

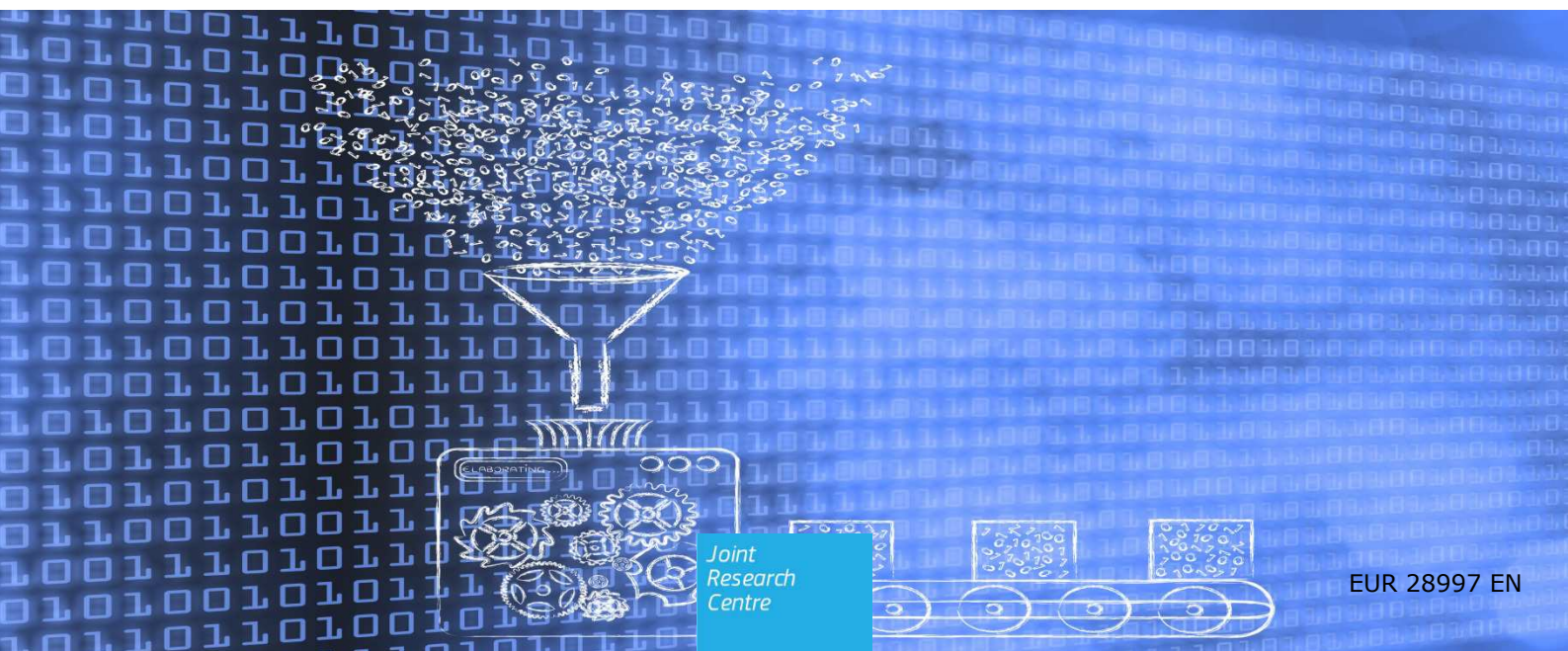


## JRC TECHNICAL REPORTS

# PREDICT 2017 Country Factsheets: EU Member States – Benchmarking with Non-EU Countries

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2017



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JRC109582

EUR 28997 EN

PDF ISBN 978-92-79-77243-6 ISSN 1831-9424 doi:10.2760/094005

Luxembourg: Publications Office of the European Union, 2017

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How to cite this report: Melisande Cardona, Giuditta de Prato, Montserrat Lopez Cobo, Riccardo Righi, Sofia Samoili, PREDICT 2017 Country Factsheets, EU Member States– Benchmarking with Non-EU Countries; JRC Technical Report EUR 28997 EN; Publications Office of the European Union, Luxembourg, 2017; ISBN 978-92-79-77243-6, doi:10.2760/094005, JRC109582

