

Linking Business Registers to Trade Statistics



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United Nations
Statistics Division





Linking Business Registers to Trade Statistics

- A. Background
- B. Integrated Economic Statistics & Business Registers
- C. Benefits and costs of linking the Business Register to other sources
- D. Results of Global Assessment on national linking practices
- E. Examples of disseminated Trade by Enterprise Characteristics (TEC) indicators
- F. Challenges and ways forward



International work and guidance on 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 working groups for business registers, such as the Wiesbaden group or UNECE Task Force on SBR
- UNSD **supports** implementation of linking trade and business statistics in countries (i.e., Costa Rica, Zambia, and Malaysia, etc.)
- 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



The role of the statistical business register (SBR)

- Traditionally, SBRs have provided sample frames for economic surveys

	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 UN Statistical Commission recommends national statistical offices to adopt an integrated approach to economic statistics in order to attain:
 - ✓ **Consistency** in measuring economic activity across sectors and regions
 - ✓ **Global consistency** of key economic indicators
 - ✓ **Greater accuracy** by reconciling discrepancies among data sources
 - ✓ **Reduction collection and reporting burden** by using the same information for different purposes

How to create an integrated economic statistics programme?

Use harmonized terminology, definitions, concepts, & classifications

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



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

By linking the SBR to a range of economic statistics and other data sources (such as administrative data, survey responses, etc.), new information can be compiled for many analytical purposes 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 the 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 / policy 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 and resources** for development and maintenance of a business register
 - ✓ **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**

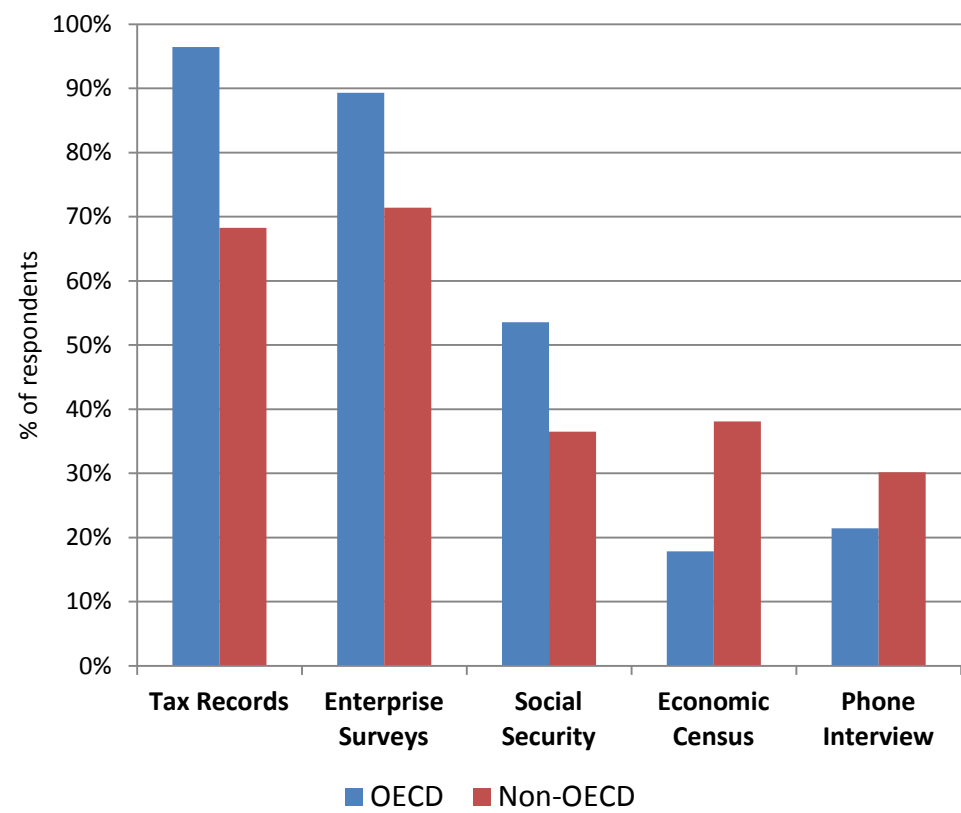


- UNSD administered the global [Survey on national practices in linking trade statistics and business registers](#) in the summer of 2015 to all NSOs on these topics
- 94 economies have responded
 - 28 OECD and 66 non-OECD
 - Regional distribution:
 - 20 Africa
 - 15 Americas (4 OECD, 11 non-OECD)
 - 38 Europe (21 OECD, 17 non-OECD)
 - 21 Asia and Pacific (3 OECD, 18 non-OECD)
- This complements the previous survey UNSD administered to all NSOs in 2013, on general characteristics of the SBR
- 116 economies responded
 - 32 OECD and 84 non-OECD

