Joint-ESAs high-level exercise on ICT TPPs' landscape results

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Agenda

- Background summary

- Data quality checks and data cleaning

- ICT Third-party service providers

- ICT services

- Modelling some quantitative criticality criteria

Background summary

Joint-ESAs high-level exercise is a **DORA preparatory activity**, for which kindly a sample of financial entities selected by NCAs were asked to report on a best-effort basis **all their contractual arrangements with ICT third-party providers (ICT TPPs)**.

Threefold objectives:

- Facilitate the future identification of critical ICT third-party providers (TPPs) once DORA enters into application

- Recommendations for criticality criteria, to support the upcoming delegate Act/call for advice on criticality criteria

- For DORA RTS and ITS: Key takeaways for better organisation of data collection exercise

Outcome: non-public report
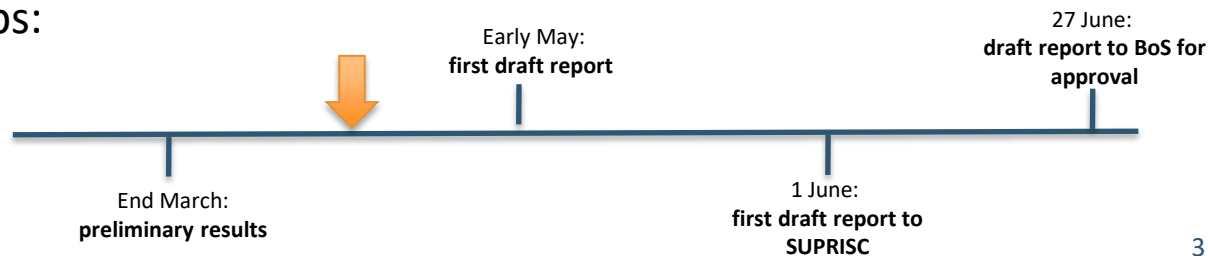
	Sample reporting entities	Entities making use of the contracts	Average number of rows per rep. entity
EBA EUROPEAN BANKING AUTHORITY	174 — 3 G-SIIs and 28 O-SIIs	1084	144
ESMA European Securities and Markets Authority	292 — 33 investments firms are also part of EBA sample	436	57
eiopa European Insurance and Occupational Pensions Authority	290 — (re)insurance undertakings: solo entities from a same group have been grouped in one unique reporting	559	63

Data analysis & drafting Mar-Jun 2023
- Policy, IA and statistics teams to analyse results
- Draft report to EBA sub-structures and BoS

Next steps:

End March:
preliminary results

Early May:
first draft report

1 June:
first draft report to SUPRISC

27 June:
draft report to BoS for approval

Data quality checks and data cleaning

Data points reported	3,351,425
Of which missing data or wrong inputs	245,869
Missing data or wrong input in %	7.3%

Out of which

LEI data points reported	243,740
Of which missing or wrong LEI codes*	42,376
Missing LEIs or invalid input in %	17.4%

*excluding subcontractors

Data points cleaned	332,663*
Data points reported	3,351,425
Cleaned data in %	9.9%

*Reference date 17 April 2023

Caveats – interpretation of the results

- The results of this exercise cannot be extrapolated to represent the entire EU financial sector, as the degree of representativeness of the sample is not known (at national and EU level) in terms of ICT third-party providers and ICT services.

- Main data quality issues:

  - Missing fields, especially LEI codes, which impedes from clear identifying entities, their aggregation and the use of other sources (for example, group relationships on GLEIF)

  - Inconsistent data reported in 'Other' ICT service provided

  - Inconsistent data reported in 'Kind of arrangement' (Intragroup/IPS/Outside)

  - Inconsistent reporting of subcontractors or reporting of the relationship of subcontractors (subcontractors' chain).

  - Inconsistencies and missing fields when reporting the name of ICT service providers and subcontractors

Data quality checks and data cleaning

Harmonisation of names

The harmonisations of names has been carried out with the following methodology to increase the matching of names:

- Take the previously cleaned name (i.e. the name reported in GLEIF when LEI is valid otherwise the name originally reported)

- Removal of punctuation

- Removal of most common legal forms ("Ltd","Plc", "Spa","Sarl",..)