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## Foreword

### **PREDICT: Prospective Insights on R&D in ICT**

PREDICT produces statistics and analyses on ICT industries and their R&D in Europe since 2006. The project covers major world competitors including 40 advanced and emerging countries – the EU28 plus Norway, Russia and Switzerland in Europe, Canada, the United States and Brazil in the Americas, China, India, Japan, Korea and Taiwan in Asia, and Australia – as well as a growing array of indicators related to the ICT content of economic activities.

### **Rationale**

ICTs determine competitive power in the knowledge economy. The ICT sector alone originates almost one fourth of total Business expenditure in R&D (BERD) for the aggregate of the 40 economies under scrutiny in the project. It also has a huge enabling role for innovation in other technological domains, let aside the impact of ICT uptake in the organisation of businesses. This is reflected at the EU policy level, where the Digital Agenda for Europe in 2010 was identified as one of the seven pillars of the Europe 2020 Strategy for growth in the Union and the achievement of a [Digital Single Market](#) (DSM) is one of the 10 political priorities set by the Commission since 2015.

### **Statistics and indicators**

PREDICT provides indicators in a wide variety of topics, including value added, employment, labour productivity and BERD, distinguishing fine grain economic activities in ICT and media and content industries (up to 22 individual activities, 14 of which at the class level, i.e. at 4 digits in the ISIC classification) and at a higher level of aggregation for all the other industries in the economy. It also produces data on Government financing of R&D in ICTs, and total R&D expenditure at the country level. Now-casting of more relevant data in these domains is also being performed.

### **Team**

PREDICT is a collaboration between the JRC and the European Commission [Communications Networks, Content and Technology \(CNECT\) Directorate General](#). Since 2013 data collection and analysis has been carried out jointly by JRC and the Valencian Institute of Economic Research ([Instituto Valenciano de Investigaciones Económicas - Ivie](#)).

### **Abstract**

The PREDICT 2017 Factsheets present essential statistical data regarding the performance of the EU ICT sector. They provide figures and tables on general economic and industry trends and R&D performance. These Factsheets are the subject of three reports. This third report presents Factsheets on the EU in total and 12 non-EU countries: Norway, Switzerland, Australia, Brazil, Canada, China, India, Japan, Korea, Russia, Taiwan and the United States. The first report on 'Data in Current Prices' and the second report on 'Purchasing Power Standard' present sets of Factsheets with data on each EU Member State and compare it to the EU average.

## Reading Notes

The figures to the right of each Factsheet display the information presented in the statistical tables. The top figure gives a snapshot of country performance in ICT productivity and ICT R&D as compared to the EU. The other two figures give the development of the ICT Sector from 2006-2014 by subsector. The middle figure presents the number of persons employed. The bottom figure shows the ICT share within total business expenditure R&D. Together these 3 figures allow us to assess very rapidly:

- the ICT sector's profile in each country (2014 or when last available) as regards productivity and R&D intensity.
- the evolution of the ICT sector since 2006: i.e. whether the sector as a whole and also its subsectors have emerged or declined in terms of value added and R&D expenditure shares.

The statistical tables provide the full data on which these figures are based. They are divided into two main blocks:

- the first shows **Economic and Industry Trends**: Gross Value Added (GVA), Employment and Productivity.
- the second concentrates on **R&D performance** showing R&D expenditures in terms of both the actual spending and R&D intensity, calculated as the ratio of R&D spending to GVA.