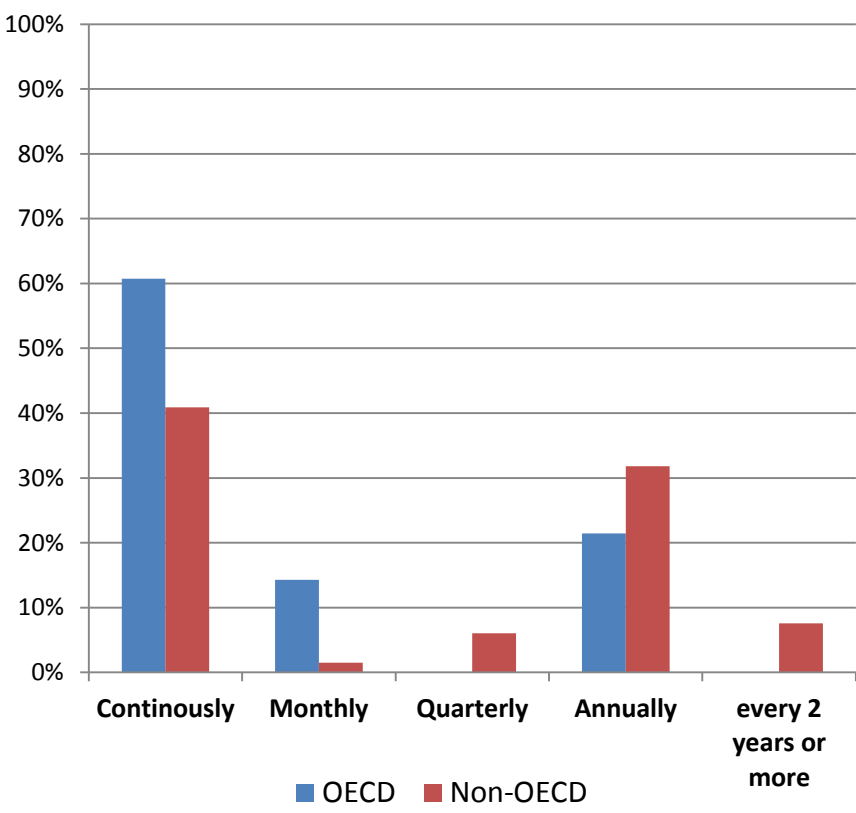


Sources used to update the SBR

SBR Sources

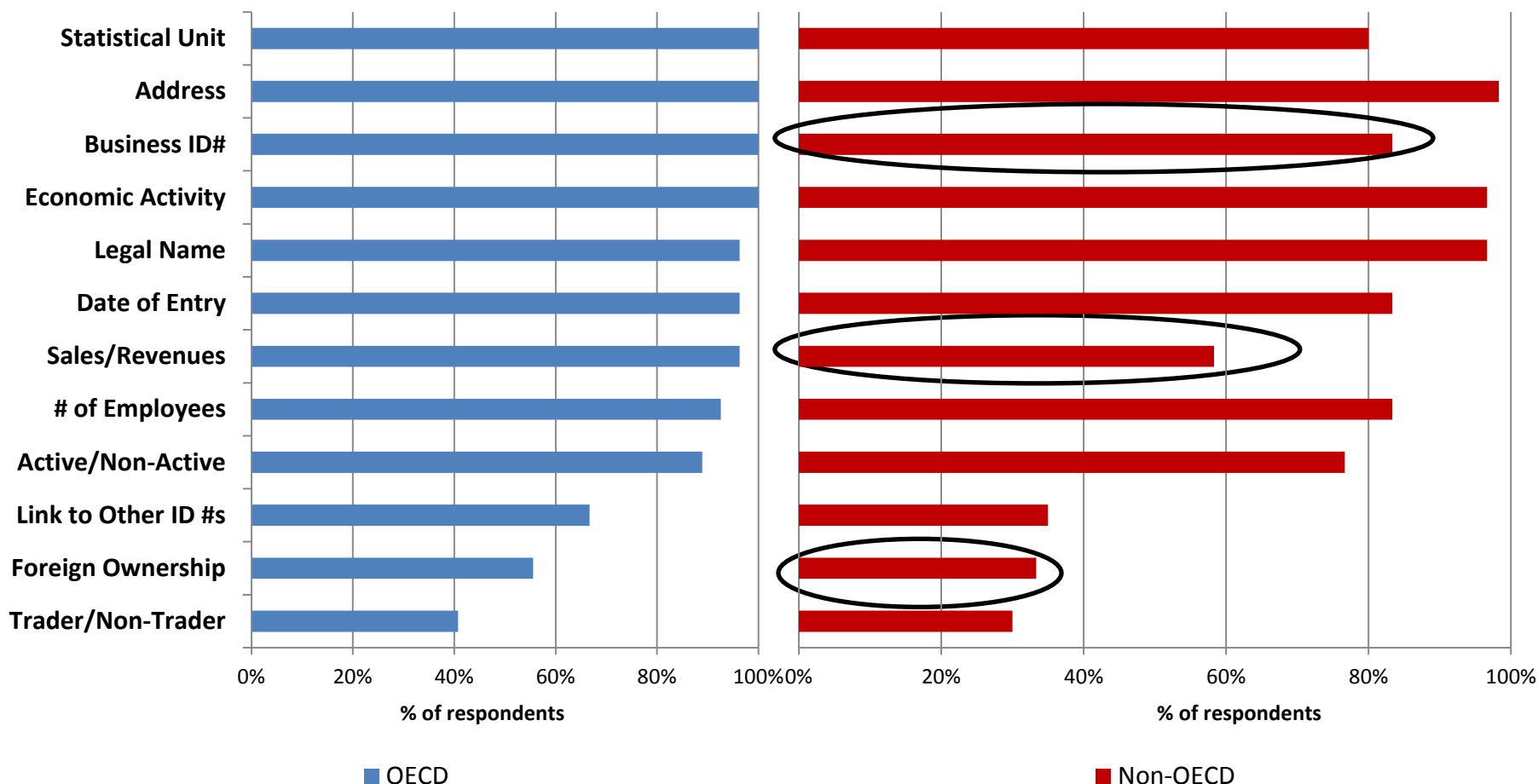


Frequency of update





Variables maintained in SBR



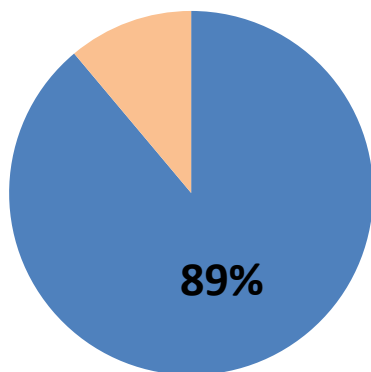
- For nearly all respondents SBRs include legal name; address; and economic activity.
- Less commonly-maintained variables are identification of trader/non-trader (maintained by 33% of all respondents) and percentage of foreign ownership (cited by 40% of all respondents). Such information would be relevant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



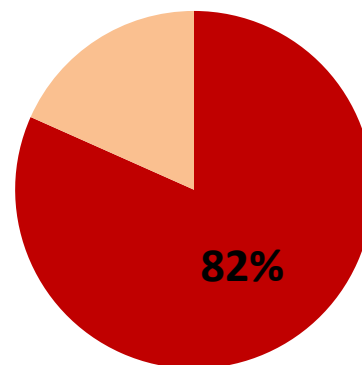
Maintaining a unique identifying number for enterprises

- 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.

OECD



Non-OECD



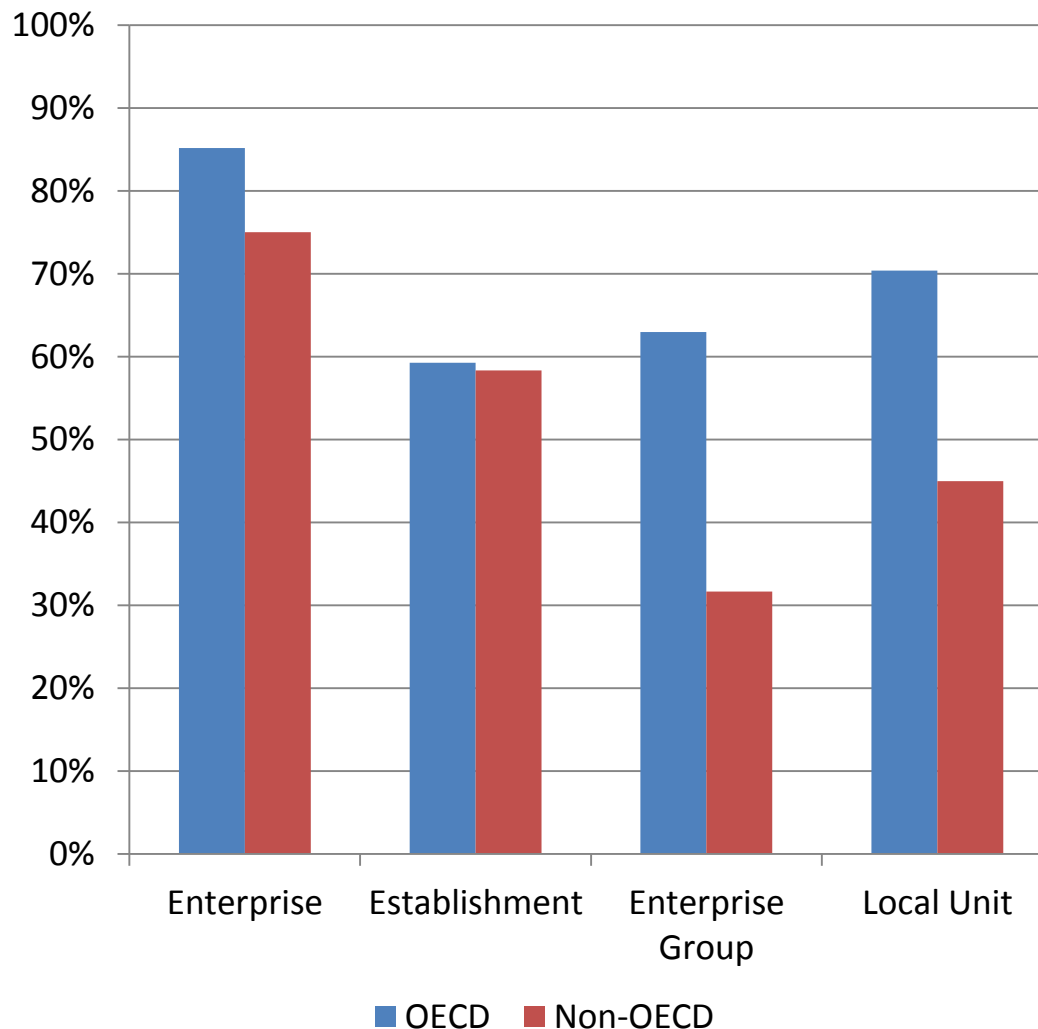
■ Yes maintain unique identifier ■ Do not maintain one

■ Yes maintain unique identifier ■ Do not maintain one



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%)

