Global assessment of linking trade statistics and the business register

United Nations Statistics Division

Linking Trade Statistics to SBR

A. Background

B. Integrated Economic Statistics & Business Registers

C. The Linking Exercise: Steps and Costs and Benefits

D. Results of Global Assessment on national practices of linking the Business Register to trade statistics

E. Possibilities and examples (Trade by Enterprise Characteristics (TEC))

F. Challenges and ways forward

UNSD involvement with SBRs

- UNSD **promotes** creation and maintenance of national Statistical Business Registers as a core element in the implementation of integrated economic statistics
- UNSD actively **participates** in various fora related to business register, such as Wiesbaden group or UNECE Task Force on SBR
- UNSD **contributes** to initiatives on SBRs in all regions, including
  - Africa – AfDB Guidelines on Business Registers
  - Europe – CES Guidelines on Statistical Business Registers – with a commitment to bring this to UN Statistical Commission
  - Asia – SBR development is part of the 2008 SNA implementation program
- UNSD **supports** implementation of linking trade and business statistics in countries (i.e., Costa Rica, Zambia, and Malaysia, etc.)

The role of the statistical business register (SBR)

	Role	Goal
1	SBR Live Register	The gateway between (different) source(s) and the statistical units
2	SBR Backbone	Coordinate populations of statistical and administrative units in space & time
3	SBR Sample Frame	Provide set of administrative units valid for the reference period with all attributes to draw a sample
4	SBR Survey support	Control administrative burden and monitor survey response
5	SBR Statistics	Business demographic dynamics based on register snapshots
6	SBR Global data exchange	Coherence in global statistics
7	SBR Information Source	Support market investigation performance

The SBR & an integrated economic statistics programme

The guidelines on Integrated Economic Statistics (IES) were published in 2012. The advantages of IES are:

- Use of **harmonized terminology, definitions, concepts, & classifications**
- **Consistency** in measuring economic activity across sectors and regions and global consistency of key economic indicators
- **Greater accuracy** by reconciling discrepancies among data sources
- Use SBRs to provide **central sampling frame** for all business surveys
- **Standardize surveys**, including survey design and sample frame
- **Link and integrate data across various statistical domains**, including linking the information about enterprises from the SBR to other data sources
- **Reduction of collection *and* reporting burden** by using the same information for different purposes

How an SBR can be used to link data from different sources

- By linking the SBR to economic statistics and other data sources (e.g., administrative data or survey responses), new information can be compiled that would not otherwise exist.
- One effective and proven application is linking the SBR to trade statistics to compile **trade by enterprise characteristics (TEC),** which can be compiled for **merchandise trade, trade in services, & foreign direct investment**.
- TEC data aim to describe trade flows from the view point of enterprises:
  - **Impact of international trade on employment, growth and income** (by kind of industry, size of enterprise and other characteristics)
  - **Effectiveness of trade policies** (e.g., export-promotion, effects on 2-way traders and foreign affiliates)

The Linking Exercise: steps and benefits and costs

1. Establish clear guidelines regarding agenc(ies) **responsible for maintaining** the SBR
2. Ensure quality of SBR information via **broad use of sources** and **regular updating**
3. Maintain **unique identifier (e.g., ID#, name) for businesses** across data sources at the national level
4. Define a **common statistical unit of analysis** (e.g., "enterprise") across data sources
5. Define a **level detail** for the linked data (depends on the variables maintained in SBR)
6. **Link** the importer/exporter to the business and its characteristics in the business register
7. Compile and validate trade by enterprise **(TEC) indicators**
8. Apply **confidentiality rules** to disseminated data

Potential benefits:

- ✓ Additional and better statistical information about internationally active enterprises
- ✓ Improved data quality, e.g., through consistency checks across different sources
- ✓ Cost savings, e.g., through survey coordination and reduction of response burden

Potential costs:

- ✓ Major investment of time & resources for development & maintenance of an SBR
- ✓ Establishing adequate institutional arrangements and overcoming legal obstacles, especially regarding data sharing, exchange provision, and confidentiality of micro-data
- ✓ Requires significant efforts in terms of methodology, technology and human resources

UNSD Global assessment of linking trade statistics and SBRs

Global Survey on national practices in linking trade statistics and business registers in the summer of **2015** to all NSOs

➔ **Received responses from 94 national statistical systems**

28 OECD and 66 non-OECD countries

Regional distribution:

20 Africa

15 Americas (4 OECD, 11 non-OECD)

38 Europe (21 OECD, 17 non-OECD)

21 Asia and Pacific (3 OECD, 18 non-OECD)

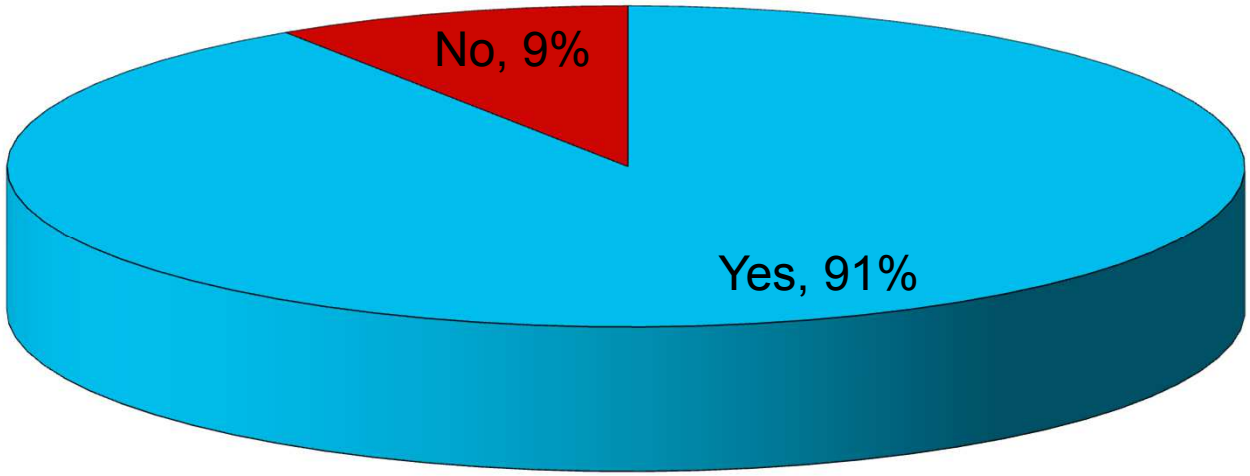
In 2013, UN Global Survey on general characteristics of the SBR

