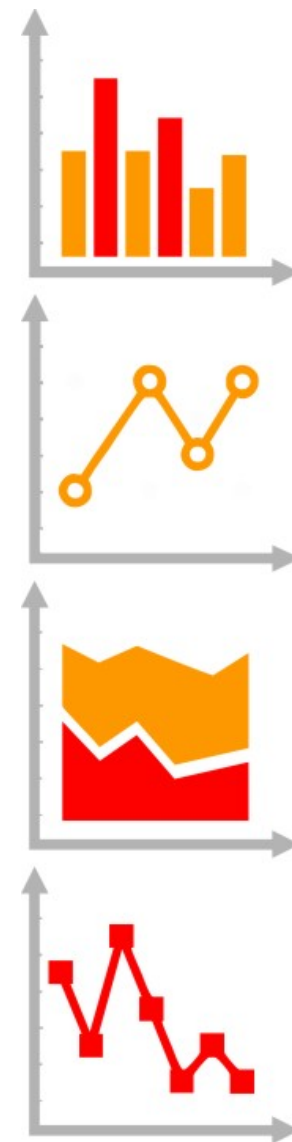


# Calculation of the automatically profiled enterprises characteristics

Guillaume Chanteloup, INSEE



# Outlines

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- ◆ 1) Perimeter of the enterprises
- ◆ 2) Calculation of the continuity
- ◆ 3) Calculation of main activity code
- ◆ 4) Calculation of the consolidated turnover
  - 4 – 1 Description of the algorithm
  - 4 – 2 Some results
- ◆ 5) Calculation of other variables
- ◆ 6) Conclusion

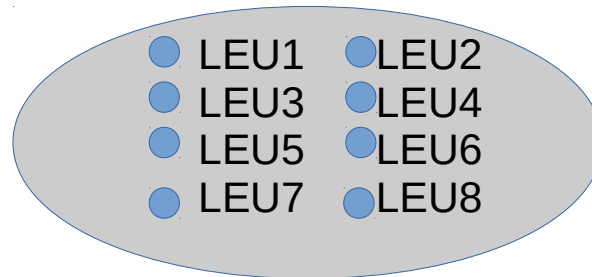
# Perimeter of the enterprises

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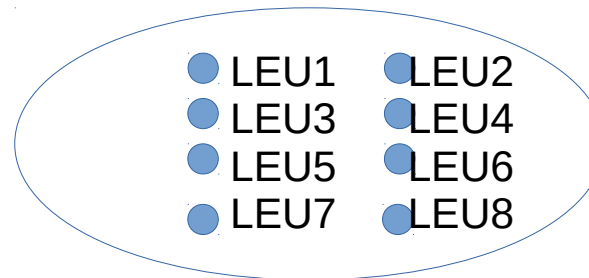
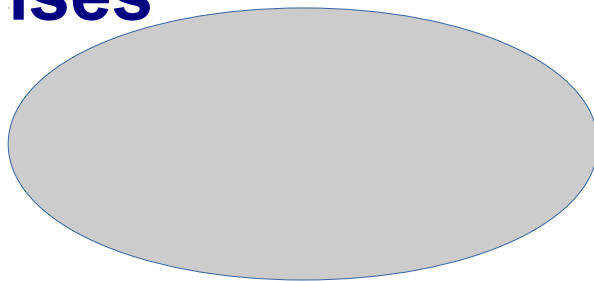
- ◆ **The LEUs of the perimeter are split in 2 parts :**
  - **The LEUs under SBS scope excluding agricultural or financial sector. This subset forms the ENT perimeter**
  - **The other LEUs if any (belonging to agricultural or financial sector) are each considered as an ENT**
  
- ◆ **Why ?**
  
- ◆ **In France : the financial sector is treated by the French national central bank, and the agricultural sector is treated by the ministerial statistical department and out of the SBS scope : elimination of the agricultural/financial units to prevent double counting.**