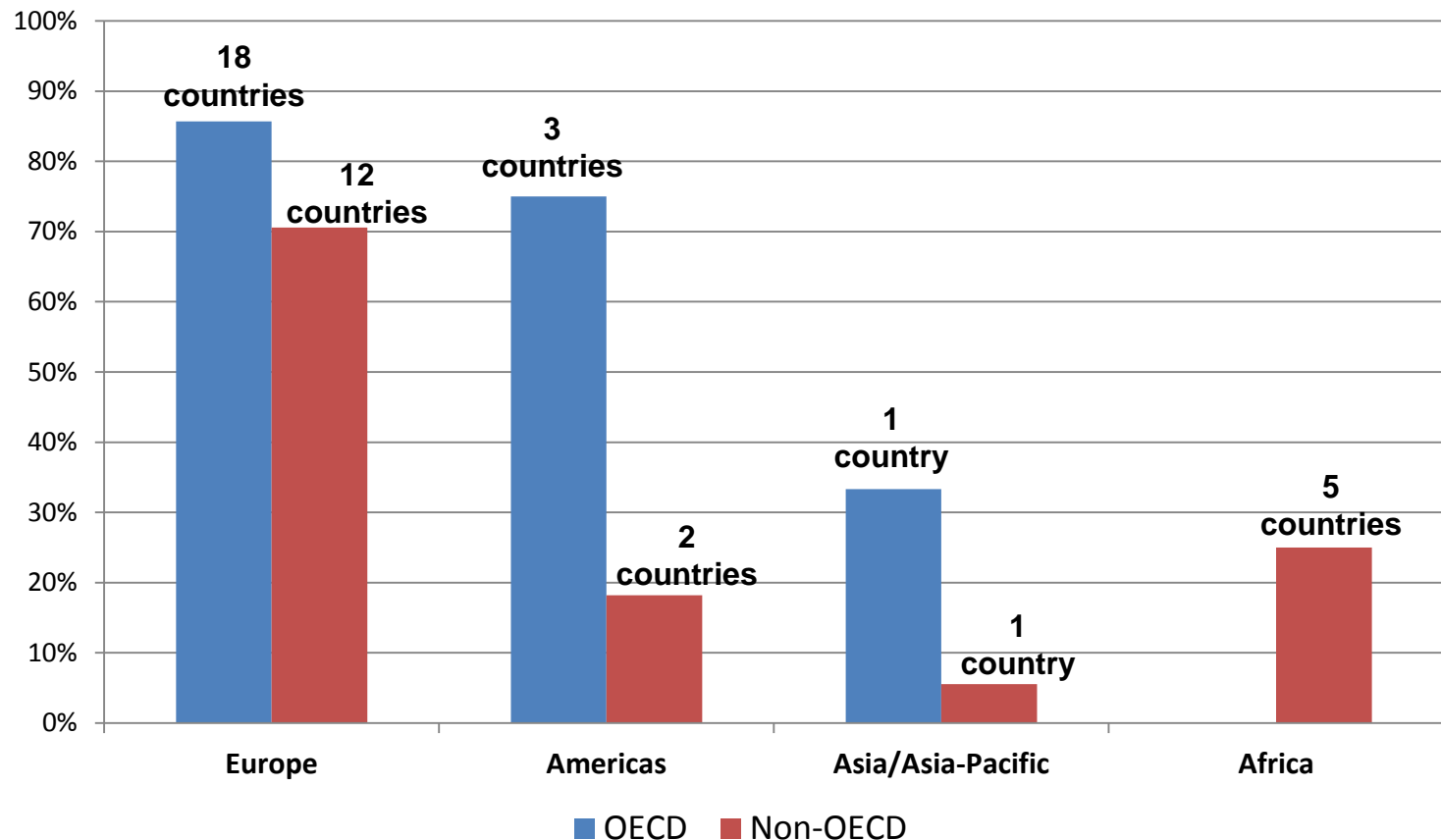




Linking international merchandise trade statistics (IMTS) to the SBR

- **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)

Linking SBR to IMTS by Region



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

	Value	Quantity	# of enterprises
Trade by economic activity (ISIC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade by enterprise size (number of employees)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade by enterprise size (turnover)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade by (sub-national) geographic location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trade by foreign ownership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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
Accommodation and food services; non market services	4218	662	653	647	1449
Unspecified	404749	..	..	..	..



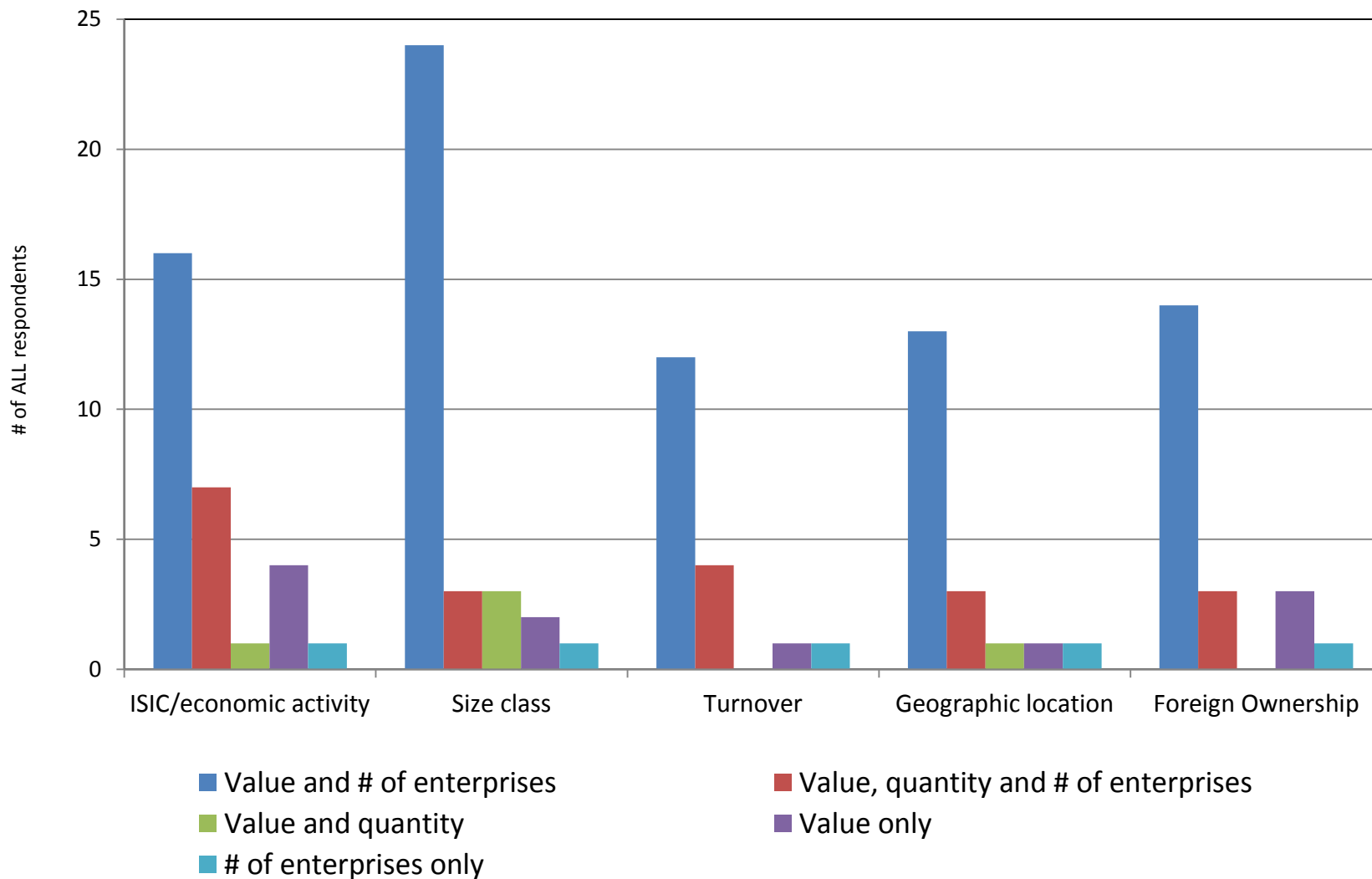
Dataset: TEC number of trading enterprises by sector and size class

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
Accommodation and food services; non market services		55346	28154	7059	1984	1292
Unspecified		180082