116 responses: 32 OECD and 84 non-OECD countries

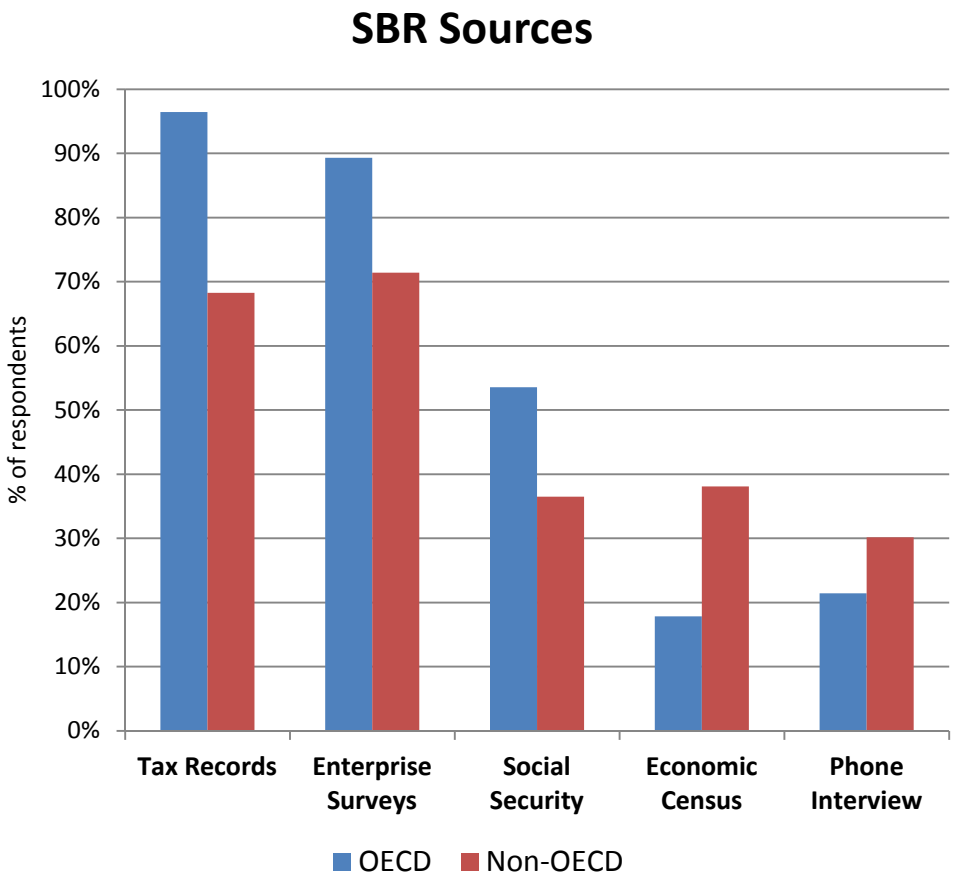
Countries that maintain an SBR

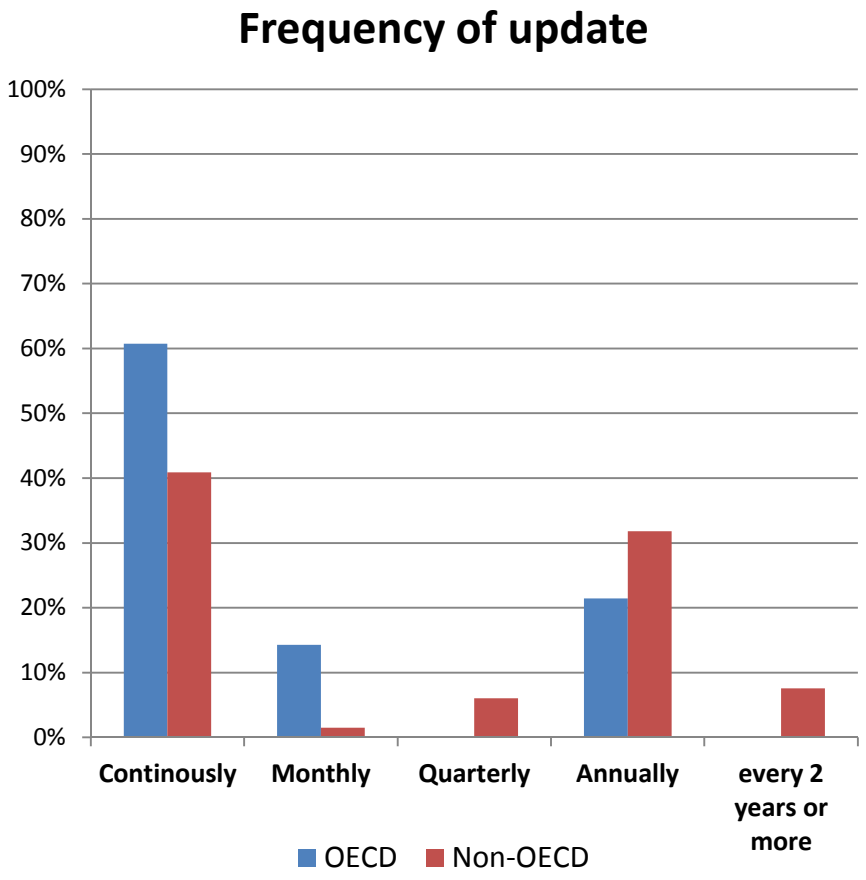
Of the countries responding to the survey in 2015, **91%** currently maintain a statistical business register.

Only **9%** do not (mostly in Asia-Pacific and Africa regions).