# Perimeter of the enterprises

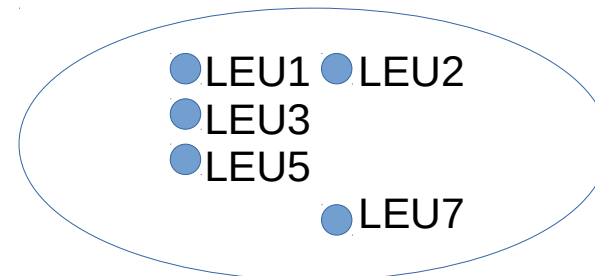
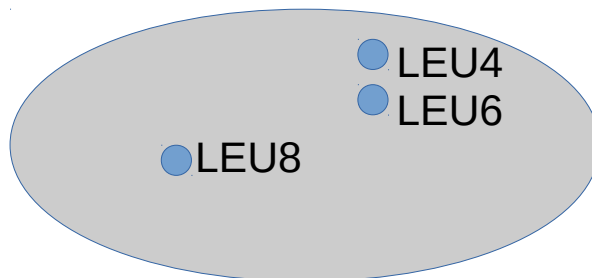
All the LEUs are under SBS scope => 1 enterprise



None of the LEUs are under SBS scope => LEU = enterprises



A portion of the LEUs are under SBS scope => 1 enterprise + LEU = enterprises



# Identification and calculation of the continuity

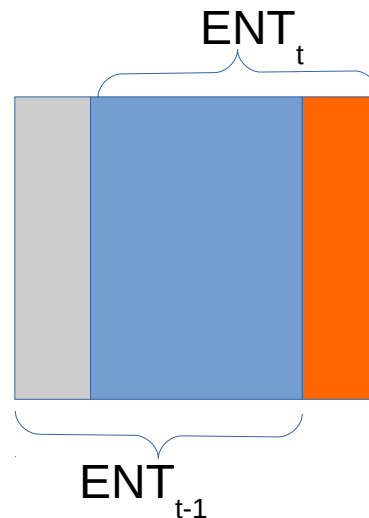
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- ◆ **The continuity is crucial for the identification of the profiled enterprises and for the dissemination of consistent longitudinal statistics.**
- ◆ **For a reference year T, a draft version of the perimeter is given in September T+1, and a final version in April T+2.**
- ◆ **For each data supply, a continuity of ENT is calculated :**
  - **If the ENT is the continuation of the previous one, it keeps its ID**
  - **If not, a new ID is provided.**

# Calculation of the continuity

- ◆ We use the same definition for the continuity of groups and for ENT :

A group (ENT) in T is the continuation of a preliminary group (ENT) in T-1 if and only if the perennial part of these 2 groups (ENTs) is bigger in terms of persons employed than 50 % of the number of persons employed in each one



- ◆ For the year T : employment of  $ENT_{t-1} > 50\%$  of employment of  $ENT_t$
- ◆ For the year T-1 : employment of  $ENT_t > 50\%$  of employment of  $ENT_{t-1}$