Additionally, the horizontal reading of the tables conveys three further items of information:

- The time coverage (2006-2014) allows us to assess the progress of the variables during the pre and post-crisis years.
- The column headed 'Share' or 'Ratio' displays the relative performance of each variable (expressed as a proportion) as compared to the EU for the last available year.
- The double column headed '2014 vs 2006' offers indices comparing the 2014 performance of each variable with its initial level in 2006 (Index: 100) for each Member State and the EU.

## Methodological Notes

The Factsheets are based on the latest available official data, made available by EUROSTAT. Data sources and methods are fully described in [the metadata](#) of PREDICT 2017. The data is presented in Purchasing Power Standard (PPS) to allow comparability.

This report presents Purchasing Power Standard for the EU Member States. The PPS is an artificial currency unit. Theoretically, one PPS can buy the same amount of goods and services in each country. PPS are derived by dividing any economic aggregate of a country in national currency by its respective purchasing power parities. PPS is the technical term used by Eurostat for the common currency in which national accounts aggregates are expressed when adjusted for price level differences. (See EUROSTAT – [Glossary: Purchasing Power Standard \(PPS\)](#)).

To allow for comparability to other countries, this report uses the operational definition of the ICT sector. This definition distinguishes between ICT Manufacturing, Telecommunication and Computer Services, but does not include ICT Trade Services. More details on the different ICT sector definitions are available in the [metadata](#) of PREDICT.

# EUROPEAN UNION (EU)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share EU/EU 2014 <sup>1</sup>	EU2014vs EU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	12255	12983	13054	12295	12814	13189	13449	13561	13987	100.0%	114	114
ICT sector	496	526	524	490	500	516	523	532	546	100.0%	110	110
Manufacturing	72	75	68	53	59	56	48	52	52	100.0%	72	72
Telecommunications	201	206	204	195	187	183	179	171	185	100.0%	92	92
Computer Services	222	245	252	243	255	277	296	309	309	100.0%	139	139
ICT sector as a % of Total	4.0%	4.0%	4.0%	4.0%	3.9%	3.9%	3.9%	3.9%	3.9%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share EU/EU 2014 <sup>1</sup>	EU2014vs EU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	224533	228829	231178	227195	225685	225976	225112	224374	226604	100.0%	101	101
ICT sector	5280	5418	5502	5415	5359	5489	5564	5637	5685	100.0%	108	108
Manufacturing	928	946	922	784	743	739	714	675	664	100.0%	72	72
Telecommunications	1222	1254	1237	1188	1126	1108	1100	1084	1134	100.0%	93	93
Computer Services	3132	3221	3346	3446	3492	3644	3752	3880	3888	100.0%	124	124
ICT sector as a % of Total	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.5%	2.5%	2.5%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio EU/EU 2014 <sup>2</sup>	EU2014vs EU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	55	57	56	54	57	58	60	60	62	(1.00)	113	113
ICT sector	94	97	95	91	93	94	94	94	96	(1.00)	102	102
Manufacturing	78	80	74	67	79	76	68	76	79	(1.00)	101	101
Telecommunications	165	164	165	164	166	165	162	158	163	(1.00)	99	99
Computer Services	71	76	75	70	73	76	79	80	79	(1.00)	112	112