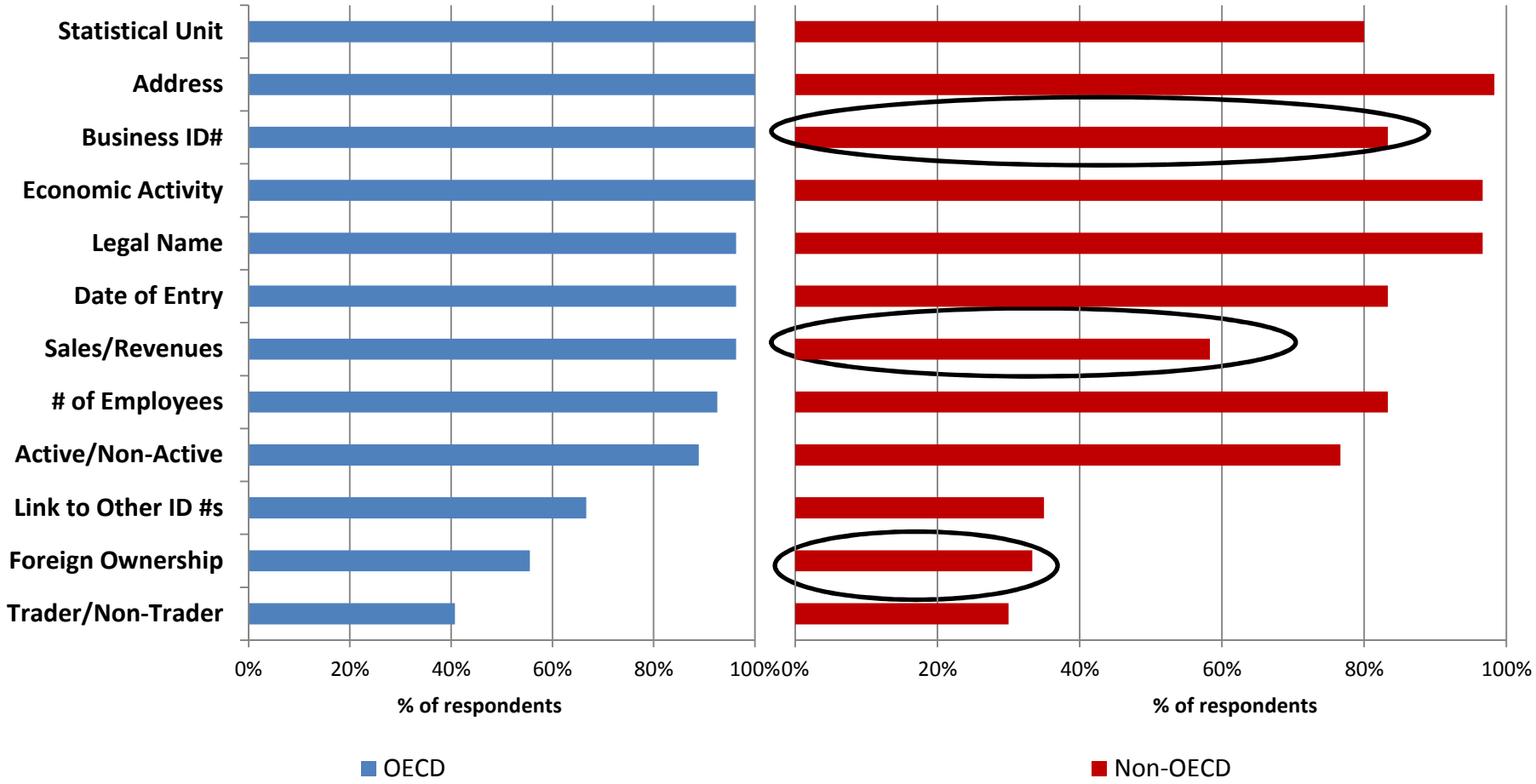


Sources used to update the SBR





Variables maintained in SBR

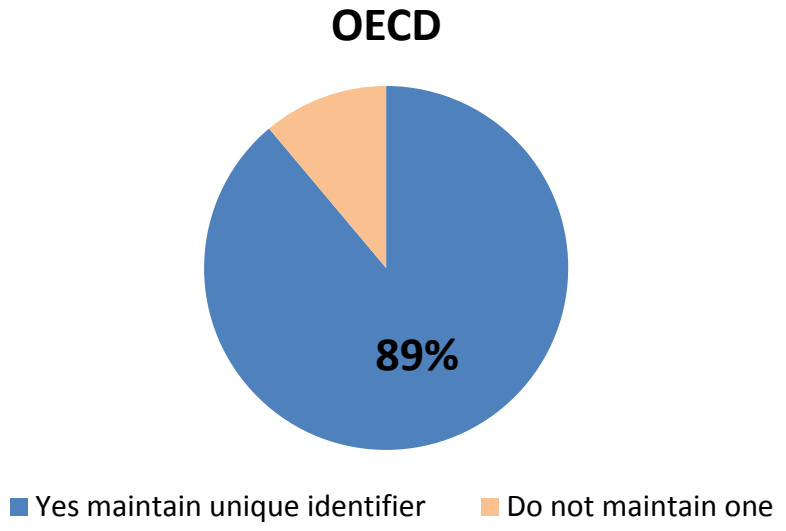


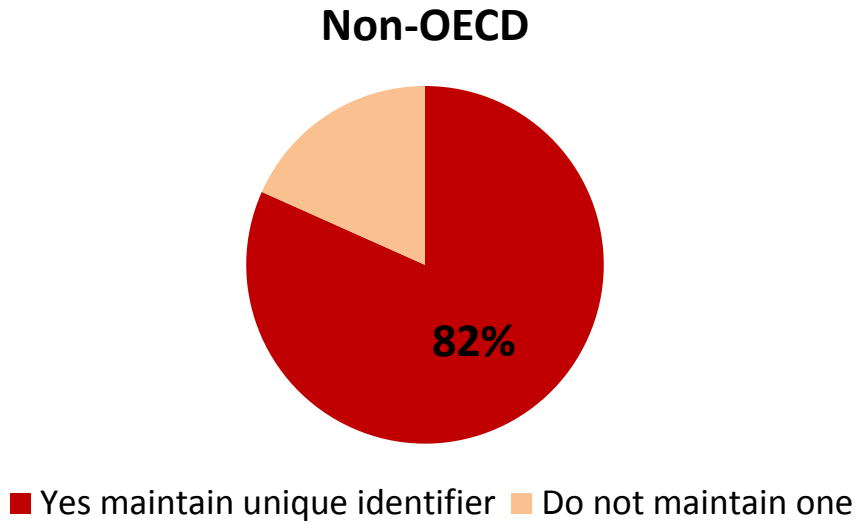
- For nearly all respondents SBRs include legal name; address; and economic activity.
- Less commonly-maintained variables are identification of trader/non-trader (maintained by 33% of all respondents) and percentage of foreign ownership (cited by 40% of all respondents). Such information would be relevant to information about multinational corporations and foreign direct investment, but can alternatively be collected via surveys.

Maintaining a unique identifying number for enterprises

•Implementing a unique identifying number for enterprises that is common throughout the statistical system is a key step needed to conduct the linking exercise.

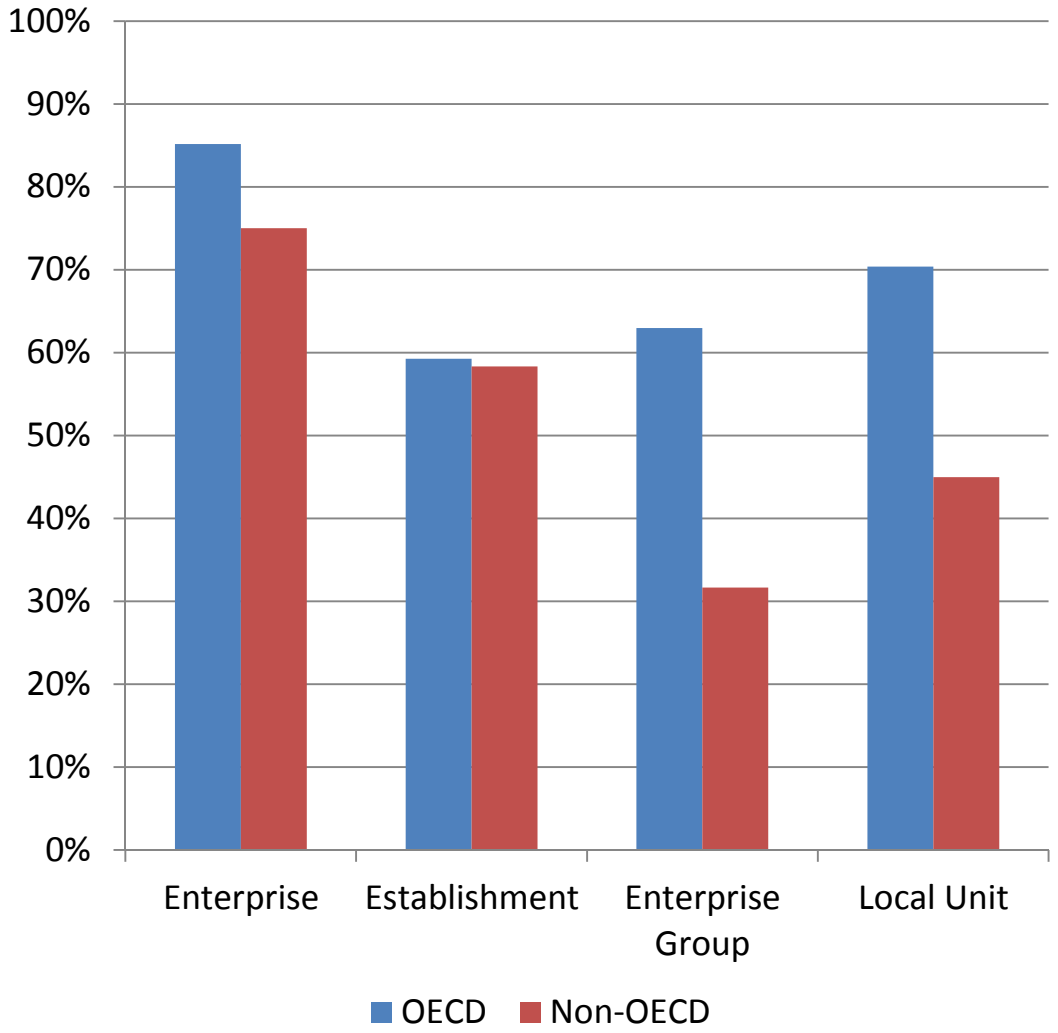
•While a vast majority of survey respondents indicated that they maintain a unique identifying number for each enterprise, if such a number is not available, enterprises can and should be identified with unique legal names and addresses that can be later linked to identifying numbers used in other parts of the statistical system or in administrative data, such as tax identification numbers.





