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# A typology of captive financial institutions and money lenders (sector S127) in Luxembourg[1]

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[1] This presentation was prepared for the WSC. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the event.

BANQUE CENTRALE DU LUXEMBOURG
EUROSYSTÈME

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# A Typology of Captive Financial Institutions and Money Lenders (sector S127) in Luxembourg

Gabriele di Filippo & Frédéric Pierret

Statistics Department, External Statistics Section

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# Definition of Captive Financial Institutions (CFIs)

**Captive financial institutions and money lenders**
Classified in sector S127 (financial sector)

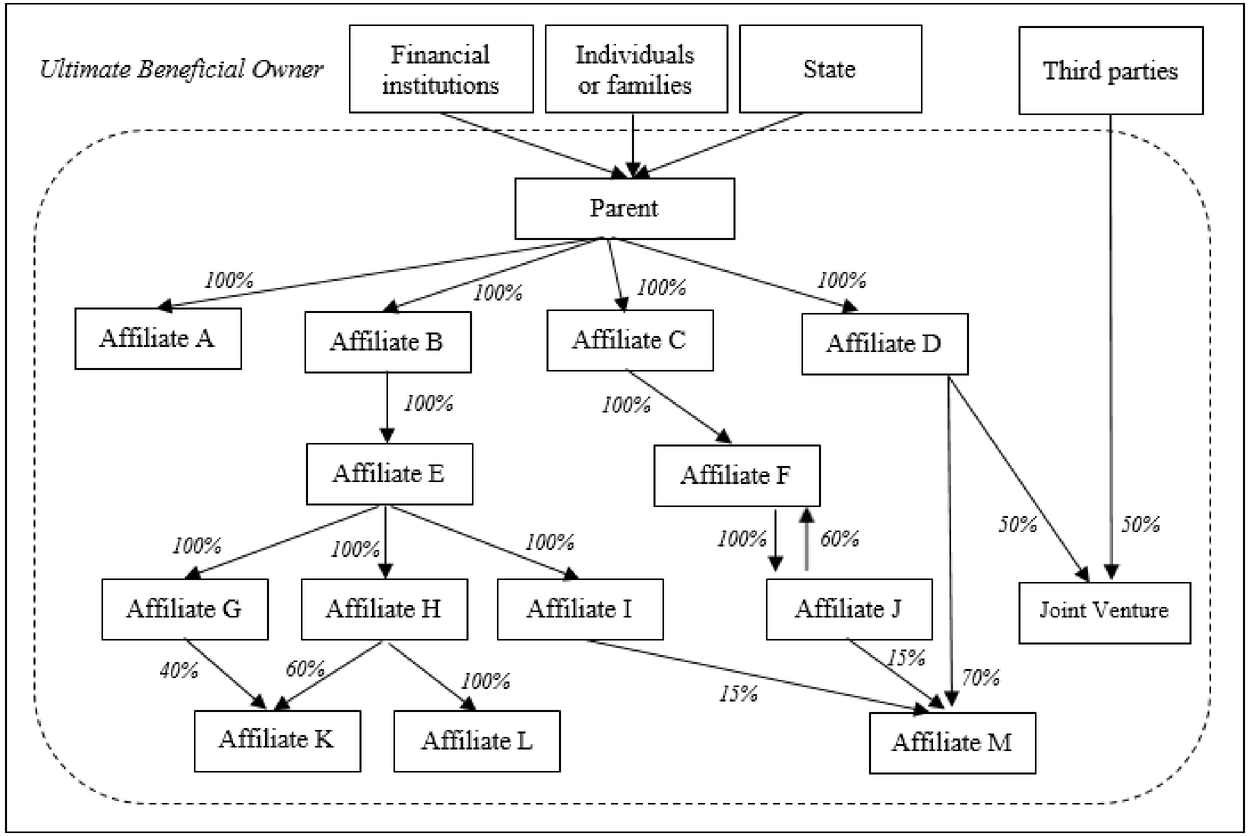
**Can be found in MNEs' structures and located**
btw the headquarters and the operational affiliates

**Meaning of term « captive »**
« Captive » as owned and controlled by and typically for the sole use of an organisation: the parent

**Main purpose**
Holding and finance activities
(e.g. holding of participations, treasury management, cash pooling, intragroup lending, carbon trading, etc.)

**Geographical location**
Financial centers
(access to various financing means, infrastructure, tax, regulatory and institutional advantages)

**Diagram 1: Example of a hypothetical complex structure of MNE**




Source: Adapted from UNCTAD (2016)

# Literature Review

Final Report by the Task Force on Head Offices, Holding Companies and Special Purpose Entities (SPEs)

**ECB-Eurostat-OECD (2013) "Final Report by the Task Force on Head Offices, Holding Companies and Special Purpose Entities (SPEs) "**

**Innovations:** Definition for several types of CFIs (including ISIC-codes)

**Types:** holdings, shell company, unit for holding and managing wealth of individuals and families, securitization vehicle, conduit, captive leasing company, factoring and invoicing company, SPE carrying out other financial functions

Thirty-First Meeting of the IMF Committee on Balance of Payments Statistics

Washington, D.C.
October 24–26, 2018

BOPCOM—18/03
For discussion

Final Report of the Task Force on Special Purpose Entities

Prepared by the Statistics Department
INTERNATIONAL MONETARY FUND

**IMF (2018) "Final Report of the Task Force on Special Purpose Entities"**

**Innovations:** Definition for several types of CFIs (including potential prototype balance sheets, ISIC-codes, schematic representation of the position of CFIs in the structures of MNEs across countries)

**Types:** holding, intragroup lending, conduit, captive factoring and invoicing, captive financial leasing, loan origination, securitization vehicle

# Examples of Prototype Balance Sheets by IMF (2018)

**Table 1.1: Holding corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

**Table 3.1: Intragroup lending corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

**Table 2.1: Conduit corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

**Table 4.1: Captive factoring and invoicing corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | Yes | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

**=> Possible ways of improvement:**

Fine-tune the definitions of CFIs

Empirical application

Discover potential new types of CFIs

# Data on Captive Financial Institutions

**Data collection**

- The **BCL** collects balance sheet items data for CFIs with **total assets ≥ EUR 500 million**
- => The analysis relies on a **sub-sample** of the whole population of CFIs in Luxembourg

**Sample representativeness (as of Q4 2018)**

- **≈ 5%** of the total **number** of CFIs
- **≈ 90%** of the total **assets** held by CFIs

**Data content**

- Balance sheet items (cf. Table 9)

