Calculation inconsistencies

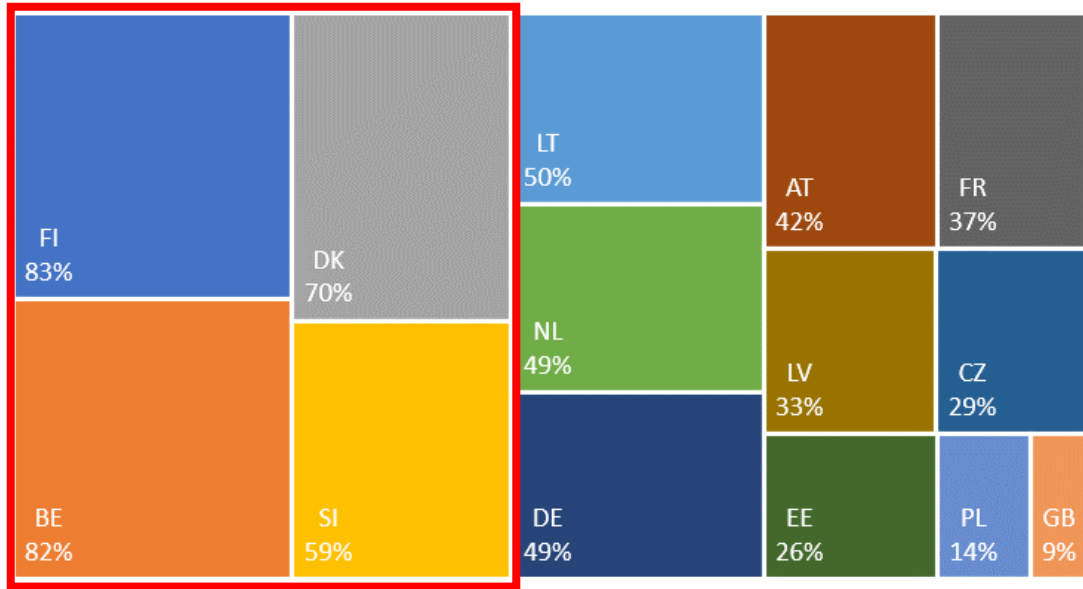- Nina Schüller – Pierre Hamon
- AMANA
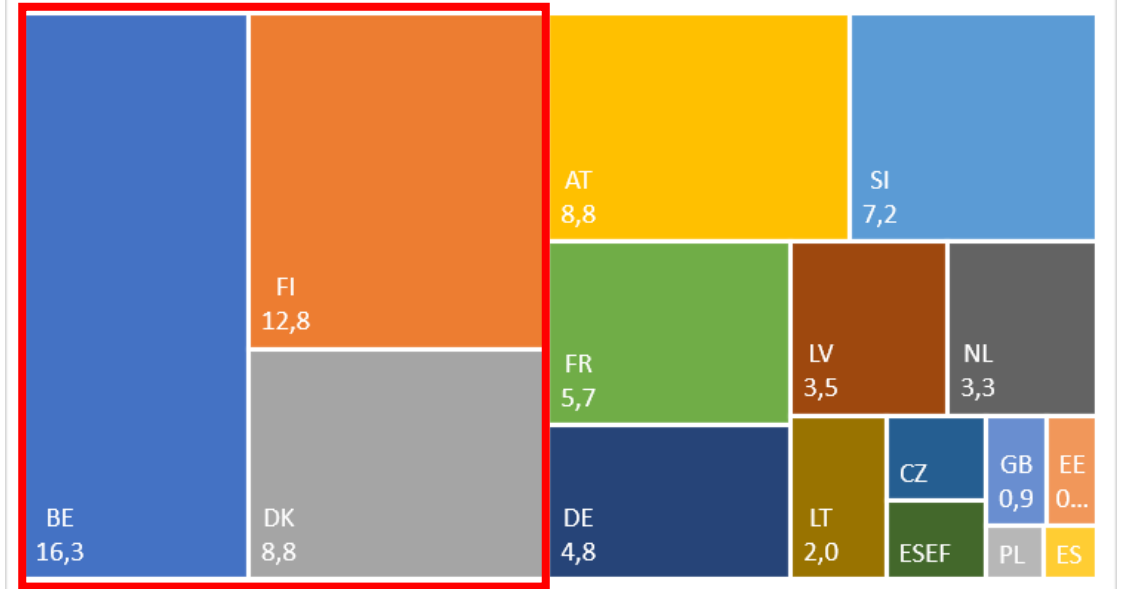- XBRL Europe

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Calculation inconsistencies

- Common issues described by XBRL International as "pitfalls".

   - Incorrect signs - Calculation inconsistencies - Roundings and calculations

   https://www.xbrl.org/tag/esef-errors

Evidencing errors is not a criticism of those who made them, but a general information to everybody so that they can avoid them in the future.

% Inconsistencies/ Total findings

FI 83%	DK 70%	LT 50%	AT 42%	FR 37%	
BE 82%	SI 59%	NL 49%	LV 33%	CZ 29%	
		DE 49%	EE 26%	PL 14%	GB 9%

Nr of inconsistencies per entity

BE 16,3	FI 12,8	AT 8,8	SI 7,2			
	DK 8,8	FR 5,7	LV 3,5	NL 3,3		
		DE 4,8	LT 2,0	CZ	GB 0,9	EE 0...
			ESEF	PL	ES	

Calculation inconsistencies

- Common issue described by XBRL International as "pitfalls".