Statistical unit(s) used in SBR

- Most commonly used statistical unit is the Enterprise
- Compared to 2013 survey, more non-OECD countries have added Enterprise Group (up from 22% to 33%)



Challenges cited when attempting to link trade statistics to the SBR

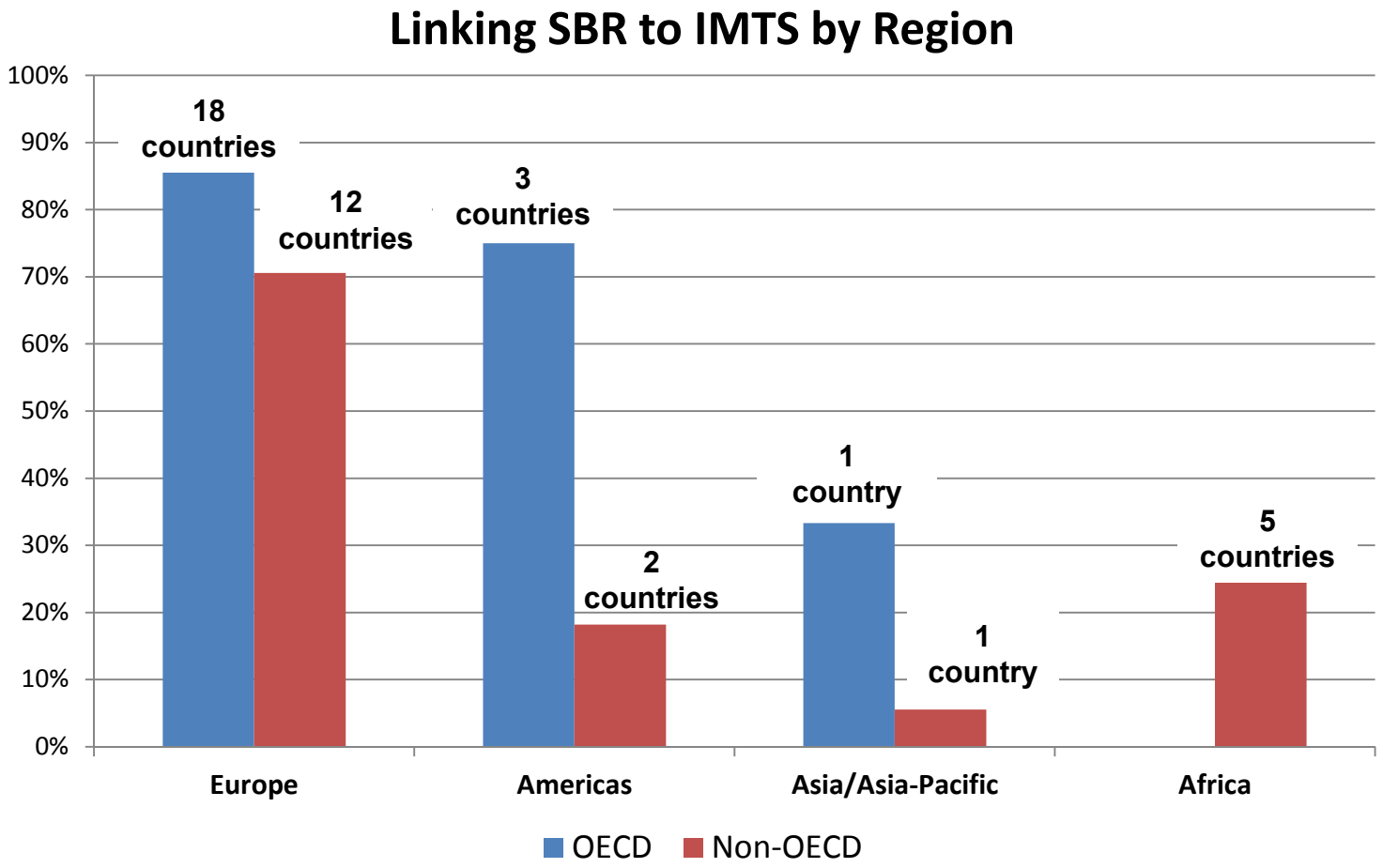
The most commonly cited challenge is ***matching enterprises or establishments*** between the enterprises in the trade statistics and the enterprises of the SBR

Followed by:

- Human Resource constraints
- Many wholesalers or distributors
- Methodology
- Many forwarding agents or other intermediaries

Linking international merchandise trade statistics (IMTS) to the SBR

- **45%** of all respondents (79% of OECD countries and 30% of non-OECD countries) reported that they are currently linking IMTS to SBR
- **80%** of these countries are linking enterprise (in trade statistics) to enterprise (in the SBR)



Global assessment of dissemination of TEC variables

23. How are trade by enterprise characteristics disseminated? Please check all that apply.

	Value	Quantity	# of enterprises
Trade by economic activity (ISIC)	☐	☐	☐
Trade by enterprise size (number of employees)	☐	☐	☐
Trade by enterprise size (turnover)	☐	☐	☐
Trade by (sub-national) geographic location	☐	☐	☐
Trade by foreign ownership	☐	☐	☐
Other	☐	☐	☐

OECD TEC Database

Dataset: TEC trade value by sector and size class of enterprise

Flow	Imports				
Reporter country	Germany				
Partner zone	Total				
Indicator	Trade value (in millions of USD)				
Year	2012				
Size class	Total	0-9	10-49	50-249	250+
Unit					
ISIC sector (revision 4)					
Total economy	1163230	64386	101060	166618	585154
Industry (exc. construction)	548322	7936	19930	74590	428308
Wholesale, retail trade and repair	..	..	..	..	..
Other sectors	..	..	..	..	..
Agriculture, forestry and fishing	1575	503	419	218	178
Mining and quarrying	1610	25	799	176	602
Manufacturing	517762	0	18521	0	401374
Electricity, gas, steam and air conditioning	26500	358	132	524	25299
Water supply; sewerage, waste/remediation	2451	141	478	769	1034
Construction	3082	822	726	557	674
Wholesale, retail trade and repair	330445	48939	68685	82371	115756
Transportation and storage	30995	1789	4327	2422	22032
Information and communication	6926	572	684	1071	4389
Financial and insurance activities	3799	384	367	229	2242
Real estate activities	6844	374	216	90	376
Professional, scientific and technical activities	17512	1886	3463	3981	5747
Administrative and support service activities	7138	518	1590	442	4003
Accomodation and food services; non market services	4218	662	653	647	1449
Unspecified	404749	..	..	..	..