**Period of analysis**

- Q4 2014 to Q4 2019

**Table 9: Balance sheet items available in the BCL database**

<table>
<tr><th>Item</th><th colspan="2">Definition</th><th>Affiliation link</th><th>Freq.</th><th>Item</th><th colspan="2">Definition</th><th>Affiliation link</th><th>Freq.</th></tr>
<tr><td>1-LA2001</td><td colspan="2">Intragroup loans: loans to shareholders</td><td>Yes</td><td>Q</td><td>2-LA2001</td><td colspan="2">Intragroup loans: loans from shareholders</td><td>Yes</td><td>Q</td></tr>
<tr><td>1-LA2002</td><td colspan="2">Intragroup loans: loans to companies where the company holds at least 10% of the social capital</td><td>Yes</td><td>Q</td><td>2-LA2002</td><td colspan="2">Intragroup loans: loans from companies where the company holds at least 10% of the social capital</td><td>Yes</td><td>Q</td></tr>
<tr><td>1-LA2003</td><td colspan="2">Intragroup loans: loans to sister companies</td><td>Yes</td><td>Q</td><td>2-LA2003</td><td colspan="2">Intragroup loans: loans from sister companies</td><td>Yes</td><td>Q</td></tr>
<tr><td>1-N02000</td><td colspan="2">Extra-group loans</td><td>Yes</td><td>Q</td><td>2-N02000</td><td colspan="2">Extra-group loans</td><td>Yes</td><td>Q</td></tr>
<tr><td rowspan="2">1-003000</td><td rowspan="2">Debt securities</td><td>ISIN</td><td>No</td><td rowspan="2">M</td><td rowspan="2">2-003000</td><td rowspan="2">Debt securities</td><td>ISIN</td><td>No</td><td rowspan="2">M</td></tr>
<tr><td>non-ISIN</td><td>Yes</td><td>non-ISIN</td><td>Yes</td></tr>
<tr><td rowspan="2">1-005000</td><td rowspan="2">Equity securities</td><td>ISIN</td><td>No</td><td rowspan="2">M</td><td rowspan="2">2-C05000</td><td rowspan="2">Capital</td><td>ISIN</td><td>No</td><td rowspan="2">M</td></tr>
<tr><td>non-ISIN</td><td>Yes</td><td>non-ISIN</td><td>Yes</td></tr>
<tr><td>1-006000</td><td colspan="2">Non-financial assets</td><td>Yes</td><td>M</td><td>2-002050</td><td colspan="2">Short sales</td><td>Yes</td><td>M</td></tr>
<tr><td>1-007000</td><td colspan="2">Financial derivatives</td><td>Yes</td><td>M</td><td>2-011000</td><td colspan="2">Financial derivatives</td><td>Yes</td><td>M</td></tr>
<tr><td>1-090000</td><td colspan="2">Other assets</td><td>Yes</td><td>Q</td><td>2-090000</td><td colspan="2">Other liabilities</td><td>Yes</td><td>Q</td></tr>
<tr><td>1-000000</td><td colspan="2">TOTAL Assets</td><td>Yes</td><td>Q</td><td>2-000000</td><td colspan="2">TOTAL Liabilities</td><td>Yes</td><td>Q</td></tr>
</table>

Source: BCL

# Matching BCL Balance Sheet Data with IMF (2018)'s Prototype Balance Sheets

**Unconditional treatment of specific items**

- NFA, L_OI, CD_OI_A, Deriv, SS_L, Other_L

**Conditional treatment of specific items**

- Equity: E_DI *versus* E_PI
- Debt: D_DI *versus* D_PI

**=> Equity: E_DI *versus* E_PI**

- Equity as direct investment (E_DI) *versus* equity as portfolio investment (E_PI)
  - Decision variable: **Affiliation link**
  - Equity share ≥ 10% as E_DI
  - Equity share < 10% as E_PI

**Table 10: Matching BCL balance sheet data with IMF (2018)'s prototype balance sheets**

| | | Assets (A) | | Liabilities (L) | |
|---|---|---|---|---|---|
| | | IMF (2018) prototype BS items | BS items available in the BCL database | IMF (2018) prototype BS items | BS items available in the BCL database |
| Non-Financial Assets | | *NFA* | 1-006000 | | |
| Direct investment | Equity | *E_DI_A* | 1-005000 with *dumAL_A*=1 | *E_DI_L* | 2-C05000 with *dumAL_L*=1 |
| | Debt | *D_DI_A* | 1-LA2001+1-LA2002+ 1-LA2003+(1-003000 with *dumh_A*=1) | *D_DI_L* | 2-LA2001+2-LA2002+ 2-LA2003+(2-003000 with *dumh_L*=1) |
| Portfolio investment | Equity | *E_PI_A* | 1-005000 with *dumAL_A*=0 | *E_PI_L* | 2-C05000 with *dumAL_L*=0 |
| | Debt | *D_PI_A* | 1-003000 with *dumh_A*=0 | *D_PI_L* | 2-003000 with *dumh_L*=0 |
| Other investment | Loans | *L_OI_A* | 1-N02000 | *L_OI_L* | 2-N02000 |
| | Curr. & Deposits | *CD_OI_A* | 1-090000 | | |
| Financial derivatives | | *Deriv_A* | 1-007000 | *Deriv_L* | 2-011000 |
| Short sales | | | | *SS_L* | 2-002050 |
| Other liabilities | | | | *Other_L* | 2-090000 |

Source: IMF (2018) and BCL. NB: The term "BS items" stands for balance sheet items.

**=> Debt: D_DI *versus* D_PI**

- Debt as direct investment (D_DI) *versus* debt as portfolio investment (D_PI)
- Debt securities include non-hybrid and hybrid instruments
  - Decision variable: **Instrument negotiability**
  - Hybrid instruments (non-negotiable) as D_DI, adding to intragroup loans
  - Non-hybrid instruments (negotiable) as D_PI

# Methodology to Identify the Prototype Balance Sheets

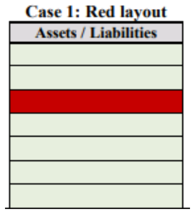
**Objective**

- Screen the balance sheet of each CFIs
- Match with the pre-determined prototype balance sheet

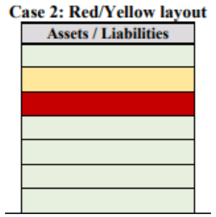
**Criteria**

- Qualitative criteria: Predominance of balance sheet items
- Advantage: Avoid arbitrary quantitative thresholds

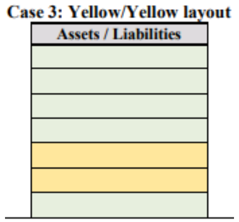
Schematic representation




*Red layout* ⇔
- *Existence criterion*: $s_1 > 0$
- *Predominance criterion*: $s_1 > (1 - s_1)$
- *Strong predominance over the second largest item*: $(s_1 - s_2) > \sigma^2/\mu$




*Red / Yellow layout* ⇔
- *Existence criterion*: $s_1 > 0$ and $s_2 > 0$
- *Predominance criterion*: $s_1 > (1 - s_1)$
- *Weak predominance over the second largest item*: $(s_1 - s_2) \leq \sigma^2/\mu$




*Yellow / Yellow layout* ⇔
- *Existence criterion*: $s_1 > 0$ and $s_2 > 0$
- *Non-predominance criterion*: $s_1 \leq (1 - s_1)$
- *Non-predominance criterion*: $s_2 \leq (1 - s_2)$

# Empirical Results: Identified Prototype Balance Sheets

Chart 1.1: Holding corporation as defined in IMF (2018)

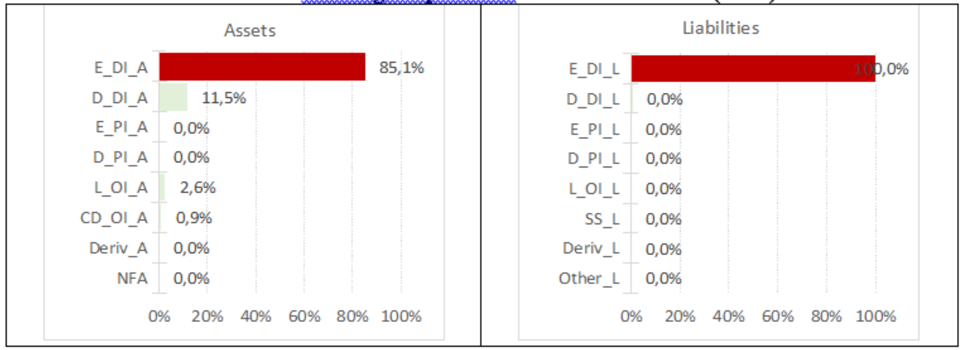



Chart 1.2: Conduit corporation as defined in IMF (2018)