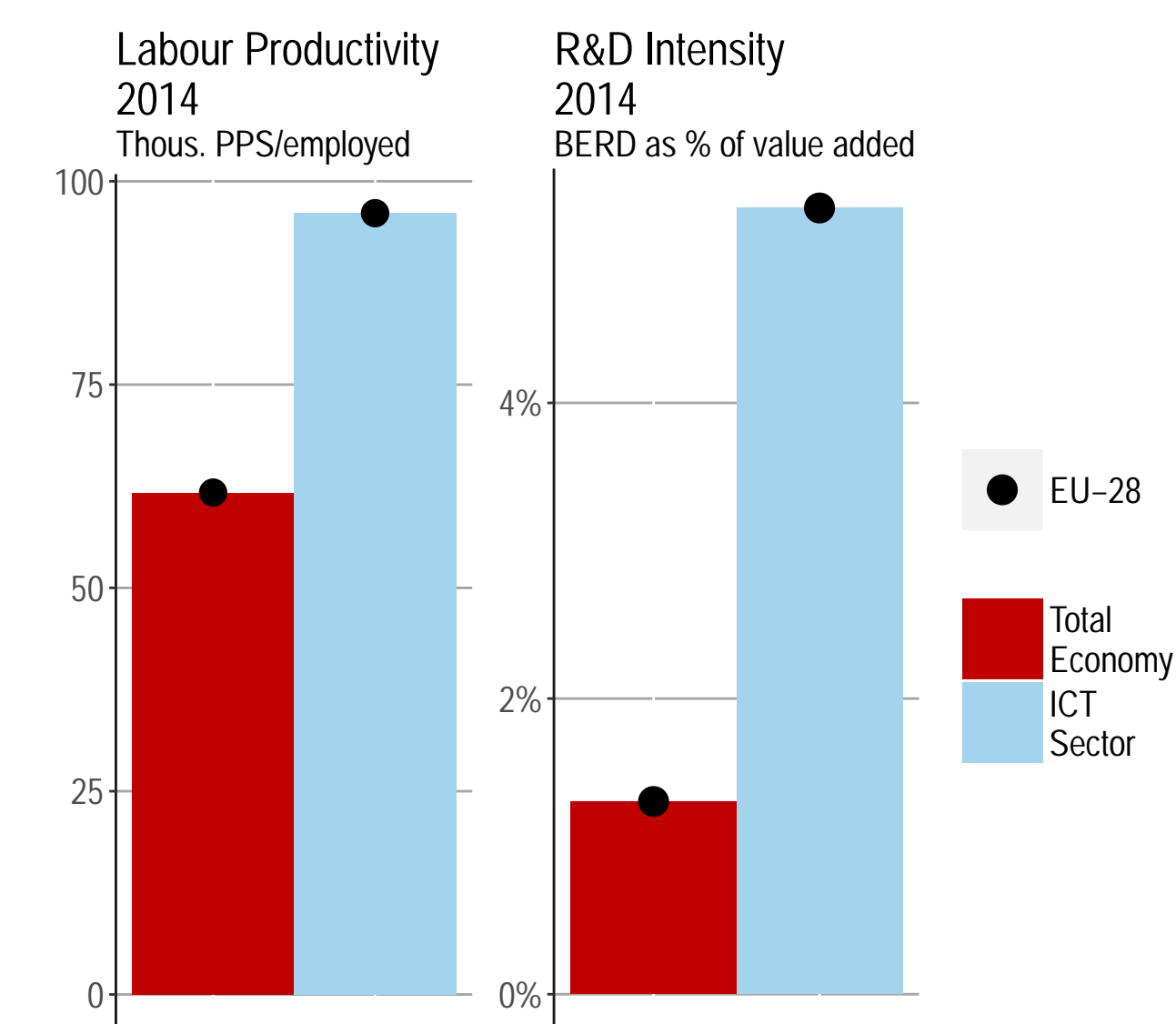
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