Data extracted on 03 Sep 2015 21:40 UTC (GMT) from OECD.Stat

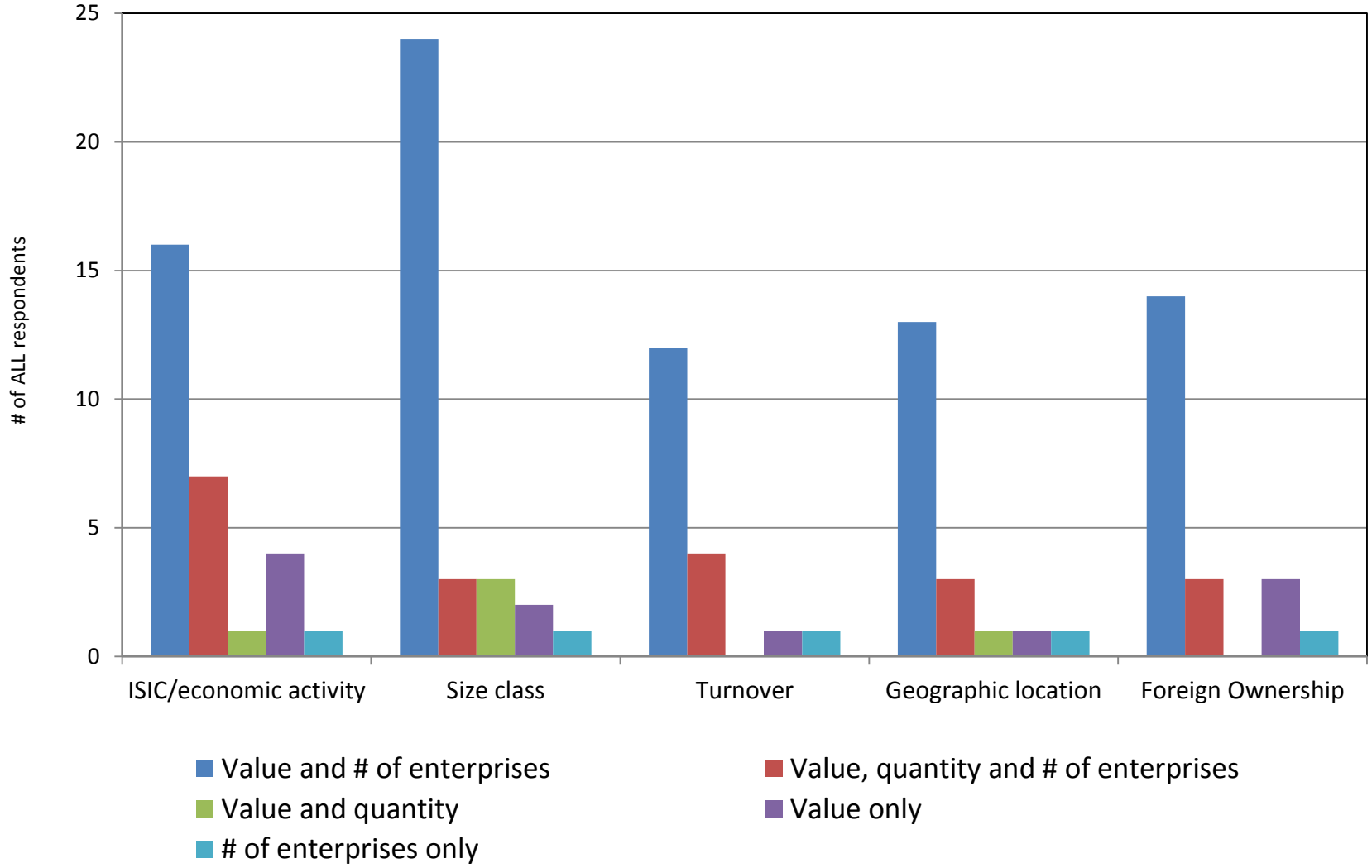
OECD TEC Database

Dataset: TEC number of trading enterprises by sector and size class

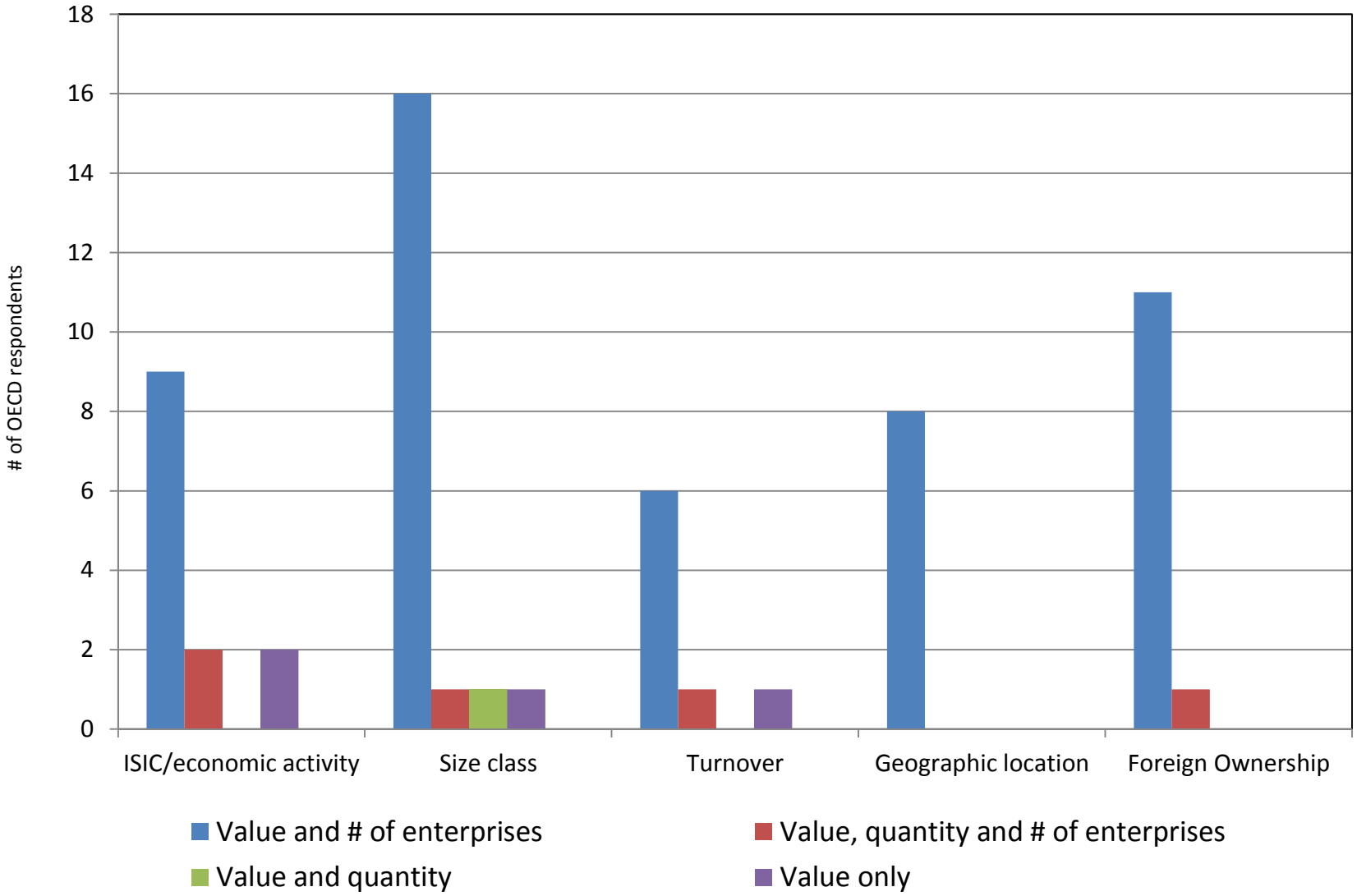
Flow		Imports				
Reporter country		Germany				
Partner zone		Total				
Indicator		Number of trading enterprises				
Year		2012				
Size class		Total	0-9	10-49	50-249	250+
Unit						
ISIC sector (revision 4)						
Total economy		602600	247814	85661	24959	7530
Industry (exc. construction)		90199	35437	25838	12089	3381
Wholesale, retail trade and repair		..	..	..	..	..
Other sectors		..	..	..	..	..
Agriculture, forestry and fishing		12044	6574	1468	179	18
Electricity, gas, steam and air conditioning		2543	573	194	183	134
Water supply; sewerage, waste/remediation		1875	582	654	295	96
Construction		40078	22603	8213	1199	168
Wholesale, retail trade and repair		230950	123069	30484	5625	1234
Transportation and storage		9222	3951	2614	960	283
Information and communication		16849	6993	3108	975	270
Financial and insurance activities		2047	505	221	240	295
Real estate activities		12397	1738	308	83	27
Professional, scientific and technical activities		28079	11696	3855	937	304
Administrative and support service activities		15348	7094	2493	688	258
Accomodation and food services; non market services		55346	28154	7059	1984	1292
Unspecified		180082	..	..	..	..