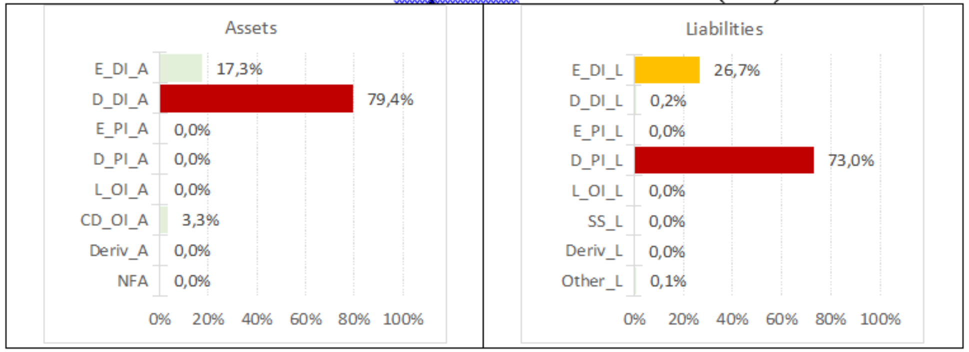



Chart 1.3: Intragroup lending corporation as defined in IMF (2018)

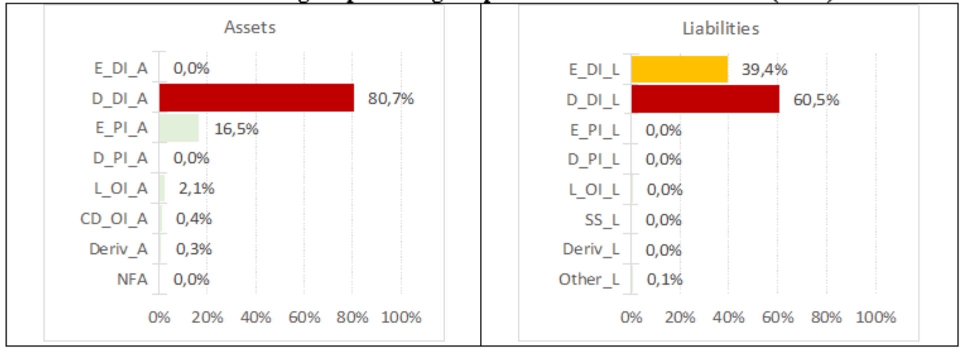



Chart 1.4: Captive factoring and invoicing corporation as defined in IMF (2018)

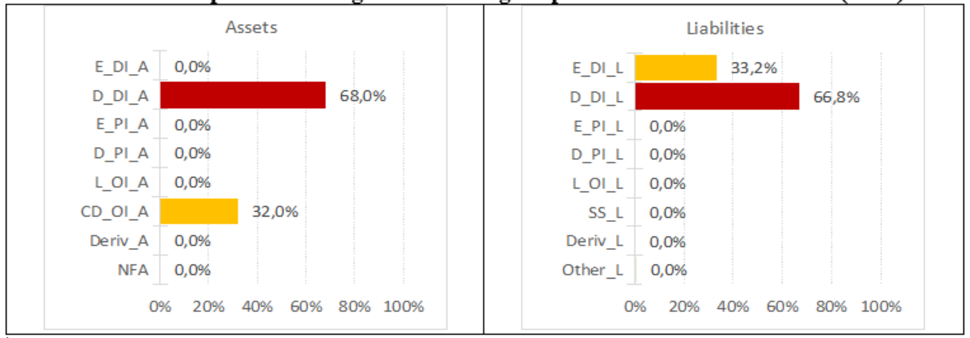



Chart 1.5: Loan origination corporation as defined in IMF (2018)

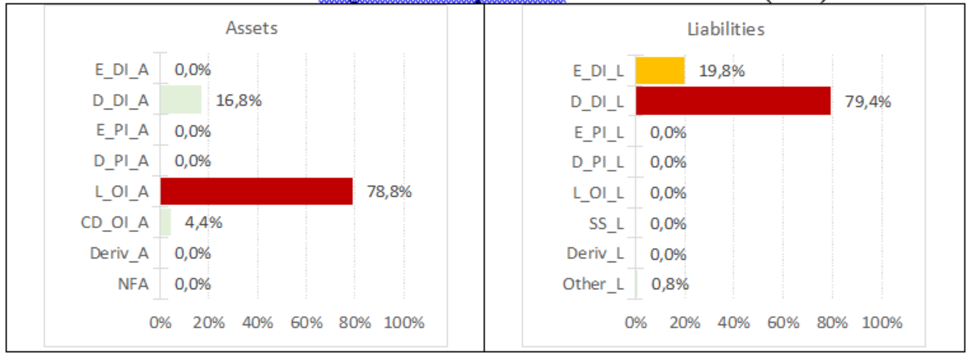
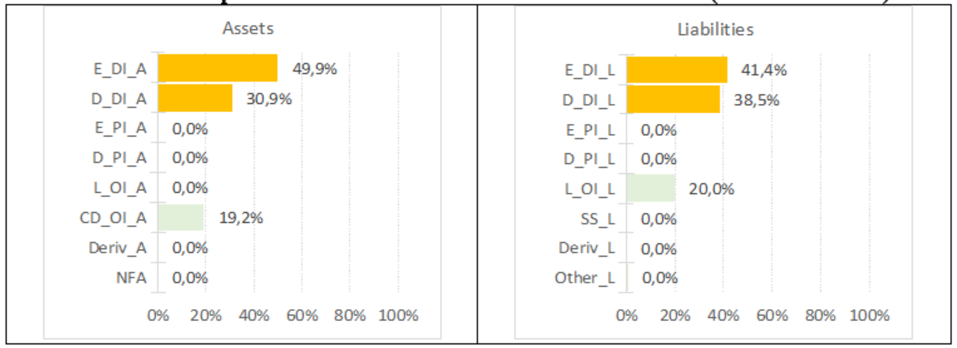



Chart 1.6: Corporations with a mixed balance sheet structure (mixed structure)



