Delineation of the enterprise group statistical unit in the Hungarian Statistical Business Register

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The enterprise group statistical unit

- Defined by Regulation (ECC) No 696/93

- A set of enterprises controlled by the group head
  - Legal and financial links are only applicable to legal units
  - → A set of legal units

- Types of enterprise groups:
  - Purely domestic enterprise group
  - Domestically controlled multinational enterprise group
  - Foreign controlled multinational enterprise group

Data sources

- Administrative - Business registry court
  - Live connection to the SBR via the single-window system
  - Daily updates
  - Contains the legal unit is „owned by whom” information

- Statistical sources
  - Additional surveys
  - FATS

Data sources

Structure of the administrative data via the single-window system

COLUMN	DESCRIPTION	STATUS
NAT_ID	National ID of the legal unit	MANDATORY
EFFECTIVE_DATE	Effective date of the legal relationship	MANDATORY
END_OF_VALIDITY_DATE	Date of termination of the legal relationship	OPTIONAL
CONTROL_TYPE	Type of control (direct if not empty)	OPTIONAL
NAT_ID_PARENT	National ID of the parent legal unit	OPTIONAL
ADDRESS_PARENT	Address of the parent legal unit	MANDATORY
NAME_PARENT	Name of the parent legal unit	MANDATORY
COUNTRY_CODE_PARENT	Country code of the parent legal unit	MANDATORY
FOREIGN_ID_PARENT	Foreign ID of the parent legal unit	OPTIONAL
NATURAL_PERSON	Name of the natural person owner	OPTIONAL

The register of relationships

- Contains every domestic and multinational links between resident legal units
- Is a fully-fledged register
  - Historical data access
  - Event logging

- Acts as the main precursor of the enterprise group register
  - Yearly frozen frame

- Daily updates, automated by IT systems
  - „Live” register
- Data integrity and consistency is enforced by various methodological rules

Methodological rules I.

- A relationship is defined by its subsidiary and parent legal unit
- A relationship's crucial attribute is the UCI, which can only be a legal unit
- Every relationship has an effective date, the type of control, the status of the relationship and other technical information
- Neither member of the relationship can be a private entrepreneur or a governmental organisation

Methodological rules II.

- At least one member in the relationship should be domestic (subsidiary, parent or UCI)
- **One subsidiary can only have one direct controlling parent legal unit**
- In case a subsidiary which is directly controlled by a parent, and gets a new direct controlling unit, the previous relationship should be reviewed
- In case there is a broken link in the relationship chain (and has a valid UCI), the broken part of the chain should be reviewed (which legal unit can be the new UCI)

Main table of the register of relationships

COLUMN	DESCRIPTION	STATUS
PARENT	ID of parent legal unit	OPTIONAL
SUBSIDIARY	ID of subsidiary legal unit	MANDATORY
UCI	ID of the Ultimate Controlling Institute	OPTIONAL
CONTROL_TYPE	Type of control (control or no control)	MANDATORY
REL_STATUS	Status of the relationship (active or ceased)	MANDATORY
EFFECTIVE_DATE	Effective date of the relationship	MANDATORY
END_OF_VALIDITY	Date of termination of the relationship	OPTIONAL

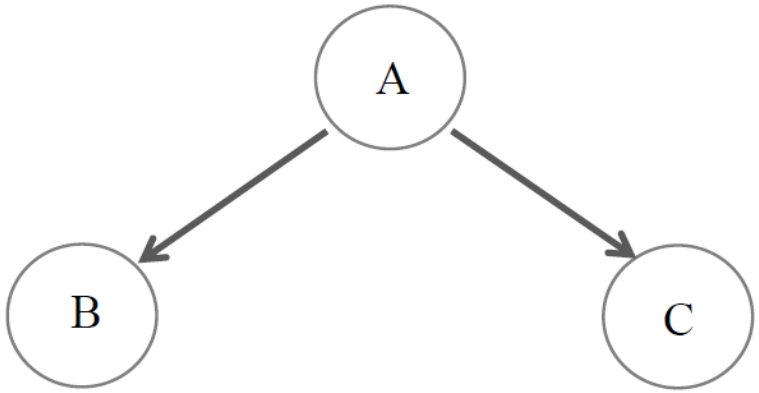
Maintentance of the register of relationships

- The entities stored in the register of relationships are not isolated from each other
  - The daily updates of the relationships may cause inconsistencies in the tree structures

- Four types of errors can be detected in the structures
  - Horizontal UCI error
  - Vertical UCI error
  - Cross UCI error
  - Broken tree structure

Horizontal UCI error

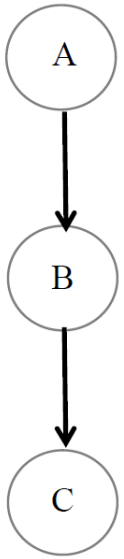
- The parent has more subsidiaries, but they are under a different UCI