Data extracted on 03 Sep 2015 21:40 UTC (GMT) from OECD.Stat

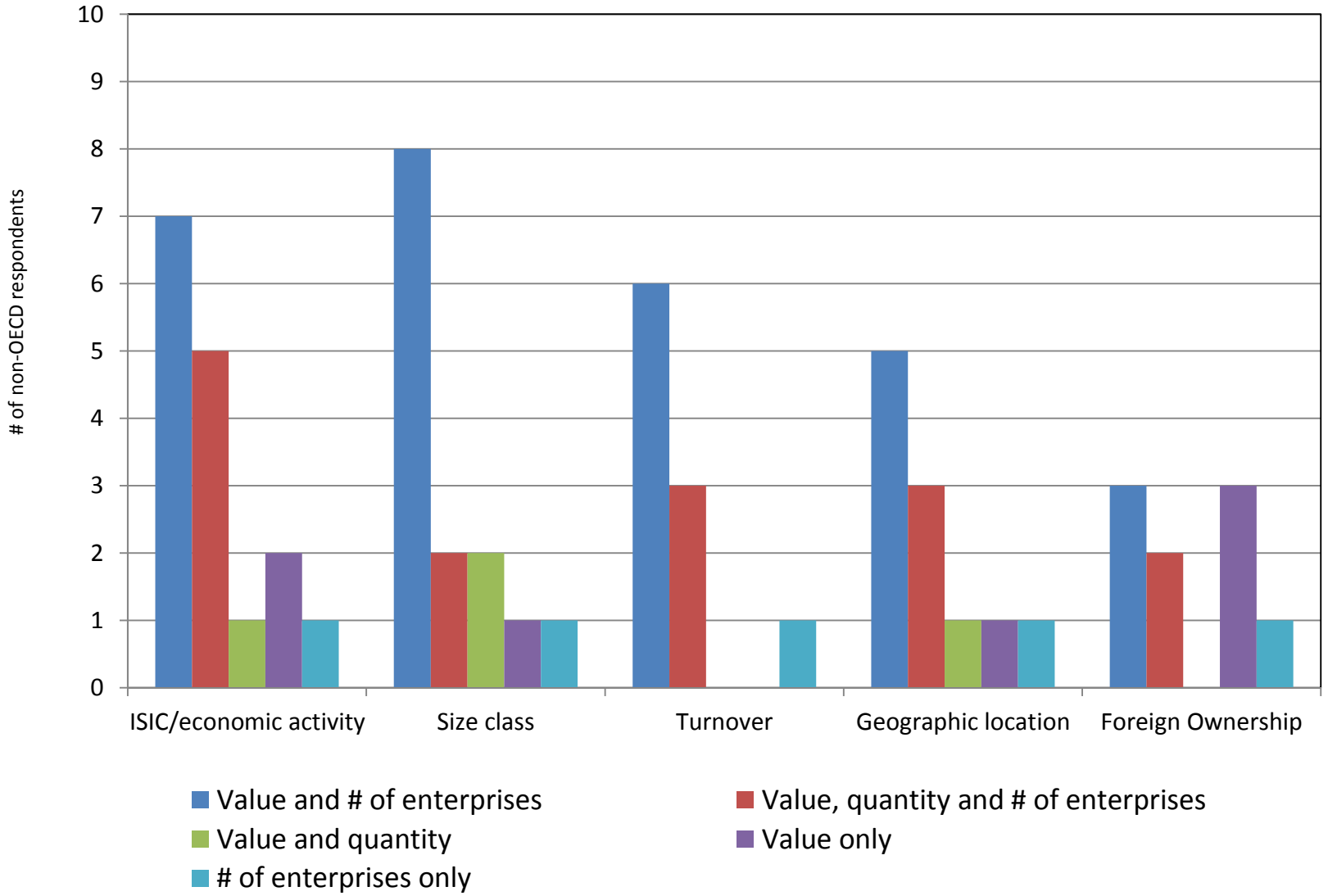
Dissemination of TEC variables by all respondents



