpretation across agencies and programs to support data consistency
 - ▶ Also need to implement SNA Goods for further processing concept

Establishment Classification



Refining FGP definition

- Concept of economic ownership is central to the FGP designation. The economic owner:
 - ▶ Owns or controls rights to intellectual property or design
 - ▶ Can independently change product design
 - ▶ Controls production, has the ability to:
 - control inputs, choose product lines, set output levels
 - ▶ Owns the final product
 - ▶ Sets price of final product
 - ▶ Sells or arranges for sale of the final product
 - ▶ Assumes entrepreneurial risk. Responsible for losses.
 - ▶ Can report market value of final product, number of units produced, cost of mfg services purchased

Issues Related to 'Ideal' Implementation

- Differences between international and U.S. decisions
- Issues that reporting establishments might have in providing the information required to support classification decision making
- Limitations to implementation procedures related to the availability of resources within statistical agencies
- Difficulties is determining economic ownership among establishments of multinational enterprises

Multinational Enterprise Establishments

Classification Challenges:

- Difficult to determine which establishment controls IP and controls production
- Transactions may not be recorded on economic owner's books for reasons such as taxes.
- Typical survey respondents may not have information needed to classify and determine the value of the output in these complex situations

Multinational Enterprise Establishments

Proposed solution:

Create interagency data sharing group to make recommendations related to classification and output of MNE establishments

Advantages

- Consistent interagency decisions
- More efficient use of resources

Challenges

- Difficulty getting approval for multi-agency MOU
- May require IRS approval

Interagency Data Needs

For successful implementation, data must be created to:

- Allow programs to produce continuous time series data
- Allow agencies to make data adjustments to account for differences between US and international definitions of FGP concept
- Support production and analysis of data using manufacturing redefinitions

Highest Priority Data Needs

- For each industry, 2012 and 2017 value of shipments (VOS) for all establishments moved into and out of the industry due to the manufacturing redefinition
- Separate VOS from IM, MSP, and FGP activities by industry and by product for 2017 forward, when appropriate
- Frame sources for the Producer and International Price Programs

Determining Respondent Data Availability

Need to understand what outsourcing related data that establishments can provide:

- Census, BEA and PPI have added questions to surveys to test questions, determine what data may be available, and provide input for comparisons between 2012 and 2017
- Started information gathering outreach to understand how companies manage their outsourcing activities
 - ▶ Contacting associations and companies
 - ▶ Analyzing publicly available company data

Outreach

- Acceptance of the concept of a factoryless goods producer will require a paradigm shift for many people and organizations
- Educational outreach needed to explain changes prior to publication of data based on the redefinitions
- Staged approach
 - ▶ Internal programs and agencies
 - ▶ Associations as background to obtain input
 - ▶ Outside experts
 - ▶ General public – after additional research and implementation details and timing is known

Future Implementation Plans

- Continue refining survey questions to allow production of economic statistics under manufacturing redefinition
- Continued research through outreach and data analysis to support implementation decisions and determine if changes need to be made to the 'ideal' implementation scenario
- Using outputs from the International Task Force, where appropriate
- Individual statistical programs identify business processes required for implementation and determine when they can be made

EXPECTED IMPACT

General Impact on U.S. Economic Statistics

- Impacts come from both new industry classification rules and changes to national accounting procedures
- Exact impact will depend on decisions that are made when data for 2017 is collected.
- In general, mix between goods and services is expected to change
- Changes in manufacturing sector will be centered in specific industries

Expected Impact on US Employment and Wages

Measure	Impact
Total U.S. Employment and Wages	<ul style="list-style-type: none">▶ No change to total▶ No change to regional totals
Sector Employment and Wages	<ul style="list-style-type: none">▶ Values will shift across sectors with manufacturing growing and other sectors shrinking. Little or no shifts for production employees

Expected Impact on US Revenue and Trade Statistics

- FGPs may report revenues from products that would have previously been treated as imports
- For FGPs previously classified in wholesale trade, revenues will reflect full product value rather than margins for some measures
- For manufacturing establishments that are determined to be MSPs rather than IMs, revenues will reflect value of the manufacturing service they provided rather than full product value
- No impact on overall trade balance but it shifts the balance between goods and services

Gauging the Impact of Redefinition 2007 Wholesale Trade Census

Own-brand importers/marketers

- Account for about 3 percent of the number of wholesale trade establishments and 3.7 percent of total revenues for the sector
- If all moved to manufacturing, would account for about 4 percent of the number of manufacturing establishments and 4.5 percent of total manufacturing revenues

Wholesalers that own product design

- Account for about 15% of wholesale trade establishments and 20% of total employment for the sector¹

1 Outsourcing, Offshoring and Trade: Identifying Foreign Activity Across Census Data products, (Jarmin, Krizan and Tang)

Gauging the Impact of Redefinition Manufacturing Industries

- Six measures were identified as potential indicators of FPG activity likelihood
- Measures were calculated for each industry and preliminary analysis was done
 - ▶ 126 industries accounting for 27% of establishments, 25% of employment and 20% of VOS were very likely to be impacted
 - ▶ 157 industries accounting for 23% of establishments, 34% of employment and 35% of VOS were very likely not to be impacted

Gauging the Impact of Redefinition on Manufacturing Industries

- Five measures linked to import penetration and current use of outsourcing and were identified as potential indicators of potential FPG activity.
- Values were calculated for each industry and for overall manufacturing
- Industry values were compared to manufacturing industry average to place each industry in a category

	# of industries	% of total establishments	% of employment	% of total VOS
Highest likelihood	145	33	30	25
Medium likelihood	161	40	34	39
Lowest Likelihood	165	27	36	36

Sectors with Largest Expected FGP Impact

Sector	Title	% Sector VOS from 'most likely' industries
315	Apparel manufacturing	86.9%
334	Computer and electronic product manufacturing	77.4%
339	Miscellaneous manufacturing	75.6%
314	Textile product mills	47.9%
333	Machinery manufacturing	46.9%
316	Leather and allied product manufacturing	43.6%

Sectors Least Likelihood of FGP Impact

Sector	Title	% Sector VOS from 'least likely' industries
322	Paper manufacturing	94.0%
321	Wood product manufacturing	87.6%
326	Plastics and rubber products manufacturing	86.7%
311	Food manufacturing	77.0%
327	Nonmetallic mineral product manufacturing	54.6%
336	Transportation equipment manufacturing	54.5%

Gauging the Impact of Redefinition 2007 Management of Corporations

551114, Corporate, Subsidiary and Regional Managing Offices

- Includes 1,865 establishments (out of 41,382 total industry establishments) with revenues from sales of merchandise
- Revenue from sale of merchandise accounted for 24% of total industry revenue

Top 5 Product Lines

- Other machinery & equipment
- Chemical & Petroleum
- Food & Beverages
- Clothing & apparel
- Motor vehicles & parts

Questions for FESAC

- Do you have any suggestions for handling the difference between the ECPC and International Accounting definitions of FGPs?
- If resources constraints limit the abilities of individual programs and agencies to fully implement these definitions, do you have any suggestions for prioritization?
- Given the potential impact of this change, do you have any suggestions related to outreach that might ease the transition?
- Any suggestions for facilitating decision making related to classifying and determining the value of the output of establishments of Multinational Enterprises?
Given that we expect to encounter significant hurdles in attempting to create cross-agency data sharing agreements, should we use resources to investigate the creation of an interagency data sharing and decision making group?
- Are there any issues related to the topic that you think we have overlooked?

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