- Removal of geographical attributes to harmonise branches (removing the string "Branch", "Austria", "France"…)

- Identification and harmonisation of most common and most relevant entities, including some systemically important banks ("Google", "Amazon", "Unicredit"…)
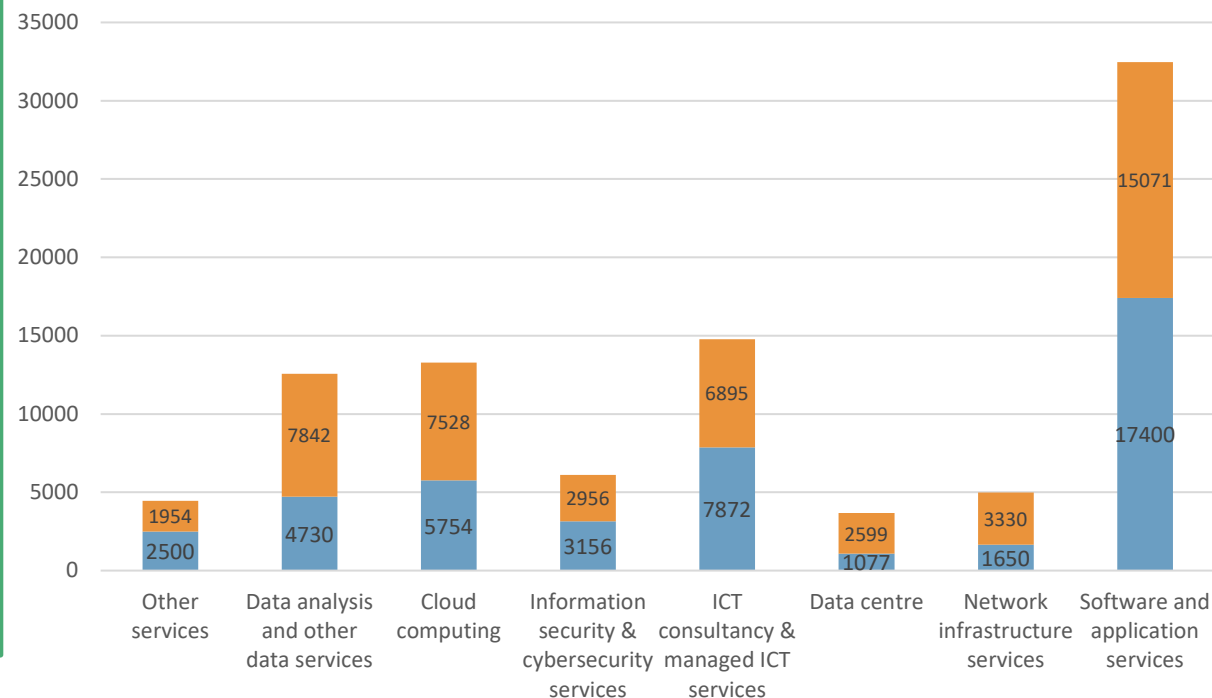
Retrieving of LEIs

The retrieving of LEIs has been carried out with the following methodology to increase the filling of LEIs:

- Harmonize the name (steps described in the left panel)

- Query the API of GLEIF (ask the search engine on the website in an automated way) for direct search

- Compute the distance (with an external package for string matching in R/Python) between the harmonised name and the results of GLEIF, and keep the closest result

- If the direct search on GLEIF doesn't return a result, or if the results are too distant from the harmonized name, we repeat the previous steps with the API of GLEIF for fuzzy search.

- We retrieve at least 50% of the LEIs : some companies are too small to have a LEI, so no result is expected for them.

- Query the API of GLEIF and process it (one second per name) is feasible, because we use the search engine of GLEIF. We chose this method instead of brute force : download the whole dataset of GLEIF with millions of names/LEIs and then compute the distance (string matching) between each name in the survey, against all the names in GLEIF, to find the best match.

ICT services: entries reported by category

Main observations:

➢ The 7 main categories cover 95.2% of services reported.

➢ 'Other' category (4.8% of entries) has been misreported including only Y/N answers.