Dissemination of TEC variables by OECD respondents

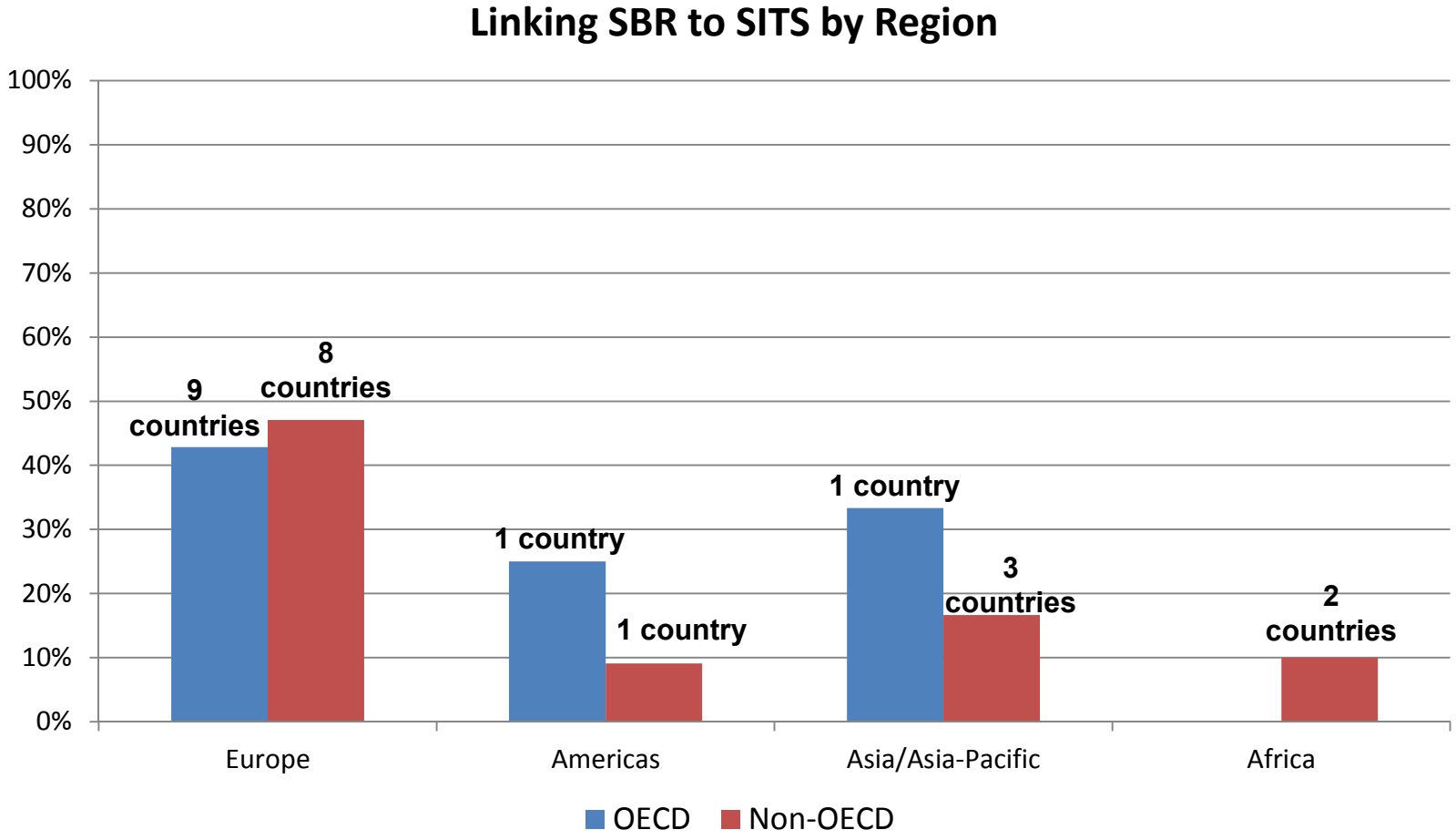


Dissemination of TEC variables by non-OECD respondents



Linking statistics of international trade in services (SITS) to the SBR

- **27%** of all respondents (**39%** of OECD countries and **23%** non-OECD countries) reported that they are currently linking SITS to SBR

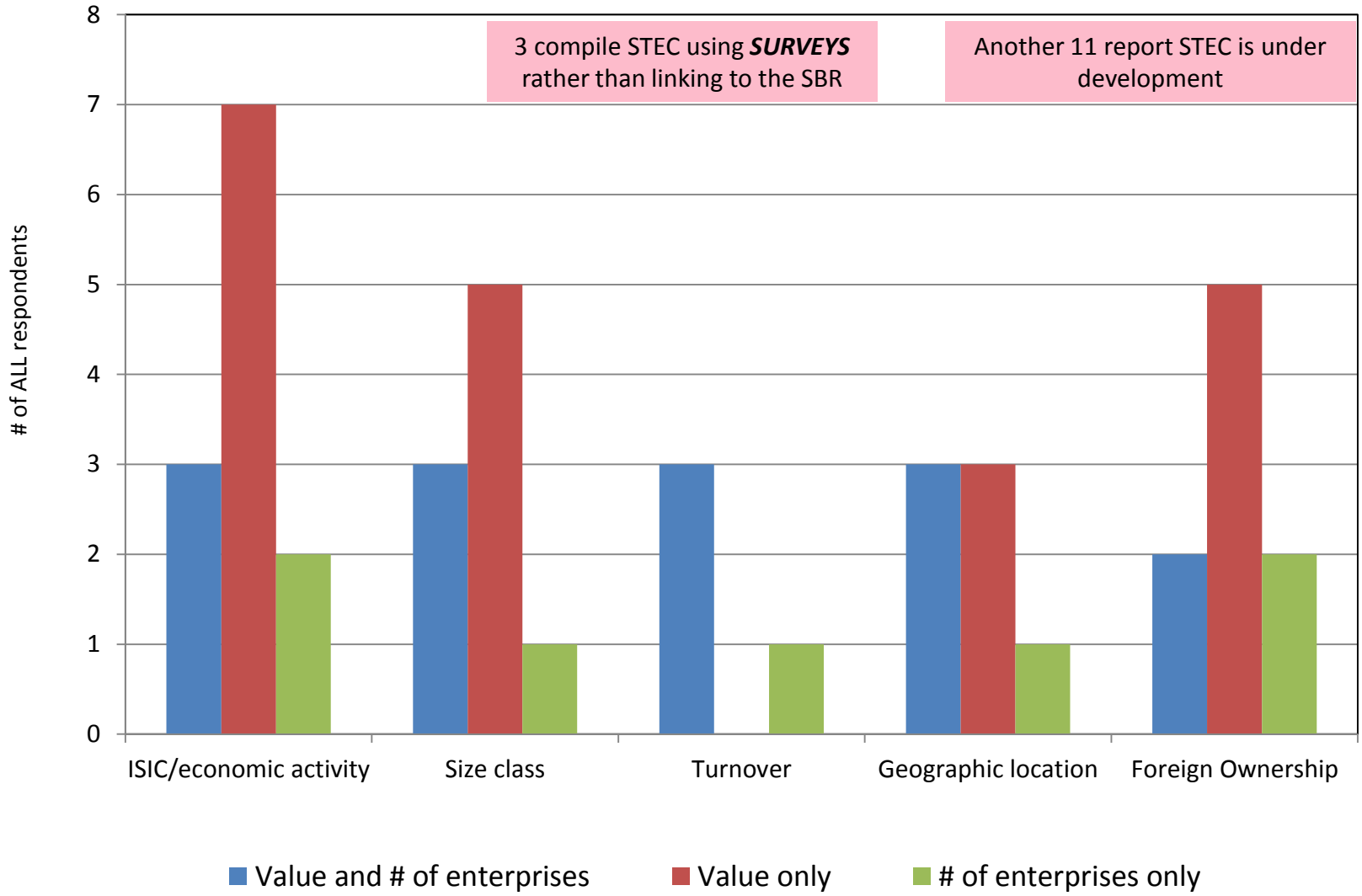


Global assessment of dissemination of STEC variables

32. If statistics of international trade in services are indeed linked to the SBR, how are the data disseminated? Please check all that apply.

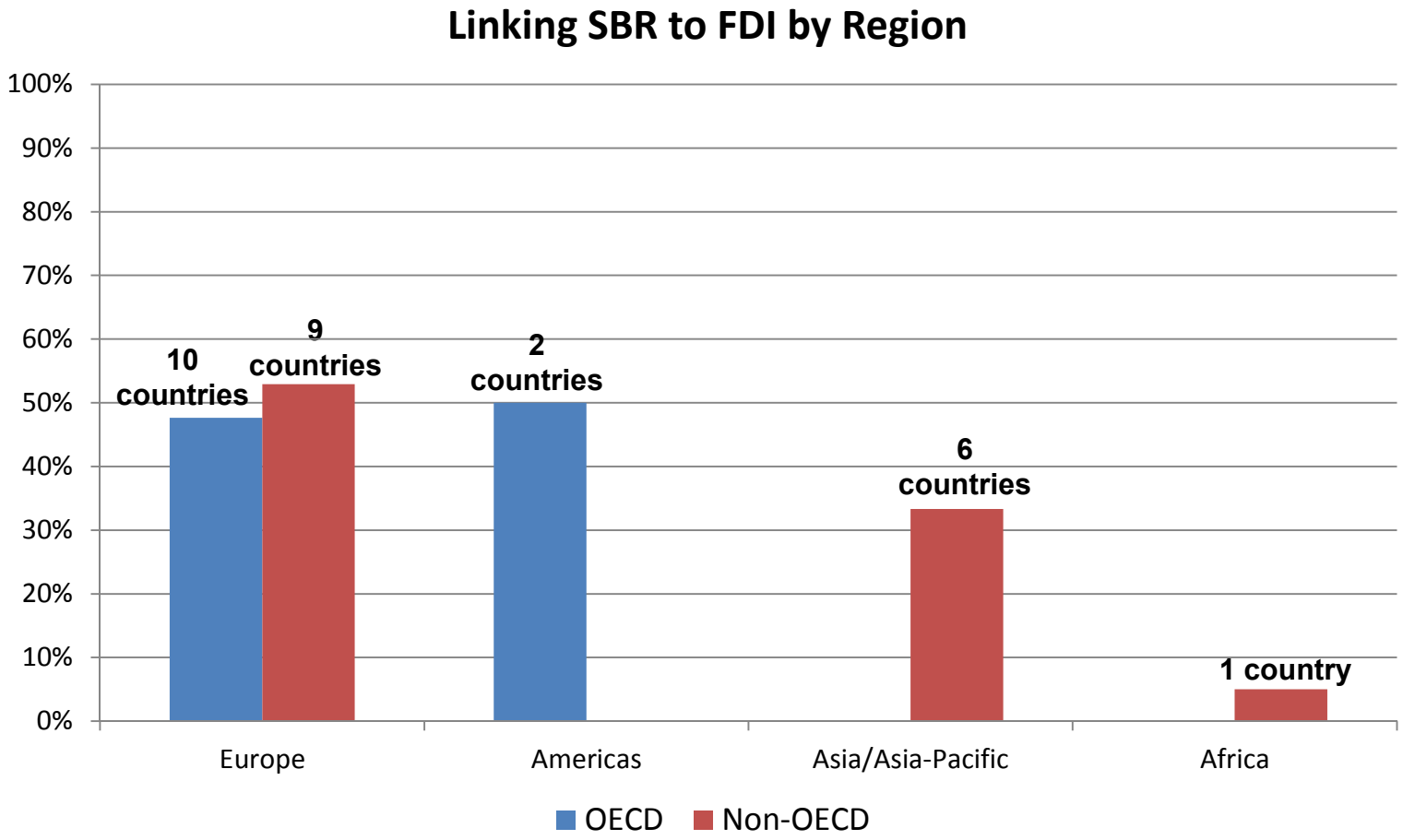
	Value	# of enterprises
Trade by economic activity (ISIC)	☐	☐
Trade by enterprise size (number of employees)	☐	☐
Trade by enterprise size (turnover)	☐	☐
Trade by (sub-national) geographic location	☐	☐
Trade by foreign ownership	☐	☐
Other	☐	☐

