

Methods and Sources: Methodological Notes

18 October 2017

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Technology Balance of Payments

The technology balance of payments (BP_Tec) aggregates some balance-of-payments items involving disembodied technology (i.e. technology not embodied in physical goods). The data are published yearly on the Bank of Italy website, in Excel format. The international classification defined by the OECD comprises:

Trade in technics, the core of the BP_Tec, which embraces both sales of intangibles like patents, inventions and know-how and licences to use them.

Transactions involving trademarks, designs, patterns that do not refer directly to technological knowledge but often imply some transfer of such knowledge or know-how.

Services with a technical content which, while not constituting an actual transfer, do increase a firm's technological potential through the acquisition of technical skills; recently "information services," originally not counted, have been included in this aggregate (see OECD, 2005, p. 161).

Industrial R&D performed abroad/financed from abroad.

The OECD classification has not changed, but with the sixth edition of the IMF Balance of Payments Manual the substance of some of the items used to calculate the technology balance has been modified.

Figures 1 and 2 give the definitions drawn from the fifth and sixth editions respectively. The main changes concern intangible assets. Under the old standards, the item "intangible assets" (which was classed under the capital account) included – with no possibility of distinction between the items – both sales of patents and licences and other transactions (whose amounts were increasing over time) that were not strictly classifiable under BP_Tec, such as sales of CO₂ and other emission rights, TV and movie rights, and transfers of professional athletes from team to team. Simply using the item "sales of intangible assets" therefore overestimated BP_Tec flows.

In the new Manual (BPM6), sales of patents and licences deriving from research and development are kept distinct from other trade in "intangible assets" and no longer entered in the capital account but under services, in the item "Research and development services." This results in strict adherence to the OECD classification. It is worth noting, however, that under the new definition there may be an underestimate (but presumably not a large one) of BP_Tec flows, because intangibles (now excluded) still comprise a component (the sale of licences and similar rights, royalties and other licences not deriving from R&D) that, strictly speaking, should be included in BP_Tec.

Finally, with the transition to BPM6, the OECD taxonomy no longer separates "trade in technics" from "transactions involving trademarks, design, patterns."

As a result of these revisions, compared to the data reconstruction carried out in Occasional Paper No. 207 (2013), gross flows of BP_Tec averaged about 10 per cent lower in the decade 2002-2012 (Table 1), with a downward spike in 2012 due to the exclusion of sales of emission rights (CO₂), which were particularly large in that year; the overall balance of BP_Tec tends to improve by comparison with previous estimates, except for 2012.

Figure 1 – Reconciliation between technology balance and balance of payments (BPM5)

BP_Tec aggregates (OECD classification)	BP item code	BP item description	BP aggregate in which it is classed (IMF BPM5)
<i>CAPITAL ACCOUNT</i>			
1) Trade in techniques	480	Intangible assets (includes sales of licences and similar rights, royalties and other licences)	Intangible assets
<i>CURRENT ACCOUNT - SERVICES</i>			
1) Trade in techniques	892	Use of other intangible assets (including patents)	Royalties and licences
2) Transactions involving trademarks, designs, patterns	891	Use of licences and similar rights (including brands)	Royalties and licences
3) Technology-related services	263	Computer services	Information technology services
	280	Architectural, engineering and other technical services	Other business services
4) R&D performed abroad/financed from abroad	279	Research and development services	Other business services

Figure 2 – Reconciliation between technology balance and balance of payments (BPM6)

BP_Tec aggregates (OECD classification)	BP item code	BP item description	BP aggregate in which it is classed (IMF BPM6)
<i>CURRENT ACCOUNT - SERVICES</i>			
1) Trade in techniques	SH2	Licences to use the products of research and development	Charges for the use of intellectual property
2) Transactions involving trademarks, designs, patterns	SH1	Trade in brands, patterns and industrial designs	
3) Technology-related services	SI2	Computer services	Telecommunications, computer and information services
	SJ31	Architectural, engineering and other technical services	Other business services (of which <i>technical, trade-related and other business services</i>)
4) R&D performed abroad/financed from abroad	SJ1	Research and development services	Other business services (of which <i>research and development services</i>)

Table 1 – Technology balance of payments by item and comparison with BPM5

(millions of euros)

Year	Charges for use of intellectual property (SH)	Technology-related services (SI2+SJ31)	Research and Development (SJ1)	Total BP_TEC BPM6	Memo: Total BP_TEC BPM5	Difference (BPM6 - BPM5)
EXPORTS (CREDITS)						
2002	2,040	2,282	1,746	6,068	6,466	-398
2003	2,163	2,244	1,523	5,930	6,383	-453
2004	2,321	2,648	1,691	6,659	7,044	-385
2005	2,610	3,048	1,549	7,207	7,665	-458
2006	2,934	3,425	1,741	8,100	8,551	-451
2007	3,101	3,621	1,841	8,563	9,035	-473
2008	2,720	3,122	1,789	7,632	8,214	-583
2009	2,316	2,332	1,721	6,369	7,229	-859
2010	2,752	3,331	1,677	7,760	7,901	-141
2011	2,901	4,018	1,841	8,760	10,063	-1,302
2012	3,190	4,863	2,719	10,773	14,449	-3,676
2013	2,965	5,052	3,165	11,182		
IMPORTS (DEBITS)						
2002	3,438	3,189	759	7,386	7,971	-586
2003	3,832	2,666	890	7,388	7,848	-460
2004	3,990	2,989	1,139	8,118	8,495	-377
2005	4,452	3,713	1,058	9,223	9,881	-658
2006	5,196	4,334	1,234	10,765	11,601	-836
2007	5,815	4,850	1,381	12,046	13,029	-983
2008	4,951	4,660	1,046	10,658	12,449	-1,791
2009	4,388	3,944	1,262	9,594	11,120	-1,526
2010	4,931	4,289	1,249	10,469	11,914	-1,445
2011	4,753	4,765	1,417	10,935	13,022	-2,086
2012	4,136	4,571	1,261	9,968	13,095	-3,127
2013	3,852	4,893	1,435	10,180		
BALANCE						
2002	-1,399	-907	987	-1,318	-1,505	188
2003	-1,669	-422	634	-1,458	-1,465	6
2004	-1,669	-341	551	-1,459	-1,451	-8
2005	-1,842	-666	492	-2,015	-2,215	200
2006	-2,263	-909	507	-2,665	-3,049	384
2007	-2,714	-1,229	459	-3,484	-3,994	510
2008	-2,231	-1,538	743	-3,026	-4,234	1,208
2009	-2,072	-1,612	459	-3,225	-3,891	666
2010	-2,179	-958	428	-2,709	-4,013	1,304
2011	-1,852	-747	424	-2,175	-2,959	784
2012	-946	293	1,458	805	1,354	-548
2013	-887	159	1,730	1,002		