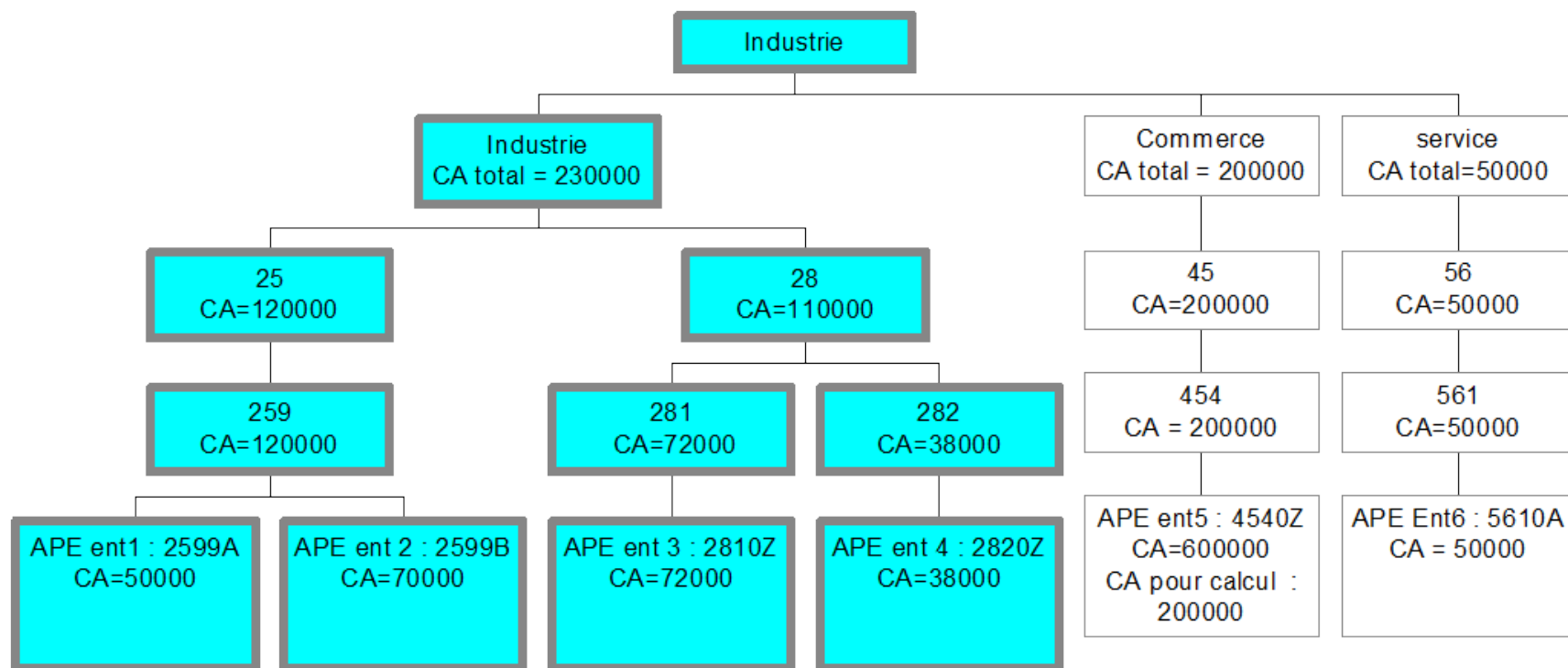
# Calculation of main activity code

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- ◆ Each ENT stored should have a Nace code.
- ◆ First, they are automatically initialized in the SBR using the turnover and the Nace code of the LEUs of the perimeter of the ENT (next slide).
- ◆ Then ENTs' Nace code will be updated through their reply to SBS (if they are selected in the SBS survey) from the breakdown of the consolidated turnover by activities.
- ◆ The initialization of ENTs' Nace code should be as close as possible of the Nace code calculated from ENTs' activities breakdown.