PARENT	SUBSIDIARY	UCI
A	B	X
A	C	Y

Vertical UCI error

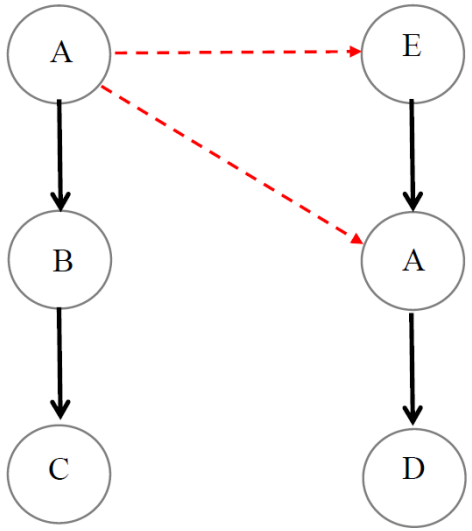
- The parent is also a subsidiary, but not under the same UCI



PARENT	SUBSIDIARY	UCI
A	B	X
B	C	Y

Cross UCI error

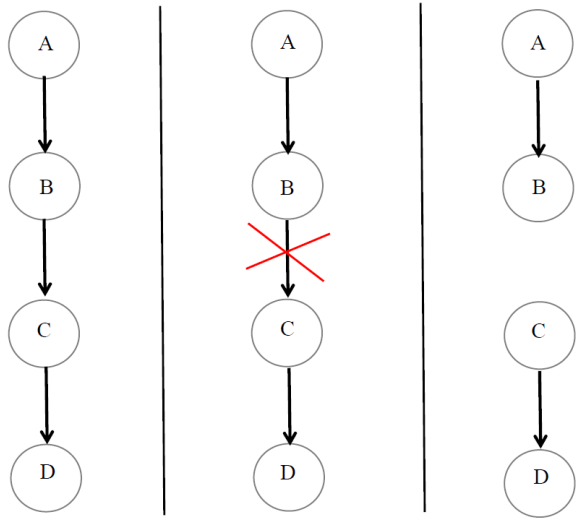
- The UCI is a direct parent in a different relationship, but it is not the UCI in that relationship



PARENT	SUBSIDIARY	UCI
A	B	A
B	C	A
E	A	E
A	D	E

Chain break

- If a relationship is terminated in a tree structure, the UCI of the broken off part is unknown, it should be investigated manually



PARENT	SUBSIDIARY	UCI	REL_STATUS
A	B	A	Active
B	C	UNKNOWN	Ceased
C	D	UNKNOWN	Active

Supporting data structures

- There are additional tables which support the enterprise group delineation process, and as well as improve the query performance
- REL_UCI_HTREE table, which contains every relationship in an ordered hierarchical tree structure

- Consider the example relationship structure below
  - We have 2 tree structures, with UCI „X” and UCI „Y”

PARENT	SUBSIDIARY	UCI
A	B	X
A	D	X
B	C	X
C	E	X
F	G	Y
H	I	Y

Supporting data structures

- The REL_HTREE table is structured in a way which supports hierarchical queries both in top-down, and bottom-up approaches

COLUMN	DESCRIPTION
SUBSIDIARY	ID of the subsidiary
PARENT	ID of the parent
SUBSIDIARY_NAME	Name of the subsidiary
EG_NUMBER	Number of the enterprise group
EG_LEVEL	Level in the tree structure

SUBSIDIARY	PARENT	SUBSIDIARY_NAME	EG_NUMBER	EG_LEVEL
EG		Hierarchical tree (the topmost level contains the UCI)		
A	X	Legal unit "A"	1	2
B	A	Legal unit "B"	1	3
C	B	Legal unit "C"	1	4
D	A	Legal unit "D"	1	3
E	C	Legal unit "E"	1	5
F	Y	Legal unit "F"	2	2
G	F	Legal unit "G"	2	3
H	Y	Legal unit "H"	2	2
I	H	Legal unit "I"	2	3
X	EG	Legal unit "X"	1	1
Y	EG	Legal unit "Y"	2	1

Sample hierarchical query

- The query below returns every relationship which is under UCI „X” in an ordered way
- Implemented using Oracle SQL

```
SELECT subsidiary, parent, subsidiary_name, level
FROM rel_uci_htree
START WITH subsidiary = 'X'
CONNECT BY NOCYCLE PRIOR subsidiary = parent
ORDER BY level;
```

SUBSIDIARY	PARENT	SUBSIDIARY_NAME	EG_LEVEL
X	EG	Legal unit "X"	1
A	X	Legal unit "A"	2
D	A	Legal unit "D"	3
B	A	Legal unit "B"	3
C	B	Legal unit "C"	4
E	C	Legal unit "E"	5

Delineation of enterprise groups

- The enterprise group register can be compiled for reference year T if we meet the following criteria:
  - The register of relationships contains every relationship for reference year T
  - Relationships which refer to reference year T + 1 should be omitted
  - The saved frame should not contain any methodological errors (horizontal, vertical, cross UCI errors)
  - For every relationship with the type of direct control, the UCI should be available
  - Only those relationships with a common UCI can be assigned to the same enterprise group
  - Only active relationships in the reference year can be part of an enterprise group, if a ceased relationship in the referene year causes any horizontal, vertical or cross UCI error, the relationship should not be part of any enterprise group

Delineation of enterprise groups

- The frozen frame of the relationship register is used as the input
- A new ID is generated for the delineated enterprise groups
  - If the UCI is the same as in the previous reference year, the EG ID is inherited
- No „live” version is available, an enterprise group register always refers to a reference year

Thank you for your attention!