  - Incorrect signs - Calculation inconsistencies - Roundings and calculations

Common « issues »

- Positive values
- Calculation errors
- Inconsistencies

- Sign logic
- Balances
- Audit

Avoid and detect

Inconsistent calculation

- Calculation inconsistent from ifrs-full:GrossProfit in link role http://x.com/xbrl/2020/roles/ConsolidatedIncomeStatementTable reported sum 1,000 computed sum 3 000 context c-1 unit u-1 unreportedContributingItems none

- InvalidCalculation Error The rounded total '3 000,00' of element 'ProfitLoss' doesn't match the calculated total of '1 000,00' defined by calculation linkbase hierarchy.

Concept label	HTML value	Concept balance	Parsed value	Weight	Calculated value
Income	2 000	Credit	2 000	1	2 000
Expense	- 1 000	Debit	- 1 000	-1	1 000
					❌
Profit (loss)	1 000		1 000		3 000

Inconsistent calculation

- Calculation inconsistent from ifrs-full:GrossProfit in link role http://x.com/xbrl/2020/roles/ConsolidatedIncomeStatementTable reported sum 1,000 computed sum 1 001 context c-1 unit u-1 unreportedContributingItems none

- InvalidCalculation Warning The reported total of 1001 for the element ProfitLoss in 31/12/2020 does not match the calculated total of 1 001.

Concept label	HTML value	Concept balance	Parsed value	Weight	Calculated value
Income	2 152	Credit	2 152	1	2 152
Expense	- 1 151	Debit	1 151	-1	- 1 151
Profit (loss)	1 000		1 000		1 001

Valid calculation

- The fundamental rule is that XBRL values are positive
- Pieces are: fact values, taxonomy balance and weight

Concept label	HTML value	Concept balance	Parsed value	Weight	Calculated value
Income	3 000	Credit	3 000	1	3 000
Expense	-1 000	Debit	1 000	-1	-1 000
Profit (loss)	2 000	CREDIT	2 000		2 000

Valid calculation

- XBRL values can be forced to negative
- Pieces are: fact values, taxonomy balance and weight

Concept label	HTML value	Concept balance	Parsed value	Weight	Calculated value
Income	3 000	Credit	3 000	1	3 000
Expense	-1 000	Debit	1 000	-1	-1 000
Gain (loss)	-1 000	Credit	- 1 000	1	- 1 000
Profit (loss)	1 000	CREDIT	1 000		1 000

Valid calculation

- In the cash flows from operations, the total has no balance
- Pieces are: fact values, taxonomy balance and weight

Concept label	HTML value	Concept balance	Parsed value	Weight	Calculated value
Cash in	3 000	Debit	3 000	1	3 000
Cash out	-1 000	Credit	1 000	-1	- 1 000
Cash inflow (Outflow)	2 000	-	2 000		2 000

Incorrect signs

- Formula in the ESEF/IFRS taxonomy

- This formula runs for 1 174 concepts (that should be always positive)

DistributionAndAdministrativeExpense
DistributionCosts
DividendPayables
DividendsClassifiedAsExpense
DividendsPaid
DividendsPaidClassifiedAsFinancingActivities
DividendsPaidClassifiedAsOperatingActivities
DividendsPaidOrdinaryShares
DividendsPaidOrdinarySharesPerShare
DividendsPaidOtherShares
DividendsPaidOtherSharesPerShare
DividendsPaidToEquityHoldersOfParentClassifiedAsFinancingActivities
DividendsPaidToNoncontrollingInterests
DividendsPaidToNoncontrollingInterestsClassifiedAsFinancingActivities
DividendsPayable
DividendsProposedOrDeclaredBeforeFinancialStatementsAuthorisedForIssueButNotRecognisedAsDistributionToOwners
DividendsProposedOrDeclaredBeforeFinancialStatementsAuthorisedForIssueButNotRecognisedAsDistributionToOwnersPerSha
DividendsReceived
DividendsReceivedClassifiedAsInvestingActivities
DividendsReceivedClassifiedAsOperatingActivities
DividendsReceivedFromAssociatesClassifiedAsInvestingActivities
DividendsReceivedFromInvestmentsAccountedForUsingEquityMethodClassifiedAsInvestingActivities
DividendsReceivedFromJointVenturesClassifiedAsInvestingActivities
DividendsRecognisedAsDistributionsToNoncontrollingInterests
DividendsRecognisedAsDistributionsToOwnersOfParent
DividendsRecognisedAsDistributionsToOwnersOfParentRelatingToCurrentYear
DividendsRecognisedAsDistributionsToOwnersOfParentRelatingToPriorYears
DividendsRecognisedAsDistributionsToOwnersPerShare

- The warning message is: « Reported value is below 0 » (which could be improved as it does not give the tag name)

Preparers must use tagging software that signals calculation issues prominently

calculation error

rounding issue

Auditors must implement a logic to detect in real tagging/sign issues

Outlook

- Calculation 1.1
  XBRL International is working on an updated specification to adress the calculation issues regarding warnings. Current draft proposes to use a specific arcole and to implement interval arithmetics in XBRL processing software tools.

- Calculation 2.0
  Completly new and more powerful/flexible implementation, requirements are currently collected.

XBRL Members can join Working Groups and help with those updates.

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