➢ Identification of main ICT TPPs per category is hindered by inconsistencies reported under 'Kind of arrangement' (Intragroup/IPS/Outside)

➢ A more detailed taxonomy could help to identify more specialised ICT TPPs by sector or type of service - *the ITS on the register includes a taxonomy of 21 ICT services*

Number of ICT services by category

Category	# ICT services supporting non-critical functions	# ICT services supporting critical functions
Other services	2500	1954
Data analysis and other data services	4730	7842
Cloud computing	5754	7528
Information security & cybersecurity services	3156	2956
ICT consultancy & managed ICT services	7872	6895
Data centre	1077	2599
Network infrastructure services	1650	3330
Software and application services	17400	15071

■ # ICT services supporting non-critical functions   ■ # ICT services supporting critical functions

ICT services: number of ICT TPPs by type of service provided

ICT service provided	Software and application services	Network infrastructure services	Data centre	ICT consultancy & managed ICT services	Information security & cybersecurity services	Cloud computing	Data analysis and other data services
# of ICT TPPs	9,012	1,786	1,391	3,919	2,022	3,501	3,154
# of ICT TPPs supporting **a critical or important function**	**3,601**	**1,185**	**870**	**1,330**	**962**	**1,313**	**1,593**

Top 15:

Software and application services	Network infrastructure services	Data centre	ICT consultancy & managed ICT services	Information security & cybersecurity services	Cloud computing	Data analysis and other data services
Microsoft	Microsoft	Microsoft	Microsoft	Microsoft	Microsoft	Microsoft
ServiceNow	Telefonica	Workday	Tata	Telefonica	Amazon	Bloomberg
IBM	IBM	ServiceNow	ServiceNow	Workday	Google	Atos
Oracle	Amazon	Telefonica	Telefonica	Amazon	ServiceNow	Oracle
Workday	Orange	IBM	Accenture	Infosys	Salesforce	Refinitiv
Bloomberg	Atos	Equinix	PWC	Orange	Workday	ServiceNow
Amazon	ABV Investments	Degreed	EntIT Software	SySS	Oracle	Workday
Accenture	Real Finance	EntIT Software	GRZ IT Center	SEC Consult	Telefonica	Amazon
Tata	Tieto	GRZ IT Center	Capgemini	DigiCert	EntIT Software	MSCI
Salesforce	Bloomberg	Amazon	Austrian Reporting Services	Tata	Austrian Reporting Services	IBM
Telefonica	Tata	Oracle	Beqom	Splunk	Beqom	Telefonica
Atos	Telia	Cornerstone Ondemand	IBM	Akamai Technologies	Institutional Shareholder Services	EntIT Software
Refinitiv	NTT	Atos	Oracle	Okta Uk	NetDocuments	Tata
Google	Oracle	Tata	Deloitte	IBM	Markit North America	Austrian Reporting Services
GRZ IT Center	Cisco	Tieto	ActiveTrades	Accenture	KPMG	Beqom

Modelling some quantitative criticality criteria using *preliminary* results

Observations:

➤ Primary indicators are based on the note presented to JC SC DOR members on 21 March

➤ The table presents the **number of ICT TPPs per each proposed minimum threshold.** Please note these are not cumulative. If we consider the full DORA FEs' population, proposed thresholds could reach high number of ICT TPPs.

➤ For total assets, only 71 out of 80 sampled credit institutions were accounted for (representing 31% of the total assets across all EU credit institutions). Assets under management (AUM) were accounted for 23 out of 111 sampled investment firms.

➤ The numbers of TPPs that reach each indicator would be higher if the full population of financial entities is considered

Calibration of proposed min thresholds for primary indicators		# of ICT TPPs
G-SIIs	List ICT TPPs providing ICT services directly or indirectly to <u>at least one G-SII</u> and these ICT services support at least one critical or important function *Sample contains 3 G-SIIs*	**441**
O-SIIs (i)	List ICT TPPs providing ICT services directly or indirectly to (i) <u>at least three O-SIIs from at least three different EU Member States</u> these ICT services support at least one critical or important functions *Sample contains 28 O-SIIs*	**21 (if at 3MSs)** 10 (if at 5MSs)
O-SIIs (ii)	List ICT TPPs providing ICT services directly or indirectly to (ii) at <u>least one O-SII with O-SII score > 3000</u> and these ICT services support at least one critical or important functions	**229**
Total assets	**Total assets of financial entities**: List ICT TPPs providing ICT services to financial entities accounting for <u>more than 10%</u> of the total assets of financial entities *Data available only for credit institutions and Assets under Management for investment firms.*	**81** covering more than 10% of CIs' Total Assets across the EU

Analysis of preliminary results and modelling of proposed criticality indicators and thresholds is ongoing.

Question to SGAT SUP members

1. **Do SGAT members have any comments, proposals/views on the current analysis?**

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