# Calculation of main activity code

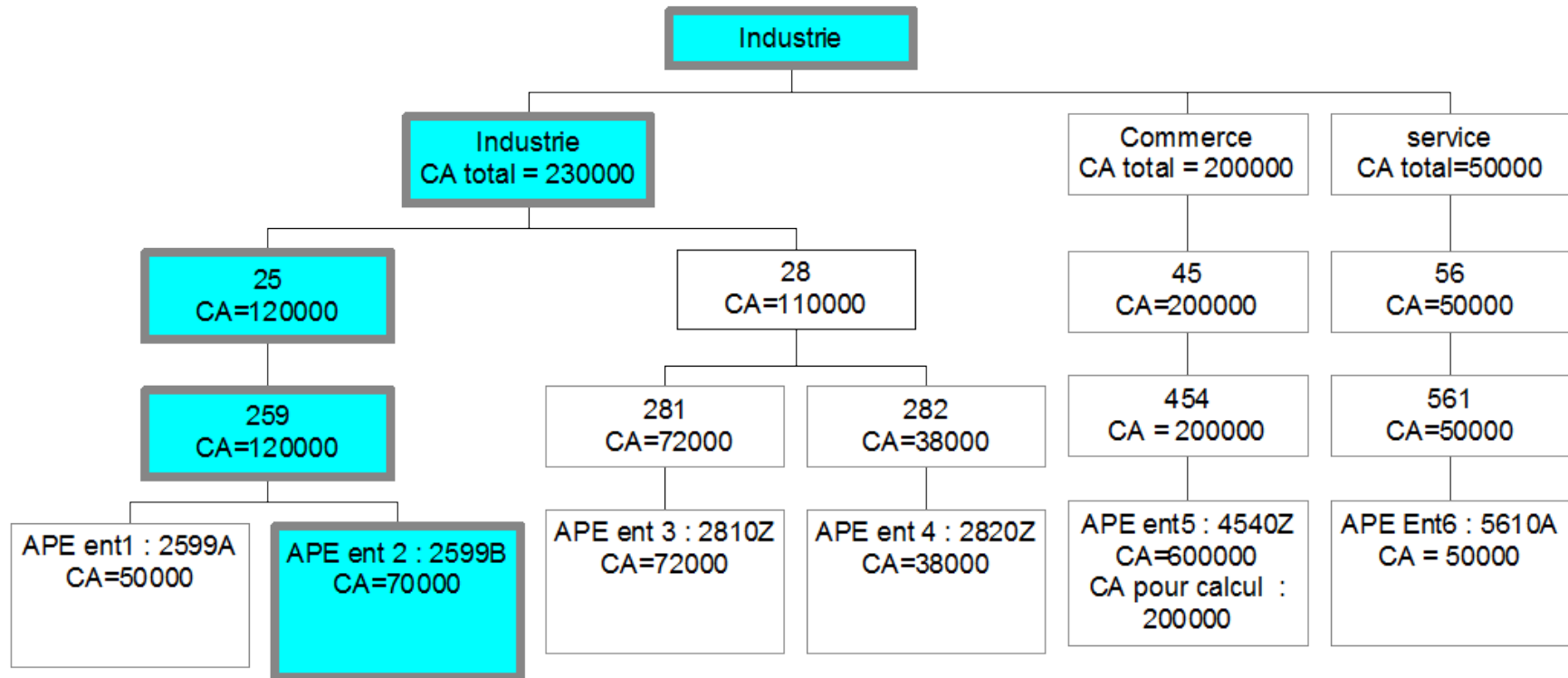
- ◆ First step : bottom-up approach establishing the main activity sector of the ENT





# Calculation of main activity code

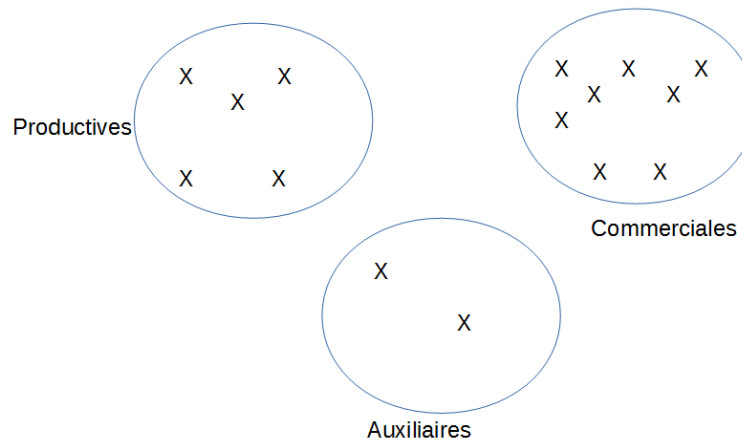
- ◆ Second step : top-down approach to obtain the main activity sector of the ENT