Dissemination of STEC variables by all respondents



Linking foreign direct investment statistics (FDI) to the SBR

- **30%** of all respondents (**43%** of OECD countries and **24%** non-OECD countries) reported that they are currently linking FDI to the SBR

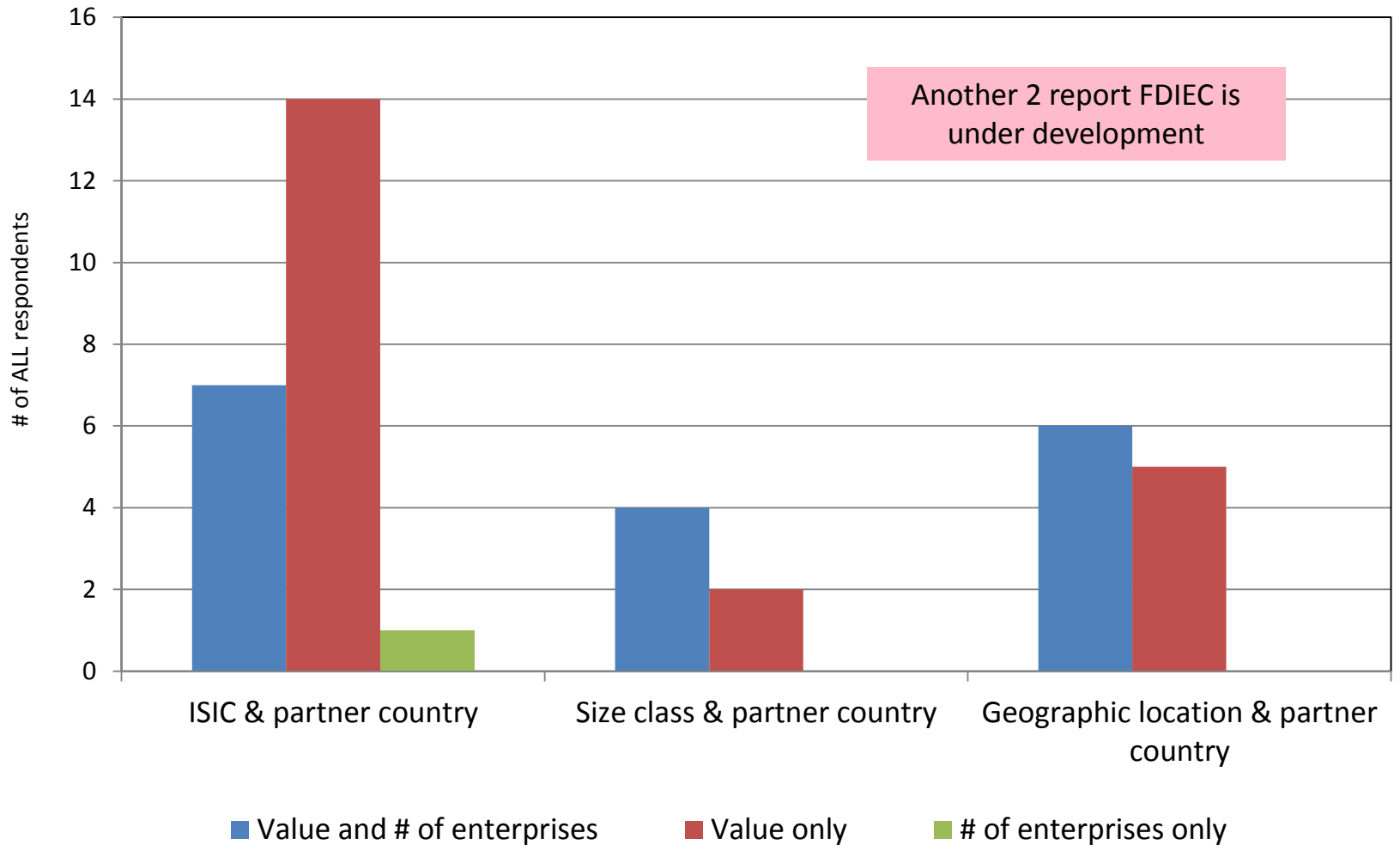


Global assessment of dissemination of FDIEC variables

35. If FDI statistics are indeed linked to enterprise characteristics, how are they disseminated? Please check all that apply.

	Value	#of enterprises
FDI by economic activity (ISIC) and partner country	☐	☐
FDI by enterprise size and partner country	☐	☐
FDI by geographic location and partner country	☐	☐
Other	☐	☐

Dissemination of FDIEC variables by all respondents



Confidentiality issues

Confidentiality of disseminated TEC data:

- 38% of respondents reported that the confidentiality rule for their disseminated TEC data is at least 3 enterprises per cell.
- Another 29% report requiring at least 3 enterprises plus secondary confidentiality rules (like p% rule) or more than 3 enterprises per cell.

Confidentiality of internal micro-level TEC database:

- 26% of respondents report maintaining a micro-level TEC database
- Of which, only 20% of respondents report that their micro-level database is available outside the statistical office to researchers on a limited basis

Ways Forward

UNSD Supplement to IMTS 2010 Compilers Manual

- To include a section on **linking Trade Statistics to the SBR**, including **best practices**, **country examples**, and **analytical results** from the 2015 Global Assessment
- Will also include compilation guidance on:
  - External Trade Indices
  - Results of the Decennial National IMTS Compilation Practices global survey
  - SDMX
  - Eurotrace

Handbook on a System of Extended International Global Accounts

- Will build on existing work in this area, in particular by the UNECE, the OECD and Eurostat, and address issues of **micro-data linking of business and trade statistics**, as well as address the integration of economic, environmental and social dimensions of trade and globalization as an extension of the 2008 SNA and the System of Environmental-Economic Accounting 2012 (SEEA 2012)

Thank you