# Empirical Results: Typology by Total Number of CFIs

**Types of entities**

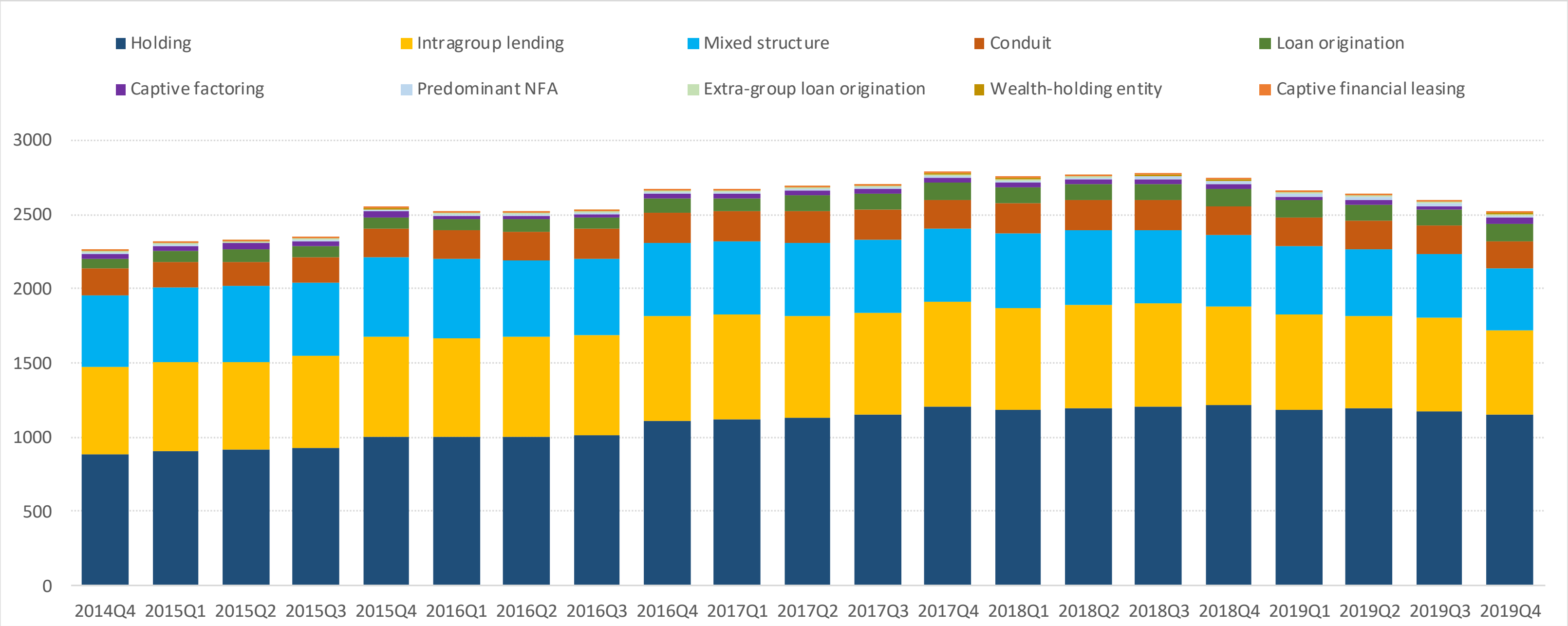
- **Traditional types listed in the literature:** holding, intragroup lending, conduit, loan origination, captive factoring, wealth-holding entity, captive financial leasing
- **New types:** mixed structures, predominant NFA, extra-group loan origination

**Main types**

- Holding corporations (42%)
- Intragroup lending companies (25%)
- Mixed structures (19%)
- Conduits (7%)
- Loan origination companies (4%)

- => These corporations represent about 98% of the total number of CFIs with at least EUR 500 million in total assets

**Chart 2: Typology of CFIs (by number)**




**Evolution over time**

- The relative proportion of the different types of CFIs remains stable over time (Q4 2014 – Q4 2019)

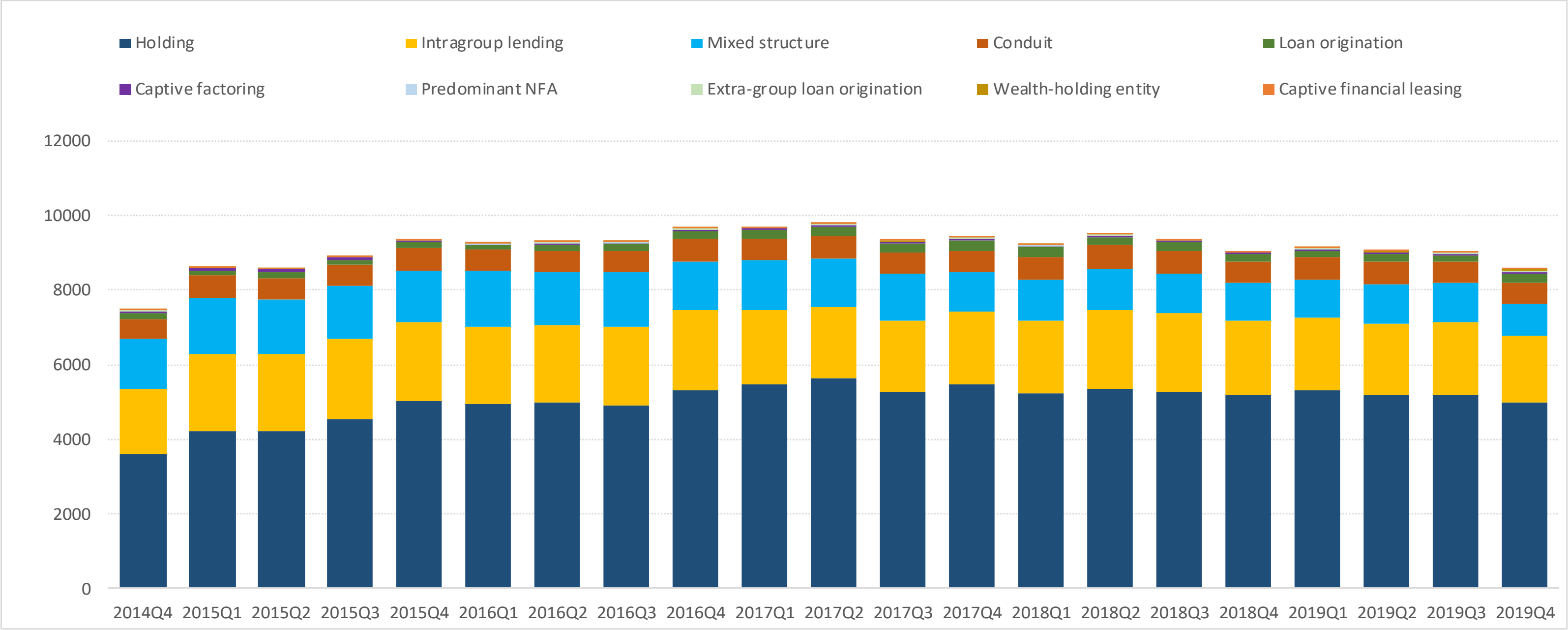
# Empirical Results: Typology by Total Assets held by CFIs

**Main asset holders**

- Holding (55%)
- Intragroup lending companies (22%)
- Mixed structures (14%)
- Conduits (6%)
- Loan origination companies (2%)

- => These corporations represent about 99% of the total assets held by CFIs with at least EUR 500 million in total assets

**Chart 3: Typology of CFIs (by total assets held)**




**Evolution over time**

- The relative proportion of the different types of CFIs remains stable over time (Q4 2014 – Q4 2019)

**Remaining types**

- Captive factoring and invoicing corporations, companies with predominant non-financial assets, extra-group loan origination firms, wealth-holding entities and captive financial leasing corporations

**Thanks for your attention!**

# Reserve Slides

# Caution about Type Duplicates for a given S127 Entity


**Caution**

- Limits of the identification based on prototype balance sheets: Types with Similar Prototype Balance Sheet
- => Avoid **type duplicates** for a given S127 entity
- => Example: **intragroup lending** *versus* **captive financial leasing**

**Table 3.1: Intragroup lending corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

**Table 5: Captive financial leasing corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

**Question**

- How to distinguish btw intragroup lending and captive financial leasing?