- ◆ The chosen branch is not the branch with the biggest turnover

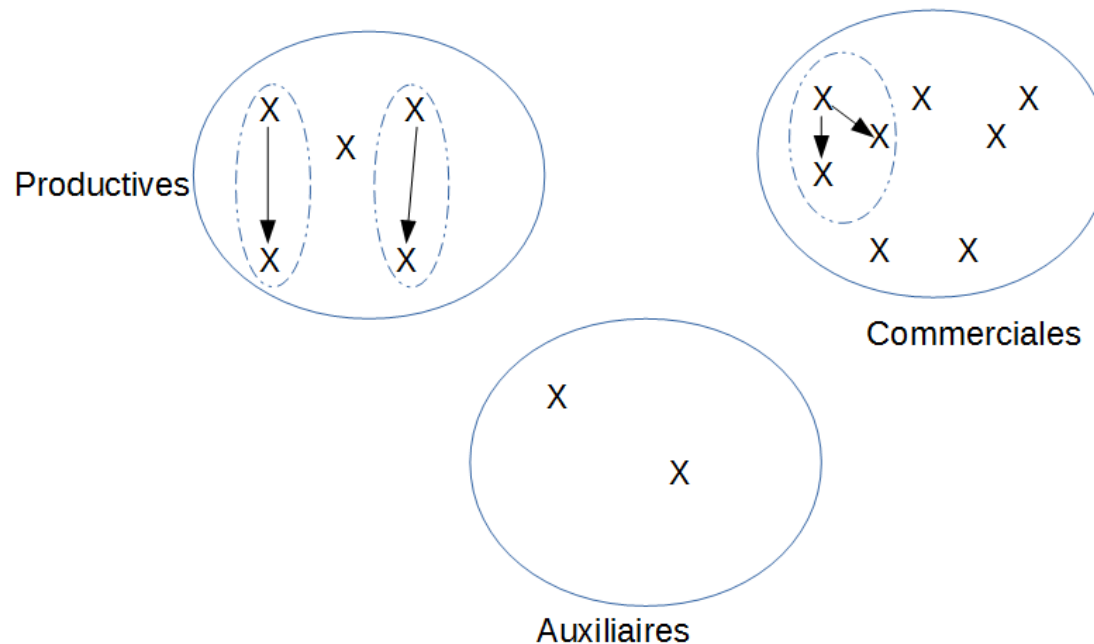
# Calculation of the consolidated turnover (1/3)

- ◆ For a given perimeter of an ENT :
- ◆ A ancillary, commercial or productive type is given to each LEU :
  - Commercial : Nace code between 45 and 47
  - Ancillary : Nace code belongs to a list of activities, and the employment in the LEU among the enterprise is lower than an a priori threshold
  - Productive : if not commercial, nor ancillary



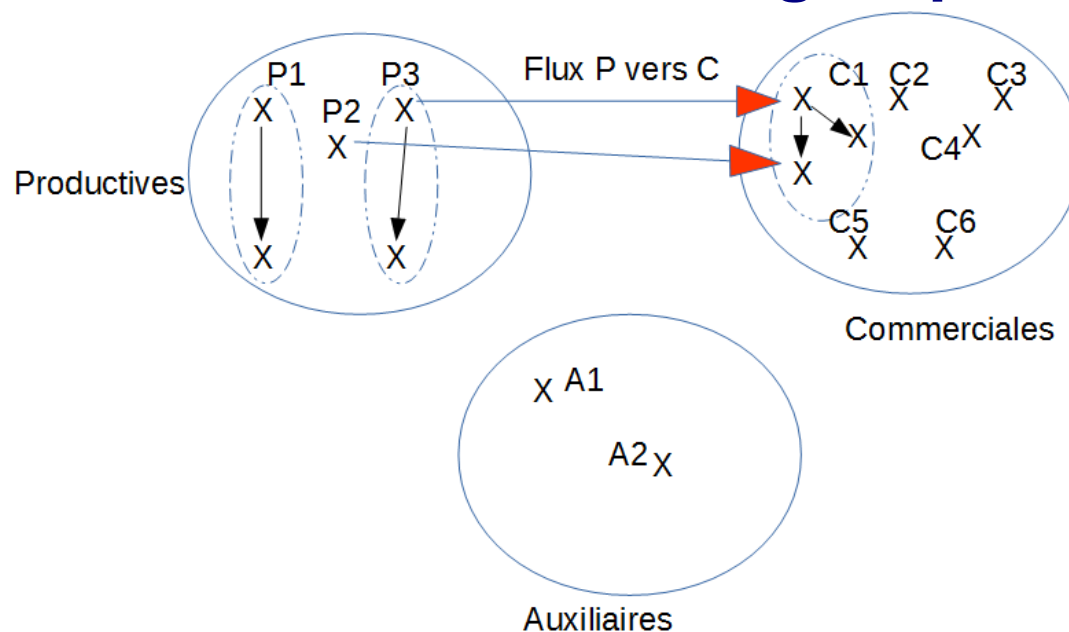
# Calculation of the consolidated turnover (2/3)

