COHERENCE

The System of National Accounts (SNA) consists of a coherent, consistent and integrated set of macroeconomic accounts, balance sheets and tables based on a set of internationally agreed concepts, definitions, classifications and accounting rules

Coherence

- **What does it mean?**
- **Where is it relevant?**
- **Coherence in statistics of Europe and of Germany (some examples)**
- **The way ahead**

Coherence – What does it mean?

Trial of a definition

„Every element of a system fits together in a logical and meaningful way with all other parts"

or

„Coherence is defined as how well sets of statistics can be used together" (Eurostat pattern for Quality reports)"

Coherence

Related terms – **with different contents**

- ■ **Consistency (more formally)**
  e.g. of National Accounts
- ■ **Identity (some ideal form of coherence)**
- ■ **Similiarity**

Coherence – Where is it relevant?

- **Production of Statistics**
- **Publication, presentation and Communication**
- **Definitions, Concepts (as precondition)**

Aspects of Coherence in Statistics

Results of different statistics on the same subject or characteristic should be coherent. Differences in principle should be explained (e.g. thresholds).

Coherence of time series

Coherence of regional results

European Code of Practice

Principle 14: Coherence and Comparability – *European Statistics should be consistent internally, over time and comparable between regions and countries; it should be possible to combine and make joint use of related data from different sources.*

Indicators

- Statistics are internally coherent and consistent (e.g. arithmetic and accounting identities observed)
- Statistics are coherent or reconcilable over a reasonable period of time.
- Statistics are compiled on the basis of common standards with respect to scope, definitions, units and classifications in the different surveys and sources.
- Statistics from the different surveys and sources are compared and reconciled.
- Cross-national comparability of the data is ensured through periodical exchanges between the European Statistical System and other statistical systems; methodological studies are carried out in close co-operation between the Member States and Eurostat

Actual State of Coherence in Europe and in Germany (some examples)

- **Different turnover data from different sources**
- **Different employment data from different sources**
- **External Trade Statistics: Mirror differences**

Table 1

Industry	Enterprise Register 31.12.2004[1] Reference Time 2002	National Accounts data 08/2005 [2] Reference Time 2002	Difference	
	turnover	output	turnover/output	
	Mill. €			Output as % of turnover
C Mining and Quarrying	24.125	12.030	12.095	49,9
D Manufacturing	1.404.401	1.273.030	131.371	90,6
E electricity, gas and water supply	147.232	75.140	72.092	51,0
F Construction	173.286	199.370	-26.084	115,1
G Trade etc.	1.253.356	340.410	912.946	27,2
H hotels and restaurants	55.292	63.180	-7.888	114,3
I Transport, storage and communication	262.957	248.810	14.147	94,6
J Financial intermediation	37.859	196.090	-158.231	517,9
K Real estate, renting and business activities	453.617	653.680	-200.063	144,1
M Education	6.670	109.800	-103.130	1646,2
N Health and social work	33.710	196.830	-163.120	583,9
O Other community, social and and personal service activities	88.125	148.620	-60.495	168,9
Total	3.940.630	3.516.990	423.640	89,2

1) source: WiSta 9/2005 Strukturdaten aus dem Unternehmensregister und Aspekte der Unternehmensdemografie

2) source: Fachserie 18 Reihe 1.4 Inlandsproduktsberechnung - Detaillierte Jahresergebnisse Stand August 2005

Statistisches Bundesamt

Employment data
reference time: December 2002

Industry	Enterprise-register	Employment-statistics	Difference		NA-Results	Difference	
	Employed persons (paying to social security funds)				Employed persons		
	1000 persons			%	1000 persons		%
AB Acriculture, forestry and fishing	-	291			341	51	17,4
C Mining and Quarrying	93	121	-28	-23	98	-23	-19,4
D Manufacturing	6.520	7.083	-563	-8	7.113	30	0,4
E electricity, gas and water supply	264	257	7	3	289	32	12,4
F Construction	1.495	1.760	-265	-15	1.809	49	2,8
G Trade etc.	3.898	4.162	-264	-6	4.242	80	1,9
H hotels and restaurants	725	749	-24	-3	862	113	15,1
I Transport, storage and communication	1.365	1.506	-141	-9	1.542	36	2,4
J Financial intermediation	1.033	1.080	-47	-4	1.081	1	0,1
K Real estate, renting and business activities	2.840	3.126	-286	-9	3.201	75	2,4
L Public administration etc.	0	1.722			1.331	-391	-22,7
M Education	963	1.080	-117	-11	1.387	307	28,4
N Health and social work	2.999	3.114	-115	-4	3.094	-19	-0,6
O Other community, social and and personal service activities	1.235	1.246	-11	-1	1.204	-42	-3,4
P Private households with employed persons	-	35			172	137	392,4
Total		27.332			27.766	434	1,6
Total without A, B, L, P	23.430	25.284	-1.854	-7	25.922	637	2,5