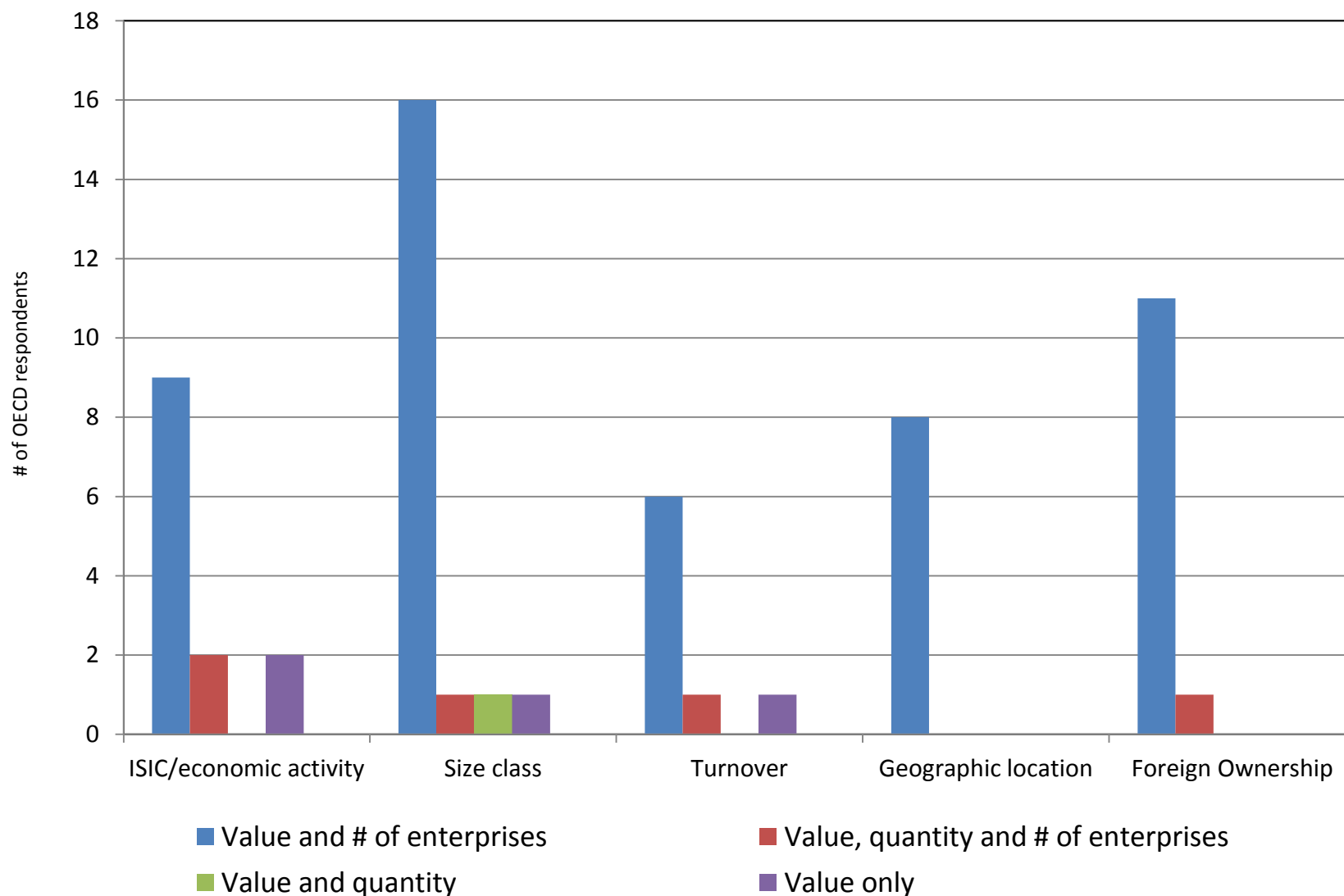
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Dissemination of TEC variables by all respondents