**Potential solution**

- Identification of captive financial leasing corporations based on the **NACE code:** K6491 "Financial leasing" (UN (2008))
- Identification of intragroup lending corporations based on the prototype balance sheet (Table 3.1) and with NACE code ≠ K6491 "Financial leasing"

# Fine-Tuned Definitions of the Types of S127 Entities

**Definitions of the type of S127 entities**

- For each type, reflection about its definition => fine-tuned definition
- **Advantages**
  - Improve the classification to better suit empirical facts
  - Avoid the exclusion of any S127 entity from the typology or the creation of a large "miscellaneous category"

- **Example**: Conduit corporations
- **Definition by IMF (2018):** "*Conduits raise or borrow funds from unrelated enterprises or the open market and remit those funds to its parent or to other affiliated enterprises. Conduits typically do not transact on the open markets on the assets side. A synonym for conduit is external financing.*"

**Table 2.1: Conduit corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

Remits funds to parent or to other related enterprises (E_DI_A, D_DI_A) based on …

**Table 2.2: Variants of conduit corporations**

| Variants of prototype balance sheet | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | Yes | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: Adapted from IMF (2018)

…funds raised or borrowed from unrelated enterprises (L_OI_L) or open market (E_PI_L, D_PI_L)

**Limits**

- The prototype balance sheet by IMF (2018) does not cover all the possible external financing means (only debt securities as PI)

**Solution**

- Consider variants of the prototype balance sheet of conduits (with equity as PI and loans granted by unrelated enterprises)

# Fine-Tuned Definitions of the Types of S127 Entities

- **Example**: Holding corporations

- **Definition by IMF (2018):** "*A holding corporation mainly owns a controlling-level amount of equity in one or more subsidiaries in a passive manner, i.e. without providing any other service to its subsidiaries. Thus, holdings do not administer or manage other units or undertake any management activities.*"

**Table 1.1: Holding corporations**

| Prototype balance sheet (IMF (2018)) | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | No | |
| Direct investment | Equity | | |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: IMF (2018)

Holding the assets (owning controlling level of equity, *E_DI_A*) of subsidiary corporations…

**Table 1.2: Variants of holding corporations**

| Variants of prototype balance sheet | | Assets | Liabilities |
|---|---|---|---|
| Non-Financial Assets | | Yes | |
| Direct investment | Equity | *E_DI_A* | *E_DI_L* |
| | Debt | | |
| Portfolio investment | Equity | | |
| | Debt | | |
| Other investment | Loans | | |
| | Currency & Deposits | | |

Source: Adapted from IMF (2018)

…on behalf of its parents (*E_DI_L*) or its direct shareholder affiliated to the same parent

**Limits**

- The prototype balance sheet by IMF (2018) considers the definition of a **pure holding**. Should we classify **holdings with ancillary activities** within this category?

**Solution**

- Consider variants of the prototype balance sheet of holdings => distinction btw **pure holdings** and **mixed holdings**

# Going forward: Climbing the Ownership Chains

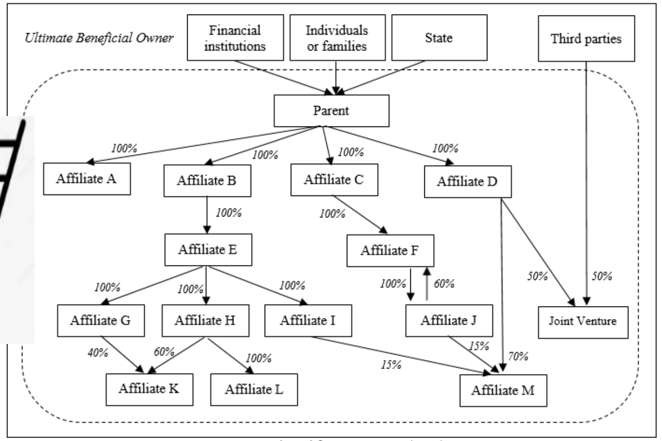
**Going forward: Climbing the ownership chains**

- S127 entities take part of a more or less complex MNE structure
- Need to understand this structure and notably the head of the structure (parent, decision centre)

**Objectives**

- Identify the **name of the group** owning the S127 entities
- Highlight the **main economic activity** undertaken by the group
- Determine the **geographical location of the operational headquarters** (parent) owning the S127 entities
- **Alternative map of FDI** according to the parent owning the S127 entity rather than the balance sheet counterpart of the S127 entity

Diagram 1: Example of a hypothetical complex structure of MNE




Source: Adapted from UNCTAD (2016)

**Sources**

- Annual accounts of S127 entities (Business Register), Annual accounts released by the group (website of the group)
- Specific websites: US Securities and Exchange Commission, Bloomberg
- Alternative datasets: GLEIF, EGR, RIAD

**Challenges**

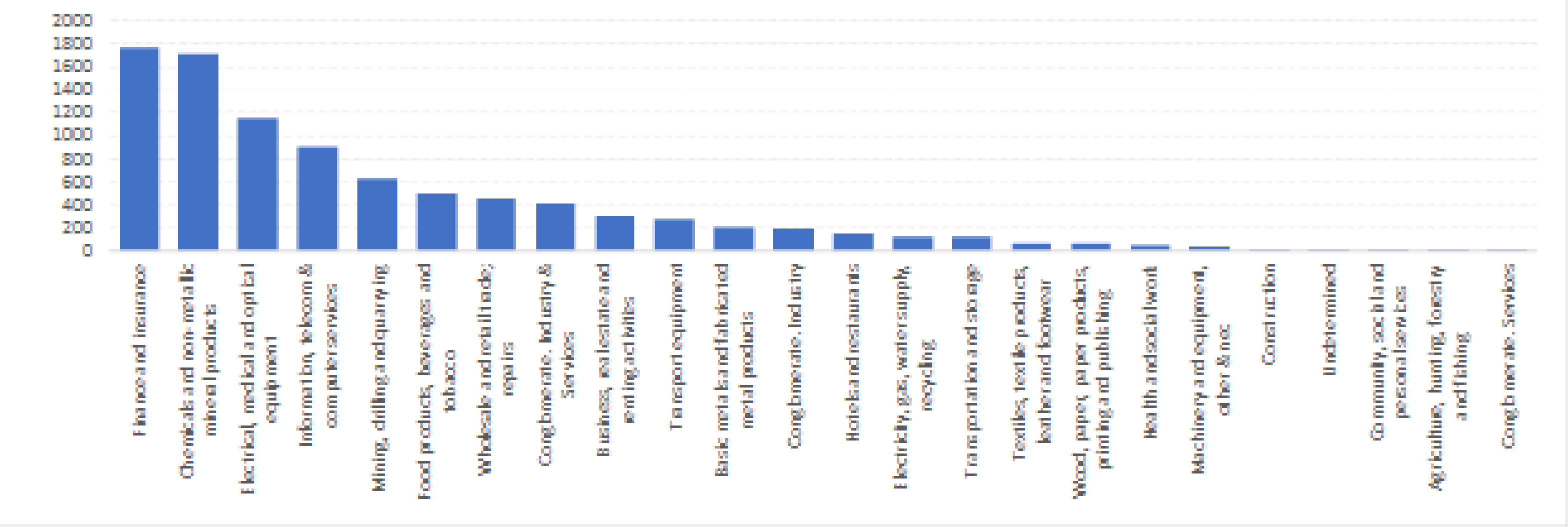
- Investigations can be time-consuming, nobably for specific groups featuring complex structures
- Quantitative dimension (≈ 2500 CFIs to affiliate to a group) & Qualitative dimension (complexity of the structure of a group)

# Main Economic Activity of Groups owning S127 entities

Financial activities (20%)

Non-financial activities (80%)

**Chart 1.1: Total assets of S127 entities by main economic activity of their affiliated group**




Source: Authors' calculations. Units: EUR billion. Average Dec. 2014 - Dec. 2019

44% relate to investment funds (private equity, real estate, renewable energy)

78% relate to pharmaceutical groups

49% relate to groups manufacturing electrical equipment and 49% to medical equipment