- ◆ Then inside each group of productives LEUs and commercial LEUs, we use 2 lists of « a priori » integrated activities to establish which LEUs sell to which ones. Thus we can consolidate the subgroup.



# Calculation of the consolidated turnover (3/3)

- ◆ Then, with 2 other lists of a priori integrated activities (productives towards commercial and commercial towards productive) to establish which LEUs sell to which ones. Thus we can consolidate the sub-group P+C, and C+P.



- ◆ Finally we consolidate the turnover of the ancillary LEUs

# Exemple of consolidated turnover (1/4)

- ◆ The following table presents the tax return for 15 LEUS of an ENT :

	type_LU	Sub-groupe	Purchase of merchandises	Purchase of raw materials	Sell of goods	Sell of merchandises	Sell of services	Turnover
1	P	P1	0	110	136	0	0	136
2	P	P1	0	130	157	0	0	157
3	P	P2	0	15	17	0	0	17
4	P	P3	0	180	215	0	0	215
5	P	P3	0	190	238	0	0	238
6	C	C1	285	0	0	295	0	295
7	C	C1	170	0	0	198	0	198
8	C	C1	50	0	0	85	0	85
9	C	C2	180	0	0	207	0	207
10	C	C3	120	0	0	155	0	155
11	C	C4	170	0	0	201	0	201
12	C	C5	50	0	0	81	0	81
13	C	C6	10	0	0	16	0	16
14	A	A1	0	0	0	0	100	100
15	A	A2	0	0	0	0	200	200

# Exemple of the consolidated turnover (2/4)

## ◆ Consolidation of the « sub-groups » P1, P3, C1

- P1 : -130

- P3 : -190

- C1 : -170 – 50 = -220

	Sub- type_LU	Sub- groupe	Purchase of merchandises	Purchase of raw materials	Sell of goods	Sell of merchandises	Sell of services	Turnover
1	P	P1	0	110	136	0	0	136
2	P	P1	0	130	157	0	0	157
3	P	P2	0	15	17	0	0	17
4	P	P3	0	180	215	0	0	215
5	P	P3	0	190	238	0	0	238
6	C	C1	285	0	0	295	0	295
7	C	C1	170	0	0	198	0	198
8	C	C1	50	0	0	85	0	85
9	C	C2	180	0	0	207	0	207
10	C	C3	120	0	0	155	0	155
11	C	C4	170	0	0	201	0	201
12	C	C5	50	0	0	81	0	81
13	C	C6	10	0	0	16	0	16
14	A	A1	0	0	0	0	100	100
15	A	A2	0	0	0	0	200	200

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# EXample of consolidated turnover (3/4)

## ◆ Consolidation of the « sub-groups » {P2+P3} → C1

- The sales of goods and merchandises are withdrawn :  $17 + 215 + 238 - 190 = 280$

P2

P3

	Sub- type_LU	Sub- groupe	Purchase of merchandises	Purchase of raw materials	Sell of goods	Sell of merchandises	Sell of services	Turnover
1	P	P1	0	110	136	0	0	136
2	P	P1	0	130	157	0	0	157
3	P	P2	0	15	17	0	0	17
4	P	P3	0	180	215	0	0	215
5	P	P3	0	190	238	0	0	238
6	C	C1	285	0	0	295	0	295
7	C	C1	170	0	0	198	0	198
8	C	C1	50	0	0	85	0	85
9	C	C2	180	0	0	207	0	207
10	C	C3	120	0	0	155	0	155
11	C	C4	170	0	0	201	0	201
12	C	C5	50	0	0	81	0	81
13	C	C6	10	0	0	16	0	16
14	A	A1	0	0	0	0	100	100
15	A	A2	0	0	0	0	200	200