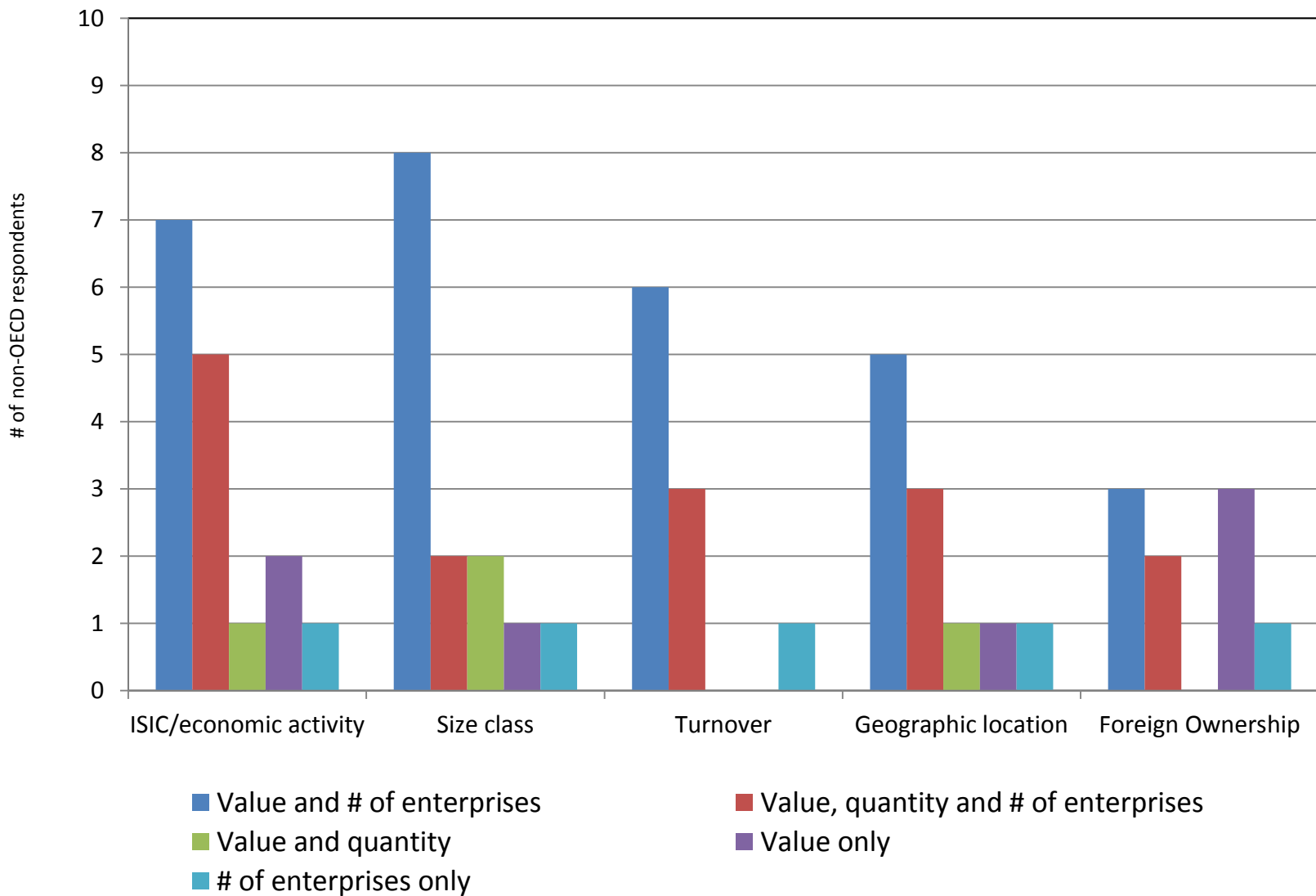


Dissemination of TEC variables by OECD respondents





Dissemination of TEC variables by non-OECD respondents

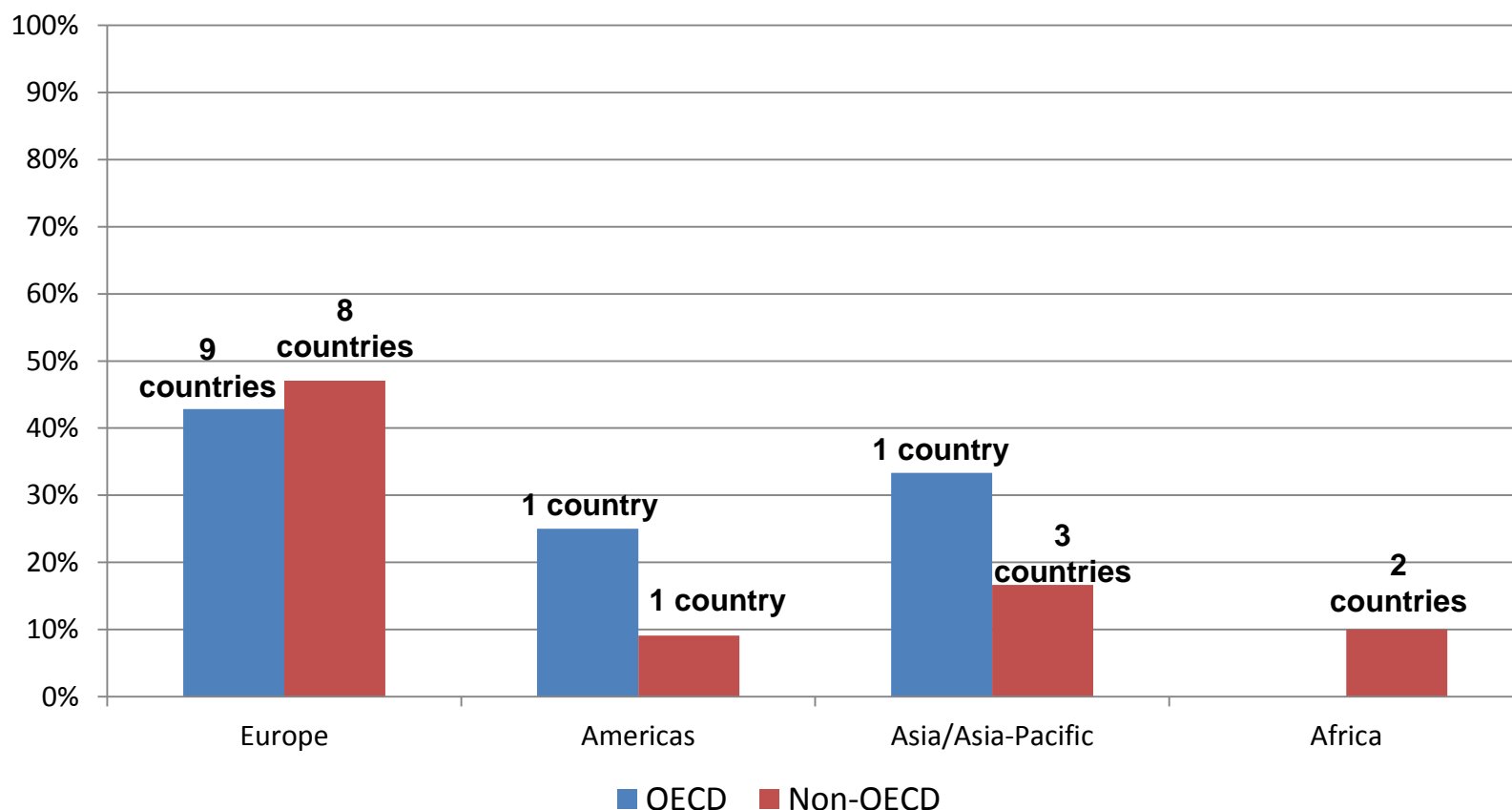




Linking statistics of international trade in services (SITS) to the SBR

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

Linking SBR to SITS by Region

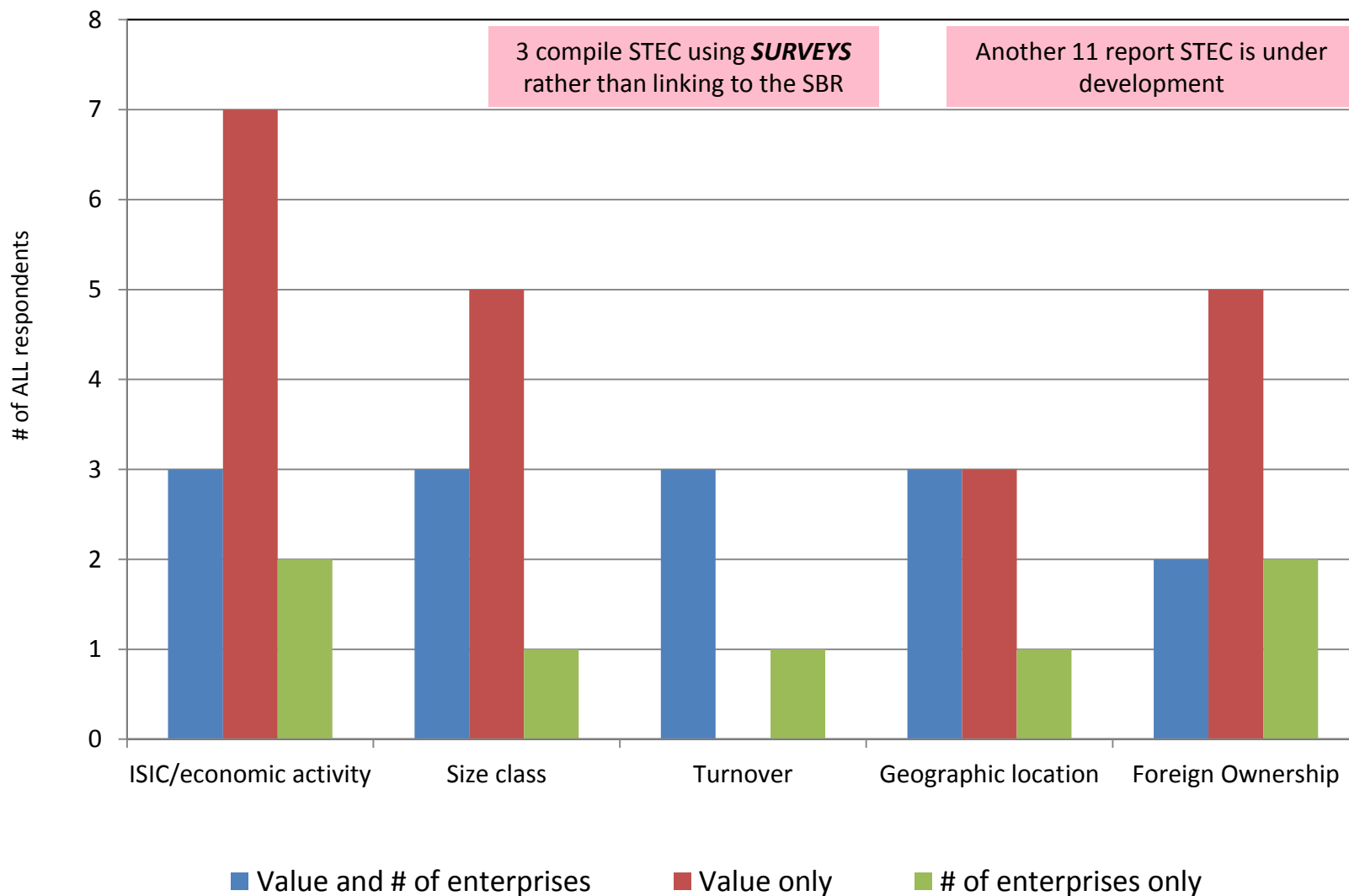


32. If statistics of international trade in services are indeed linked to the SBR, how are the data disseminated? Please check all that apply.