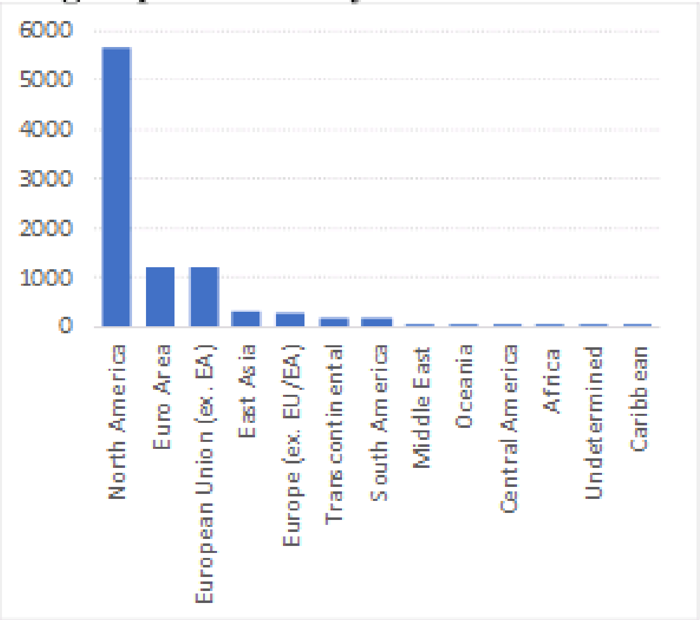
55% relate to telecommunications

48% relate to petrochemical groups

57% relate to beverage industry and 43% to food industry

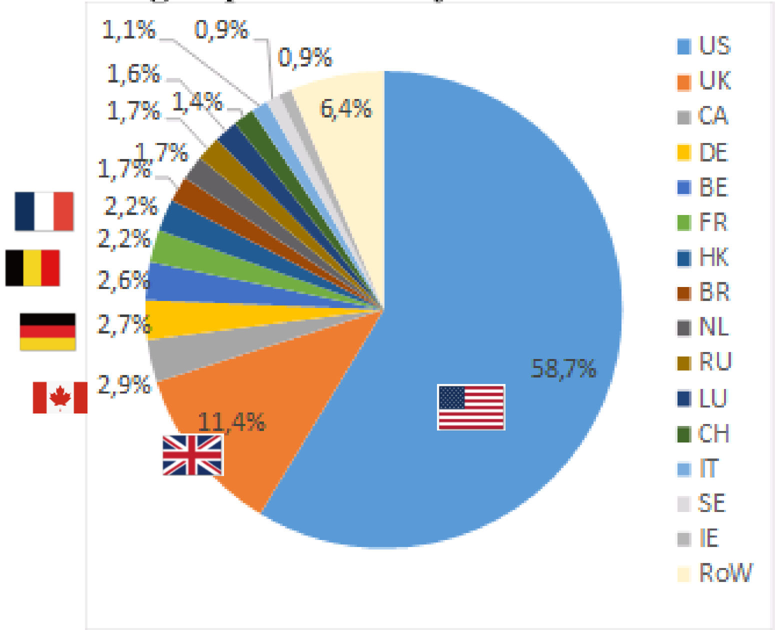
# Headquarters of Groups resorting to S127 entities

Chart 2.1: Total assets of S127 entities by groups' nationality: economic zones




Source: Authors' calculations. Units: EUR billion. Average Dec. 2014 - Dec. 2019

Chart 2.2: Total assets of S127 entities by groups' nationality: main countries



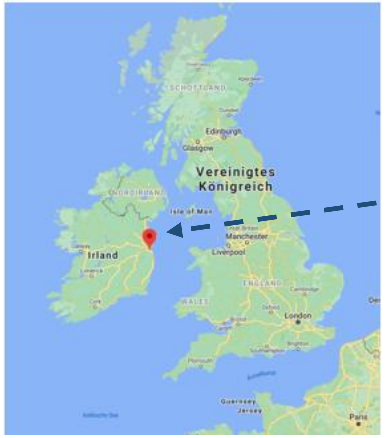

Source: Authors' calculations. Units: Percent. Average Dec. 2014 - Dec. 2019

**Robustness checks**

- Comparison with alternative datasets: GLEIF, EGR, RIAD
- Results match for a large majority of the groups
- Still, existence of differences (for a minority of the groups)
- **Potential causes**: methodological differences (lack of clear distinction between the operational and legal headquarters, consideration of intermediary entities along the ownership chains) and data limitations (data unavailability)

# Geographical location of Group Headquarters
# Difficulty Encountered: Operational *versus* Legal

**Group manufacturing electrical equipment**
**IE Headquarter**

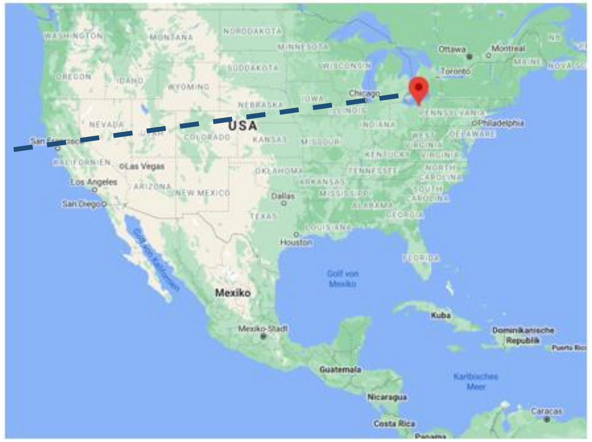


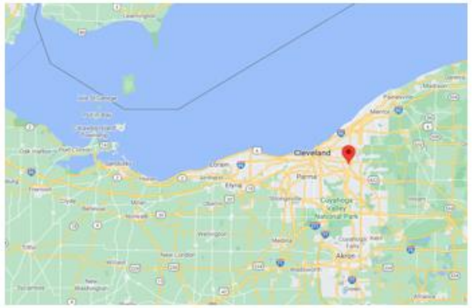
**Source:** Google maps

The current parent is replaced by a foreign parent, and the original parent company becomes a subsidiary of the foreign parent