Employment data
reference time: December 2002

Industry		Subject matter statistics	NA-Results	Difference	
		Employed persons			
		1000 persons			%
AB	Acriculture, forestry and fishing	-	864		
C	Mining and Quarrying	99	101	2	2
D	Manufacturing	6.678	7.888	1.210	18
E	electricity, gas and water supply	252	296	44	18
F	Construction	1.824	2.389	565	31
G	Trade etc.	4.183	6.029	1.845	44
H	hotels and restaurants	843	1.640	797	95
I	Transport, storage and communication	1.881	2.130	249	13
J	Financial intermediation	983	1.280	297	30
K	Real estate, renting and business activities	3.885	4.818	933	24
L	Public administration etc.	-	2.800		
M	Education	-	2.257		
N	Health and social work	-	3.894		
O	Other community, social and and personal service activities	-	2.010		
P	Private households with employed persons	-	650		
Total			39.046		
Total	without A, B, L, P		34.732		

Differences of time series
in trade with vehicles (growth rates)

Reference month	Published in	April	May	June	July	Aug. (2004)	Sept	Oct	Nov	Dec
January 2004		+ 0,1	- 0,5	- 0,4	- 0,4	- 4,8	- 4,7	- 4,5	- 4,6	- 2,6
January 2005		- 0,2	- 0,4	- 0,6	- 0,4	+ 0,2	0,0	+ 0,1	+ 0,1	- 0,2
January 2006										

Differences between the national import values and the mirror values of the respective exports of all other EU-countries

Year	Difference	
	in Mrd. EURO	in % [1]
2000	-22,2	-7,5
2001	-26,0	-8,7
2002	-28,2	-9,8
2003	-17,8	-0,1

1) in relation to the national import value

Differences between the national export values and the mirror values of the respective imports of all other EU-countries

Year	Difference	
	in Mrd. EURO	in % [1]
2000	1,6	0,5
2001	8,2	2,4
2002	2,8	0,8
2003	9,8	2,7

2) in relation to the national export value

What are asymmetries in the external trade?

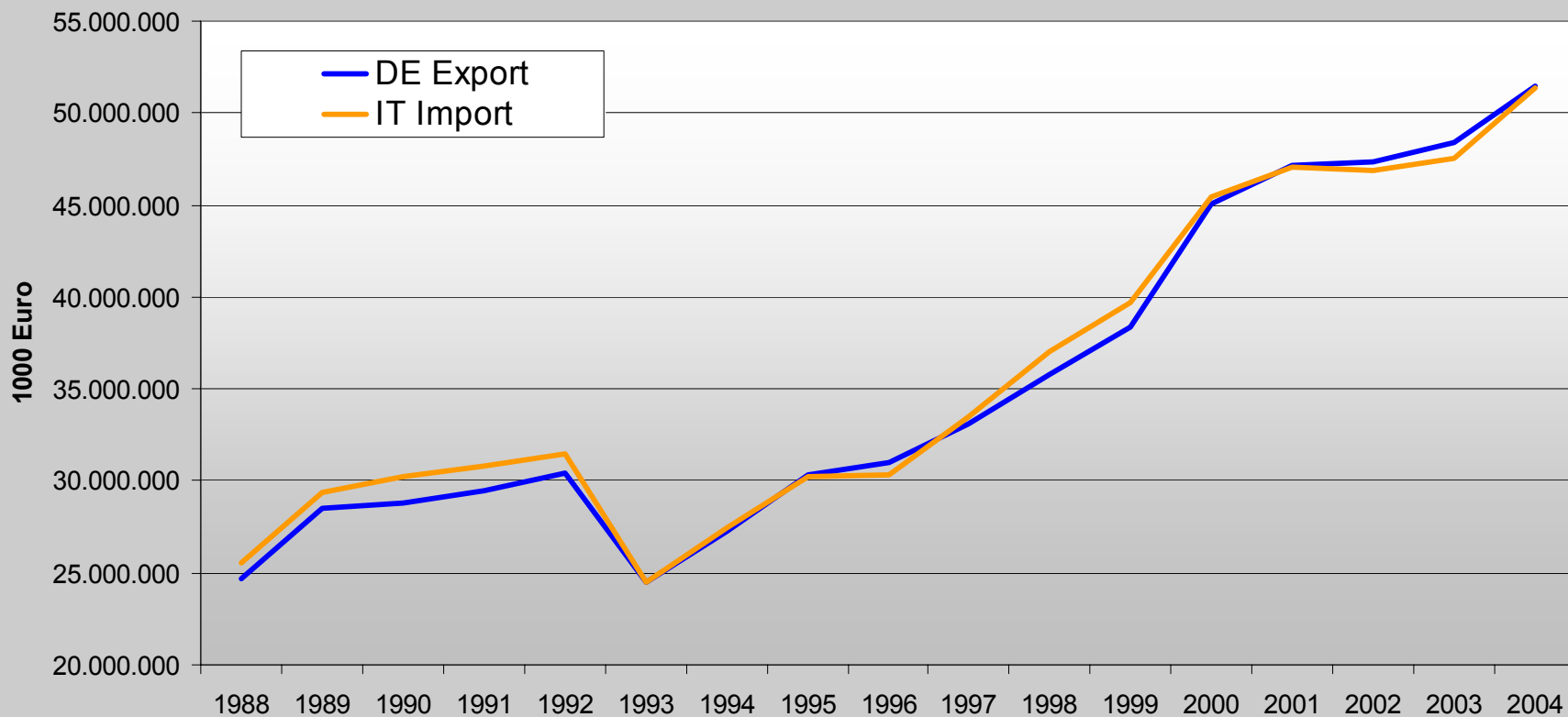Asymmetries oder mirror differences are:

Differences between the result of the external trade statistic of one country compared with the respective results of the trading partners

An example (Results from 2004):

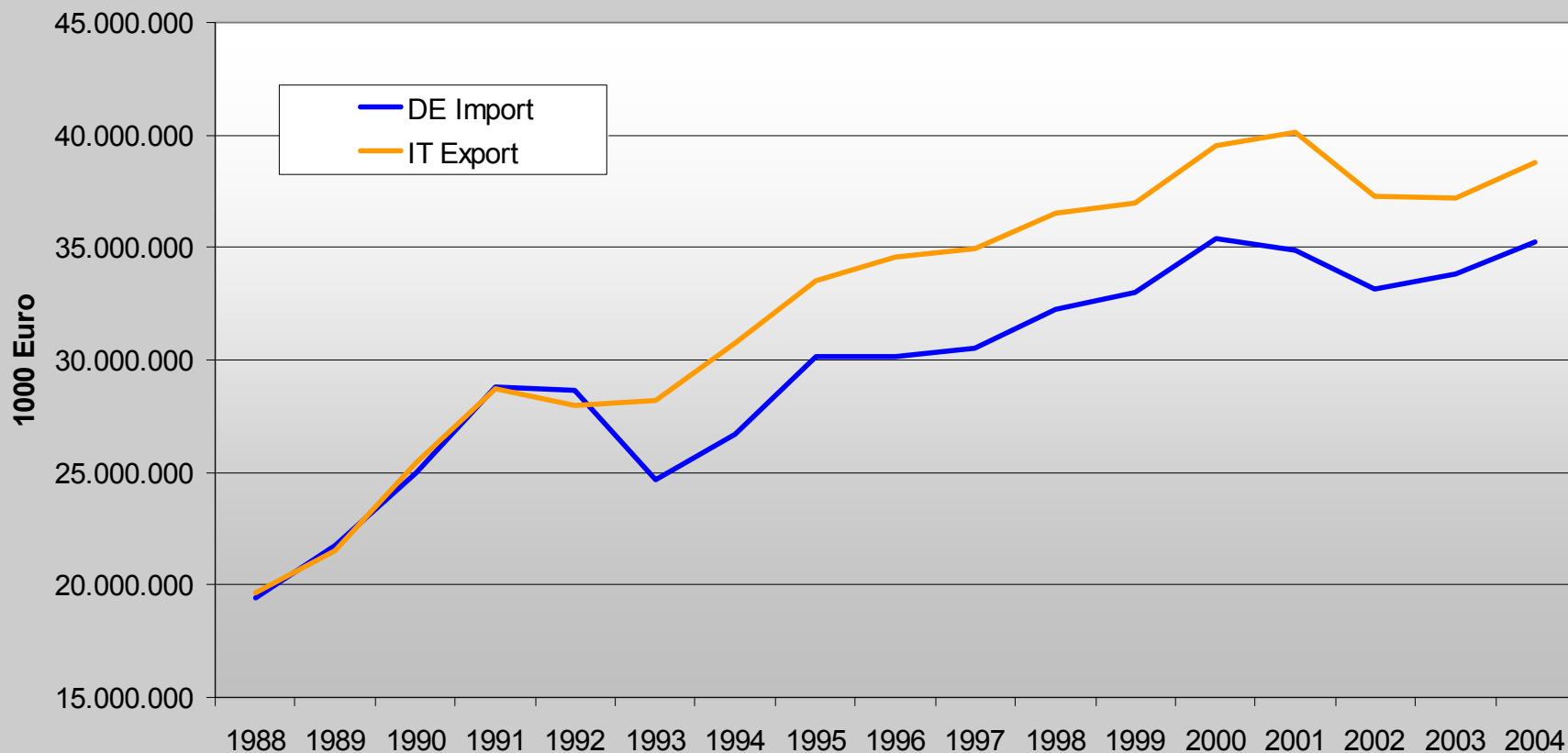|	Exports to UK	Imports from UK
german results	60 Mrd. Euro	35 Mrd. Euro
mirror results UK	52 Mrd. Euro	32 Mrd. Euro
differences (german viewpoint)	13%	9%

Mirror comparison with Italy

german dispatches - italian arrivals 1988 - 2004

Mirror comparison with Italy

german arrivals - italian dispatches 1988-2004

Coherence:
The way ahead

- **Becoming better aware of deficiencies as first step**
- **Investigation of the reasons**
- **Comparing individual data**
- **Consequently improving conditions for coherence is a leadership task**