	Value	# of enterprises
Trade by economic activity (ISIC)	<input type="checkbox"/>	<input type="checkbox"/>
Trade by enterprise size (number of employees)	<input type="checkbox"/>	<input type="checkbox"/>
Trade by enterprise size (turnover)	<input type="checkbox"/>	<input type="checkbox"/>
Trade by (sub-national) geographic location	<input type="checkbox"/>	<input type="checkbox"/>
Trade by foreign ownership	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

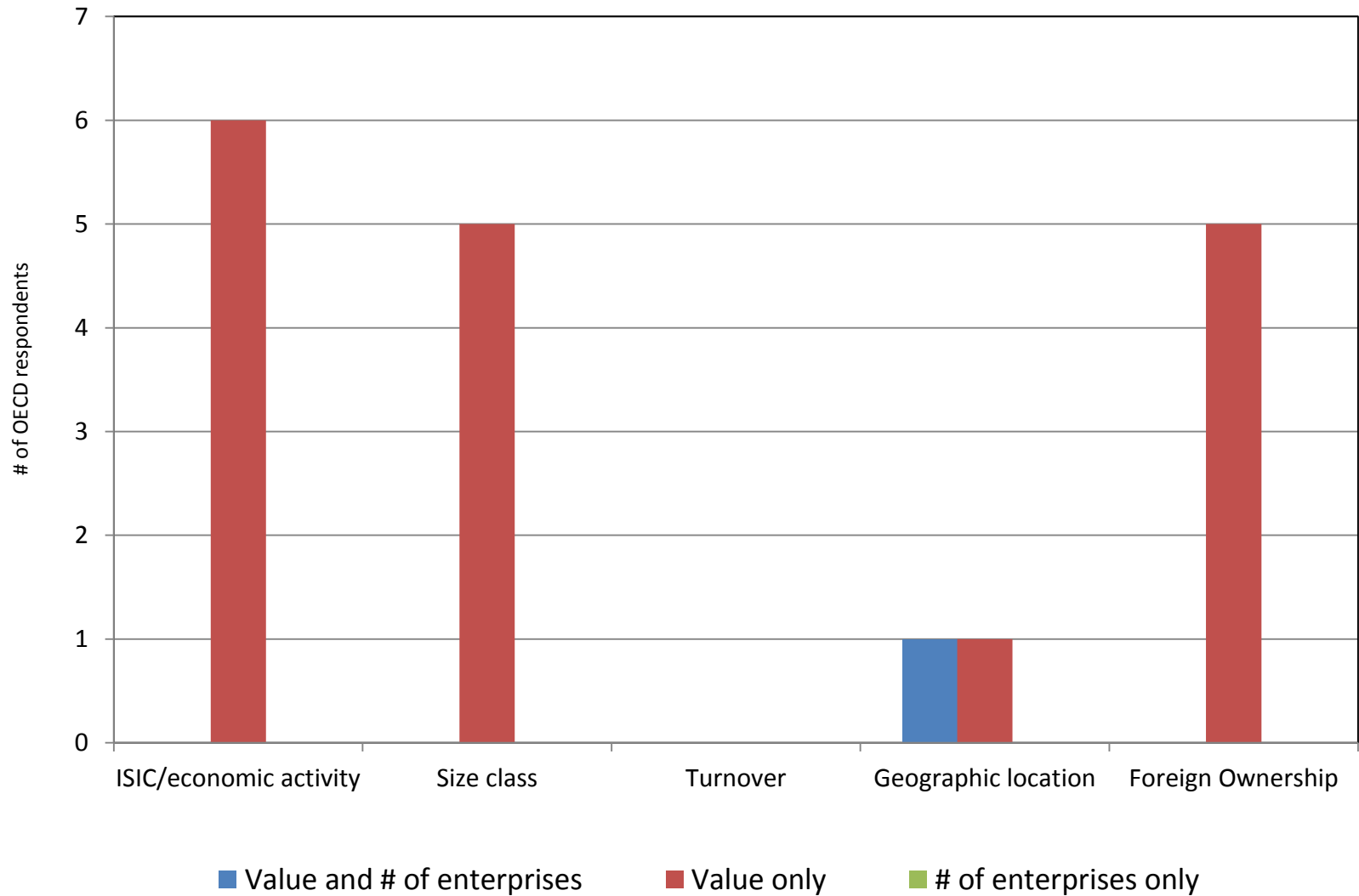


Dissemination of STEC variables by all respondents