**Group manufacturing electrical equipment**
**US Headquarter**

Executives and operational headquarters stay in the original country



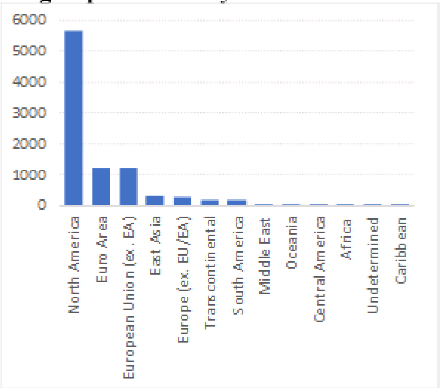


**Source:** Google maps

# Geographical Location: Headquarters *versus* Balance Sheet Counterparts

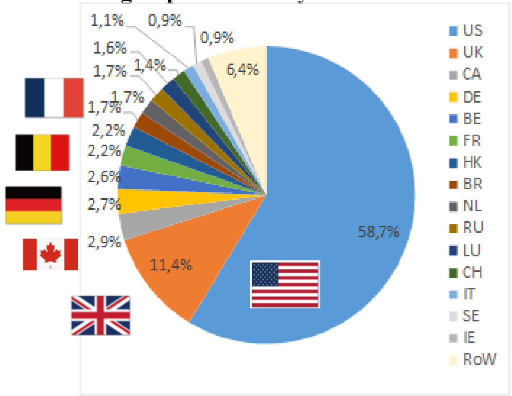
Headquarters counterparts

Chart 2.1: Total assets of S127 entities by groups' nationality: economic zones




Source: Authors' calculations. Units: EUR billion. Average Dec. 2014 - Dec. 2019

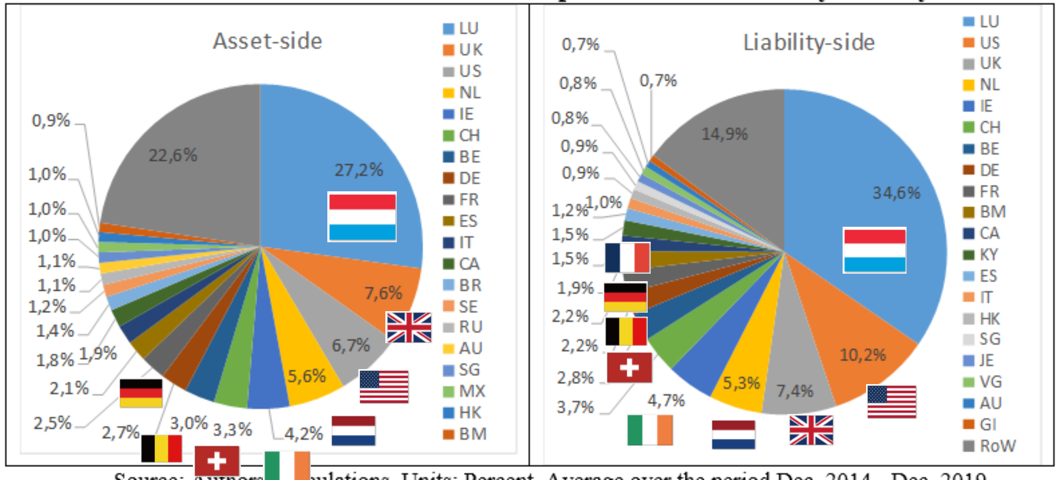
Chart 2.2: Total assets of S127 entities by groups' nationality: main countries




Source: Authors' calculations. Units: Percent. Average Dec. 2014 - Dec. 2019

Balance sheet counterparts

Chart 3.2: Balance sheet counterpart of S127 entities by country




Source: Authors' calculations. Units: Percent. Average over the period Dec. 2014 - Dec. 2019

## Balance Sheet Counterpart

- Relative importance of the domestic (LU) counterpart
- => Most MNEs own more than one S127 entity in Luxembourg
- => MNEs own a network of captive financial institutions - potentially of different types and of different sizes - to finance their business activities and structure their strategic corporate investments

# Concluding remarks

**Work accomplished so far**

- **Typology** of S127 entities
- Identification of the **parent (operational headquarters)**
- **Geographical location** of the parent
- **Main economic activity** of the affiliated group


**Implications**

- Clearer picture of sector S127
- Better understanding of sector S127

# A Typology of Captive Financial Institutions and Money Lenders (sector S127) in Luxembourg

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**Abstract:**

The paper presents a typology of captive financial institutions and money lenders (CFIs, sector S127) in Luxembourg. Given data availability, the analysis relies on a sub-sample of the whole population of CFIs. This sub-sample features CFIs whose total assets are at least equal to EUR 500 million. As of Q4 2018, this sub-sample represents about 5% of the total number of CFIs in Luxembourg, and about 85% of the total assets held by CFIs in Luxembourg. The period of analysis spans Q4 2014 to Q4 2019. In terms of number and on average over the period Q4 2014 – Q4 2019, the sample of CFIs regroups holding corporations (42%), intragroup lending companies (25%), mixed structures (19%), conduits (7%) and loan origination companies (4%). These corporations represent about 98% of the total number of CFIs whose total assets of at least EUR 500 million. The remaining types that complete the sample of CFIs consist of captive factoring and invoicing corporations, companies with predominant non-financial assets, extra-group loan origination firms, wealth-holding entities and captive financial leasing corporations. In addition, on average over the period Q4 2014 – Q4 2019, holding corporations own the largest share of total assets (55%) followed by intragroup lending companies (22%), mixed structures (14%), conduits (6%) and loan origination companies (2%). These corporations account for about 99% of the total assets held by CFIs whose total assets are at least equal to EUR 500 million. The relative importance of holding corporations, intragroup lending companies, mixed structures, conduits and loan origination companies suggests that Luxembourg plays the role of a global financial centre for MNEs. The latter benefit from Luxembourg as a financial platform to manage their business activities and structure their corporate investments.

**Keywords:**

Captive financial institutions and money lenders, Sector S127, Typology

## 1. Introduction:

The manuals of statistics published by the main international bodies define captive financial institutions and money lenders (CFIs) as "institutional units providing financial services other than insurance, where most of either their assets or liabilities are not transacted on open financial markets. It includes entities transacting only within a limited group of units, such as with subsidiaries or subsidiaries of the same holding corporation, or entities that provide loans from own funds provided by only one sponsor" (OECD (2008), UN (2009), IMF (2009), EC (2013), IMF (2017))[1].

The adjective "captive" means that the financial company is here *owned and controlled by* and typically for the sole use of an organisation: the parent. Within a MNE's structure, captive financial entities generally lie between the decision body (i.e. the headquarters) and the operational affiliates (i.e. those relating to the production activities).

Thereby, captive financial entities can serve different investment and financial purposes by the means of different types of corporations. Whether directly or indirectly, they usually own the share capital of one or several operational entities of the group and can manage the decisions of its subsidiaries. They are often used to optimise the management of liquidities and the financing of a group's entities. Such activities cover the pooling of cash proceeds from the operational affiliates, the granting of intragroup loans, the raising of funds on external markets for lending on behalf of its parent, the centralised management of treasury activities and accounts receivables, etc.

Owing to their role of financial intermediary within the group, captive financial institutions and money lenders are often located in jurisdictions that act as global financial centres and share the following structural characteristics: openness to trade and financial flows, political and economic stability, international tax treaty network, access to different forms of finance, reliable communication and financial infrastructures, skilled and multilingual workforce, etc.

When settled in these jurisdictions, captive financial institutions and money lenders often contribute to an increase, sometimes substantially so, in the flows of foreign direct investment at national level. In this context, there is a need to understand these influential players on the scene of international capital flows. This topic is of importance for Luxembourg

[1] For more information, the reader can refer to OECD (2008)'s Benchmark Definition of Foreign Direct Investment p. 162-163, p. 77-78, UN (2009)'s SNA2008 framework Para 4.113 to 4.114 p. 77-78, IMF (2009)'s BPM6 Para. 4.82 to 4.87 p. 65-66, EC (2013)'s European System of Accounts ESA 2010 Para 2.98 to 2.99 p. 42, IMF (2017)'s Monetary and Financial Statistics Manual and Compilation Guide Para. 3.181 to 3.188, p. 46-47.

since this global financial centre features a large amount of foreign direct investments whose flows are predominantly initiated by captive financial institutions and money lenders.

A potential way to understand captive financial institutions and money lenders is to establish a typology of these entities. To our best knowledge, two pioneering papers in the literature came up with elements of a typology for the sector S127: ECB-Eurostat-OECD (2013) and IMF (2018). The ECB-Eurostat-OECD (2013)'s typology relies essentially on qualitative criteria pertaining to institutional sectors and economic activity[2]. In addition to the latter criteria, the IMF (2018)'s typology includes qualitative criteria regarding the resident parent, the production and the FDI pass-through investment. More importantly, the IMF (2018)'s typology puts forward prototype balance sheets assigned to specific types of corporations. Despite the advances made, neither of these papers attempted to test a typology of sector S127 empirically.

Against this background, the paper presents an empirical typology of the sector of captive financial institutions and money lenders (S127) in Luxembourg.