22/09/17

# Example of consolidated turnover (4/4)

## ◆ Consolidation of the ancillary LEU

- Their turnover is subtracted :  $-100 -200 = -300$
- The intra flow of this ENT is  $-1,120$ . The consolidated turnover is  $2,301 - 1,120 = 1,181$ .

	Sub- type_LU	Sub- groupe	Purchase of merchandises	Purchase of raw materials	Sell of goods	Sell of merchandises	Sell of services	Turnover
1	P	P1	0	110	136	0	0	136
2	P	P1	0	130	157	0	0	157
3	P	P2	0	15	17	0	0	17
4	P	P3	0	180	215	0	0	215
5	P	P3	0	190	238	0	0	238
6	C	C1	285	0	0	295	0	295
7	C	C1	170	0	0	198	0	198
8	C	C1	50	0	0	85	0	85
9	C	C2	180	0	0	207	0	207
10	C	C3	120	0	0	155	0	155
11	C	C4	170	0	0	201	0	201
12	C	C5	50	0	0	81	0	81
13	C	C6	10	0	0	16	0	16
14	A	A1	0	0	0	0	100	100
15	A	A2	0	0	0	0	200	200

22/09/17



# Results of the consolidated turnover (1/2)

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- ◆ Consolidation effect on all enterprises in K€, 2014

	intra tumover
A	-58 198 624
P+C	-86 149 509
P+P	-8 948 884
C+C	-10 493 127
Total	-163 790 144

**Consolidation effect : -7 %**

- ◆ Half of the intra flows is explained by the intra flows between productive and commercials

# Results of the consolidated turnover (2/2)

ACTIVITY SECTOR	Turnover by APE of the LU	%	Turnover by APE of the group	%	Consolidated turnover by APE of the group	%
AGRICULTURE, FORESTRY AND FISHING	250,736	0	0	0	0	0
MANUFACTURING	697,306,497	30	808,623,964	35	737,262,256	34
CONSTRUCTION	110,169,044	5	113,514,974	5	107,866,650	5
WHOLESALE AND RETAIL TRADE	1,122,107,257	48	1,049,373,019	45	979,719,363	45
INFORMATION AND COMMUNICATION	98,845,895	4	94,419,472	4	90,703,858	4
FINANCIAL AND INSURANCE ACTIVITIES	20,169,711	1	0	0	0	0
REAL ESTATE ACTIVITIES	35,846,163	2	36,213,276	2	34,994,444	2
PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES AND ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	190,986,137	8	169,480,843	7	158,613,436	7
PUBLIC ADMINISTRATION, EDUCATION, HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	27,371,075	1	28,775,444	1	27,948,775	1
OTHER	31,349,041	1	34,000,564	1	33,502,630	2
<b>Total</b>	<b>2,334,401,556</b>	<b>100</b>	<b>2,334,401,556</b>	<b>100</b>	<b>2,170,611,411</b>	<b>100</b>

**Reallocation of commercial LEUs in industry. The consolidation does not impact strongly the breakdown of turnover.**

# Calculation of other variables

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- ◆ **For non additives variables : the amount of consolidation of the turnover is applied**
- ◆ **For additive variables : e.g. employment**  
**Sum of the employment of the LEU in the perimeter of the ENT**

# Conclusion

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- ◆ **Top-down approach to delineate the ENT**
- ◆ **Bottom-up approach to estimate the characteristics of the ENT**
- ◆ **Pro : data at ENT level without growth of the statistical burden.**
- ◆ **Con : still 2 types of units in the SBR : LEU (reporting unit) and ENT (dissemination unit).**

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# Thank you for your attention

## Any questions ?



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