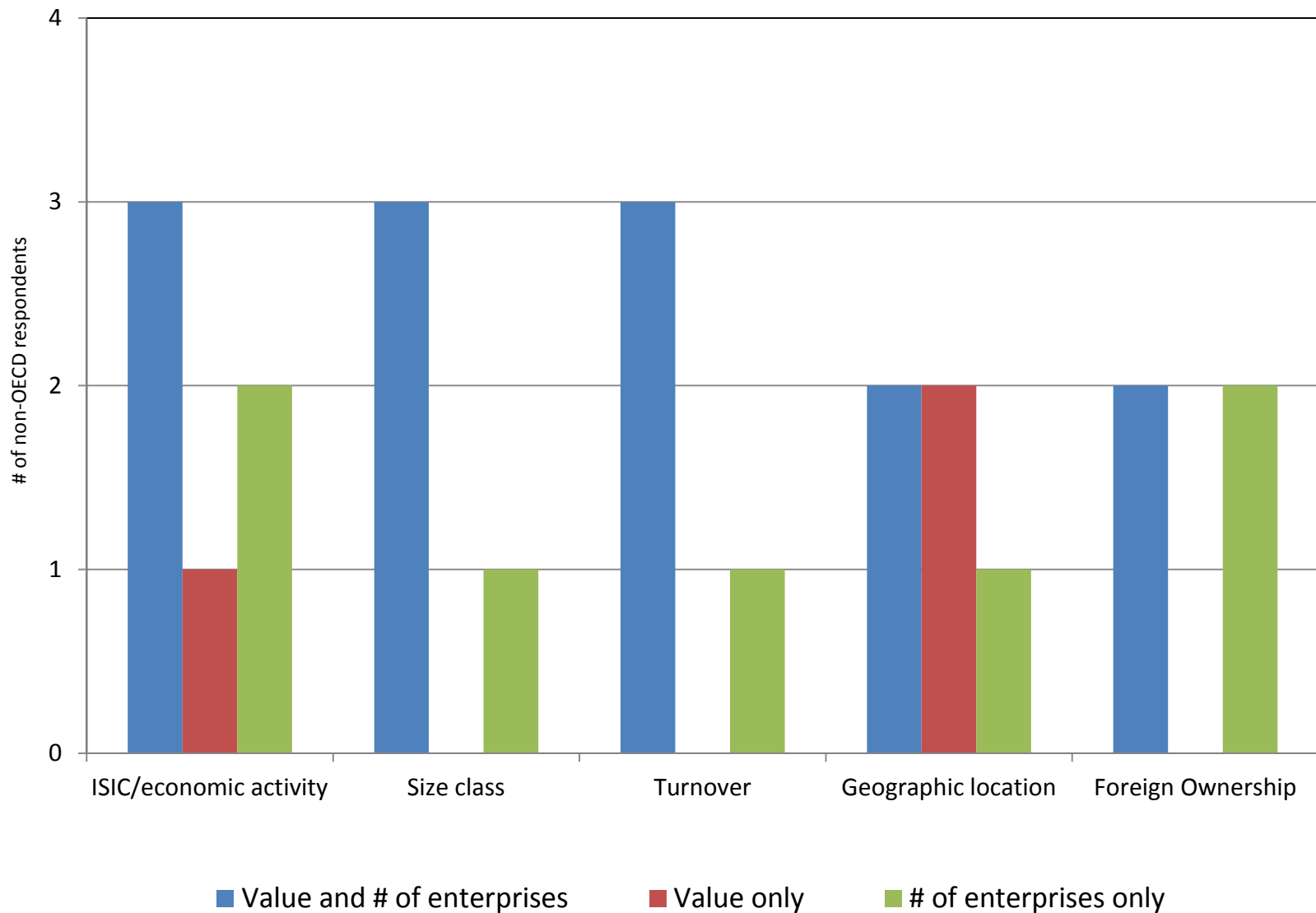


Dissemination of STEC variables by OECD respondents





Dissemination of STEC variables by non-OECD respondents

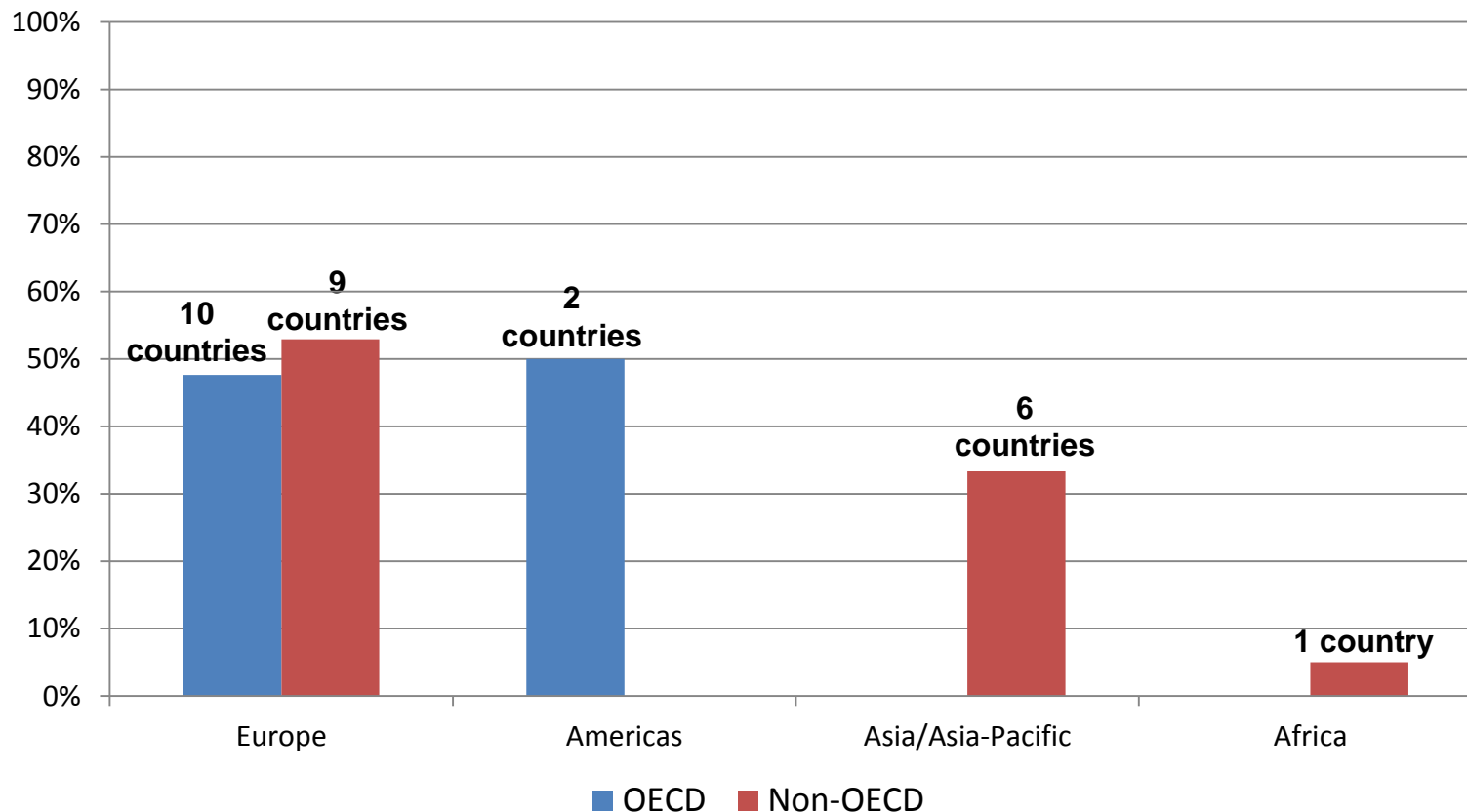




Linking foreign direct investment statistics (FDI) to the SBR

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

Linking SBR to FDI by Region

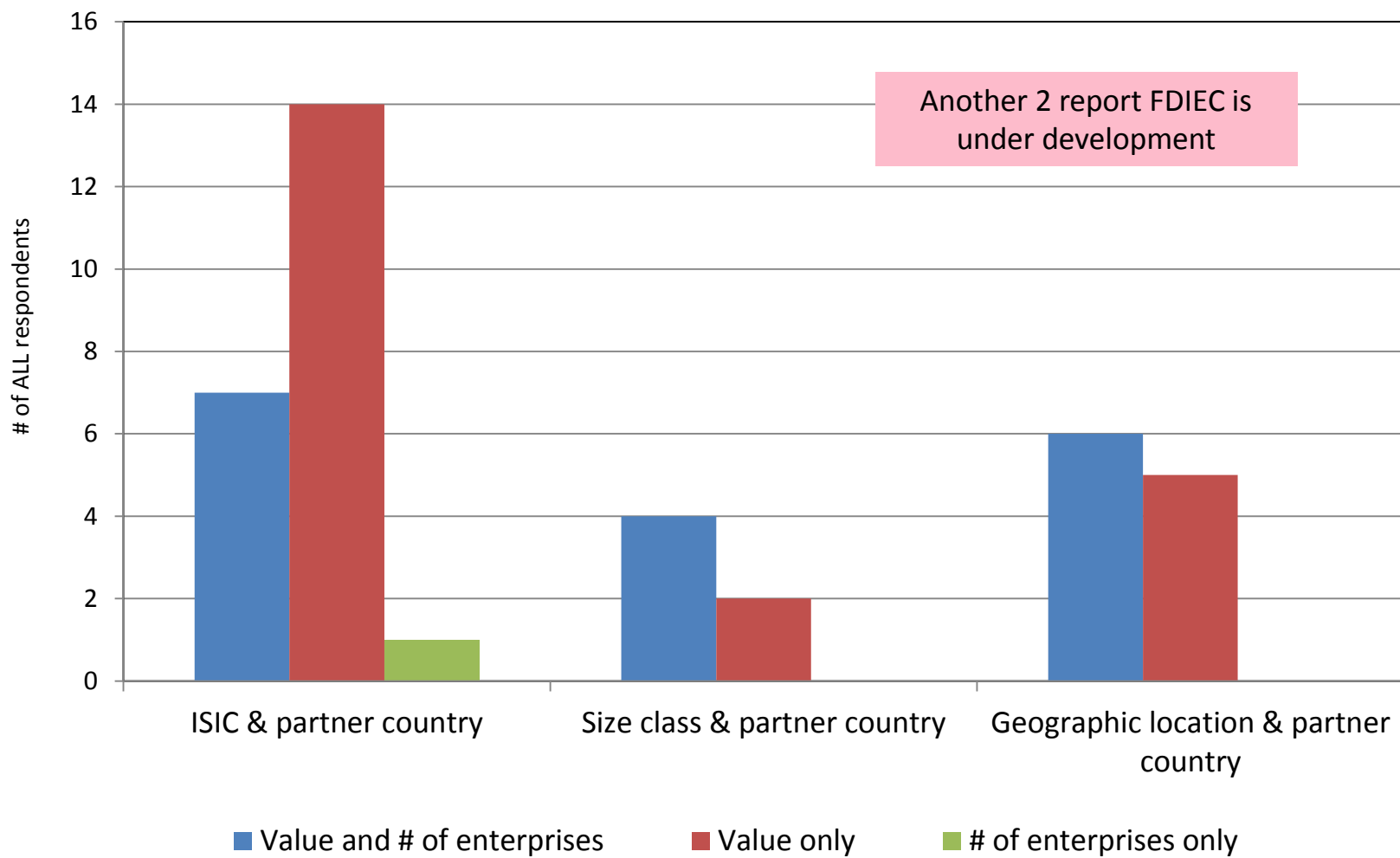


35. If FDI statistics are indeed linked to enterprise characteristics, how are they disseminated? Please check all that apply.