## 2. Methodology:

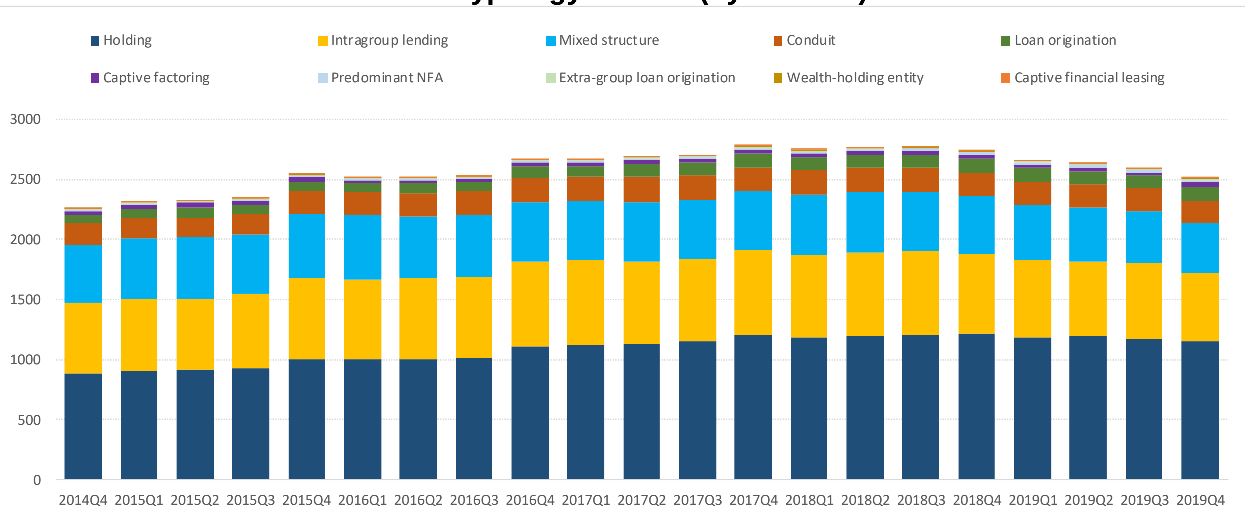
This paper contributes to the literature in various aspects. It fine-tunes definitions of the potential types of CFIs along with their respective prototype balance sheets. In addition, the paper presents a simple and robust qualitative method to identify all the potential types of CFIs, based on the relative predominance of a given balance sheet item over the others. This method highlights not only the prototype balance sheet of CFIs put forward in the literature (ECB-Eurostat-OECD (2013), IMF (2018)), but also variants of the prototype balance sheets defined in this paper as well as new prototype balance sheets of CFIs which may be peculiar to the case of Luxembourg. Thanks to this method, it becomes possible to draft an initial empirical typology of CFIs in Luxembourg, a global financial centre where the sector S127 is of notable importance, particularly in terms of FDI stocks.

[2] Institutional sectors rely on the UN (2009)'s System of National Accounts 2008 (SNA2008) and EC (2013)'s European System of Accounts 2010 (ESA2010) classifications while economic activity is based on the UN (2008)'s International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4.

## 3. Result:

Chart 1 presents the typology of CFIs in Luxembourg, by number of firms. On average over the period Q4 2014 – Q4 2019, the sample of CFIs regroups holding corporations (42%), intragroup lending companies (25%), mixed structures (19%), conduits (7%) and loan origination companies (4%). These corporations represent about 98% of the total number of CFIs with at least EUR 500 million in total assets. The remaining types that complete the sample of CFIs consist of captive factoring and invoicing corporations, companies with predominant non-financial assets, extra-group loan origination firms, wealth-holding entities and captive financial leasing corporations.

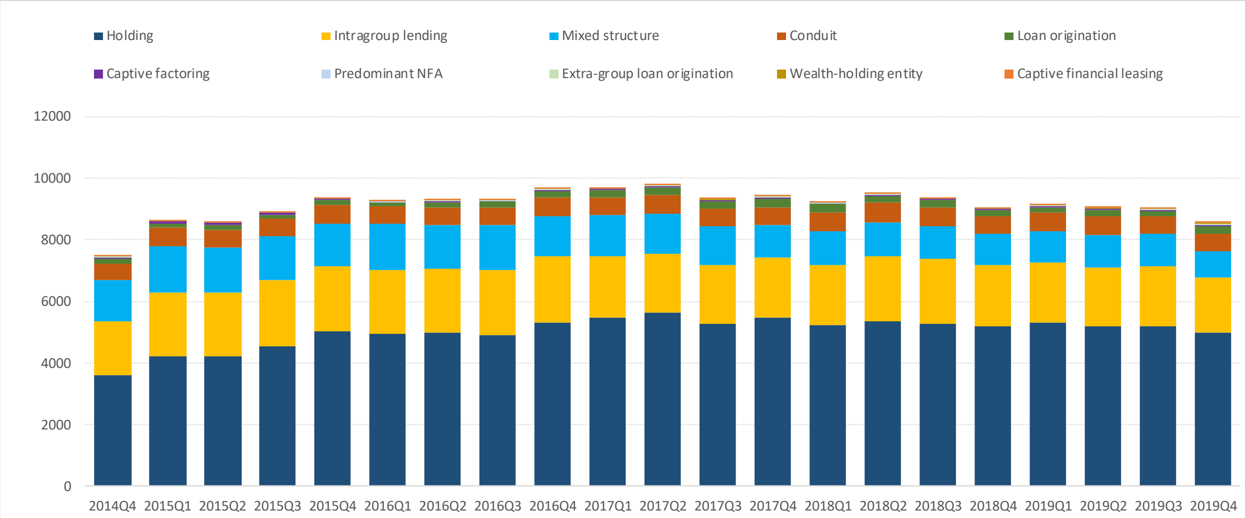
**Chart 1: Typology of CFIs (by number)**




Source: Authors' calculations. Units: Number of CFIs

Chart 2 presents the typology of CFIs in Luxembourg, by total assets held. On average over the period Q4 2014 – Q4 2019, the most important asset holders are holding corporations (55%), followed by intragroup lending companies (22%), mixed structures (14%), conduits (6%) and loan origination companies (2%). These corporations represent about 99% of the total assets held by CFIs with at least EUR 500 million in total assets. The remaining types that complete the sample of CFIs consist of captive factoring and invoicing corporations, companies with predominant non-financial assets, extra-group loan origination firms, wealth-holding entities and captive financial leasing corporations.

**Chart 2: Typology of CFIs (by total assets held)**




Source: Authors' calculations. Units: EUR billion

## 4. Discussion and Conclusion:

Altogether, the relative proportion of the different types of CFIs remains stable over time, whether in terms of number or in terms of total assets. The most important types of CFIs are holding corporations, followed by intragroup lending companies, mixed structures, conduits and loan origination corporations.

The relative importance of holding corporations, intragroup lending companies, mixed structures, conduits and loan origination companies suggests that Luxembourg acts as a global financial centre for multinational enterprises (MNEs), which benefit from Luxembourg as a financial platform for managing their business activities and structuring their corporate investments.

According to the literature (Moyse et al. (2014), Hoor (2018)), several factors can explain the attractiveness of Luxembourg as a platform for MNEs to structure their investment and financing activities. These factors include an open economy, an international tax treaty network and a stable legal and regulatory environment. Moreover, Luxembourg also boasts a qualified, experienced and multilingual workforce and financial infrastructures (e.g. access to the Eurobond market via the Luxembourg stock exchange, clearing entities to settle transactions with Clearstream, large number of foreign banks) that contribute to its integration within the network of financial centres worldwide.

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