	Value	#of enterprises
FDI by economic activity (ISIC) and partner country	<input type="checkbox"/>	<input type="checkbox"/>
FDI by enterprise size and partner country	<input type="checkbox"/>	<input type="checkbox"/>
FDI by geographic location and partner country	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

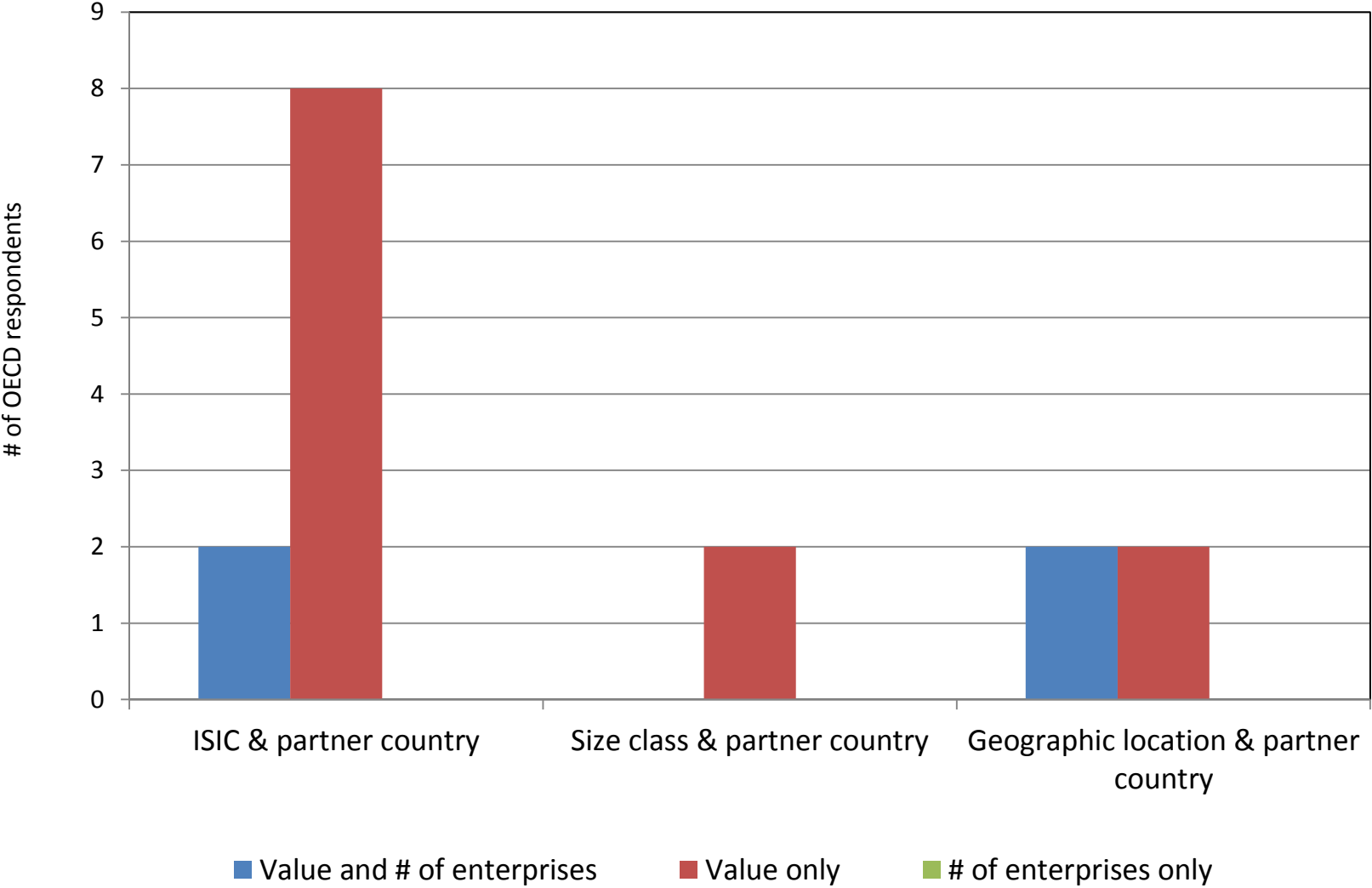


Dissemination of FDIEC variables by all respondents



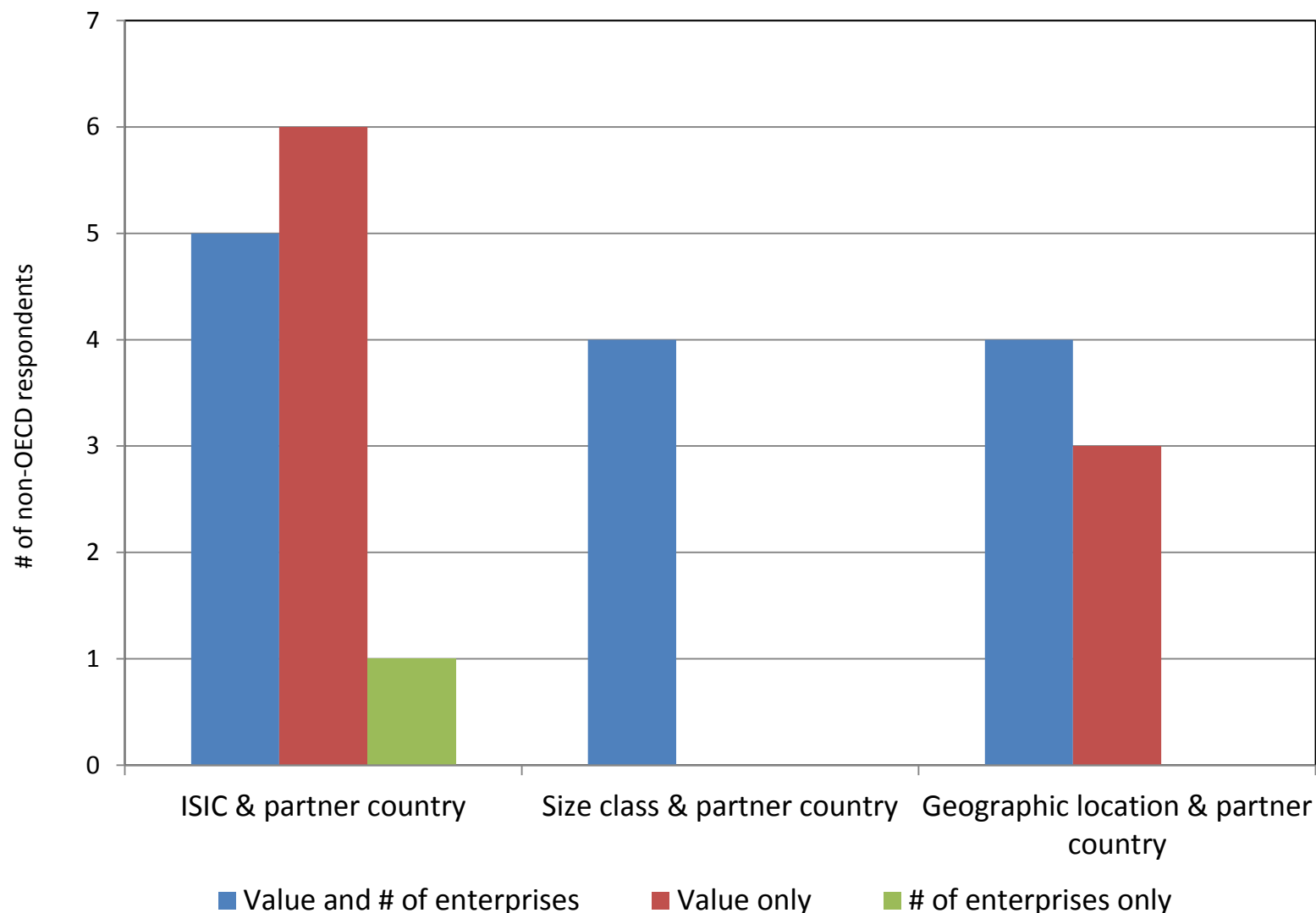


Dissemination of FDIEC variables by OECD respondents





Dissemination of FDIEC variables by non-OECD respondents



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



Challenges cited when attempting to link trade statistics to the SBR

The most commonly cited challenge is ***matching enterprises or establishments***

Followed by:

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



Thank you