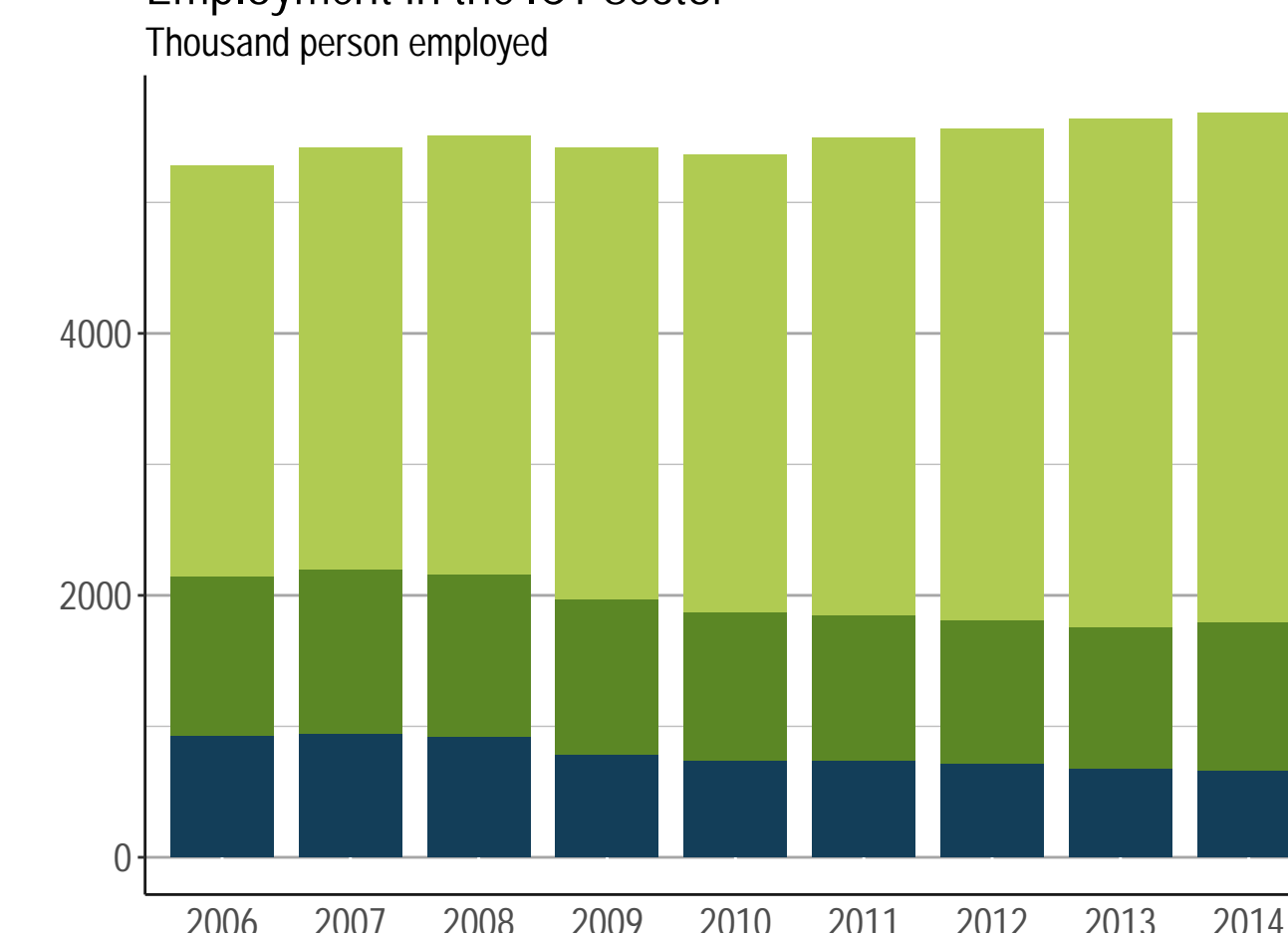
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share EU/EU 2014 <sup>1</sup>	EU2014vs EU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	137165	146043	151703	146642	152764	164175	171736	174242	182452	100.0%	133	133
ICT sector	25572	26060	26461	24772	25483	27148	27896	28153	29053	100.0%	114	114
Manufacturing	13743	13194	13173	11211	11300	11863	11830	11428	11407	100.0%	83	83
Telecommunications	3888	4298	4188	4207	4044	3819	3791	3197	3336	100.0%	86	86
Computer Services	7943	8571	9103	9356	10142	11470	12279	13533	14315	100.0%	180	180
ICT sector as a % of Total	18.6%	17.8%	17.4%	16.9%	16.7%	16.5%	16.2%	16.2%	15.9%			

R&D Intensity (BERD as a % of value added)

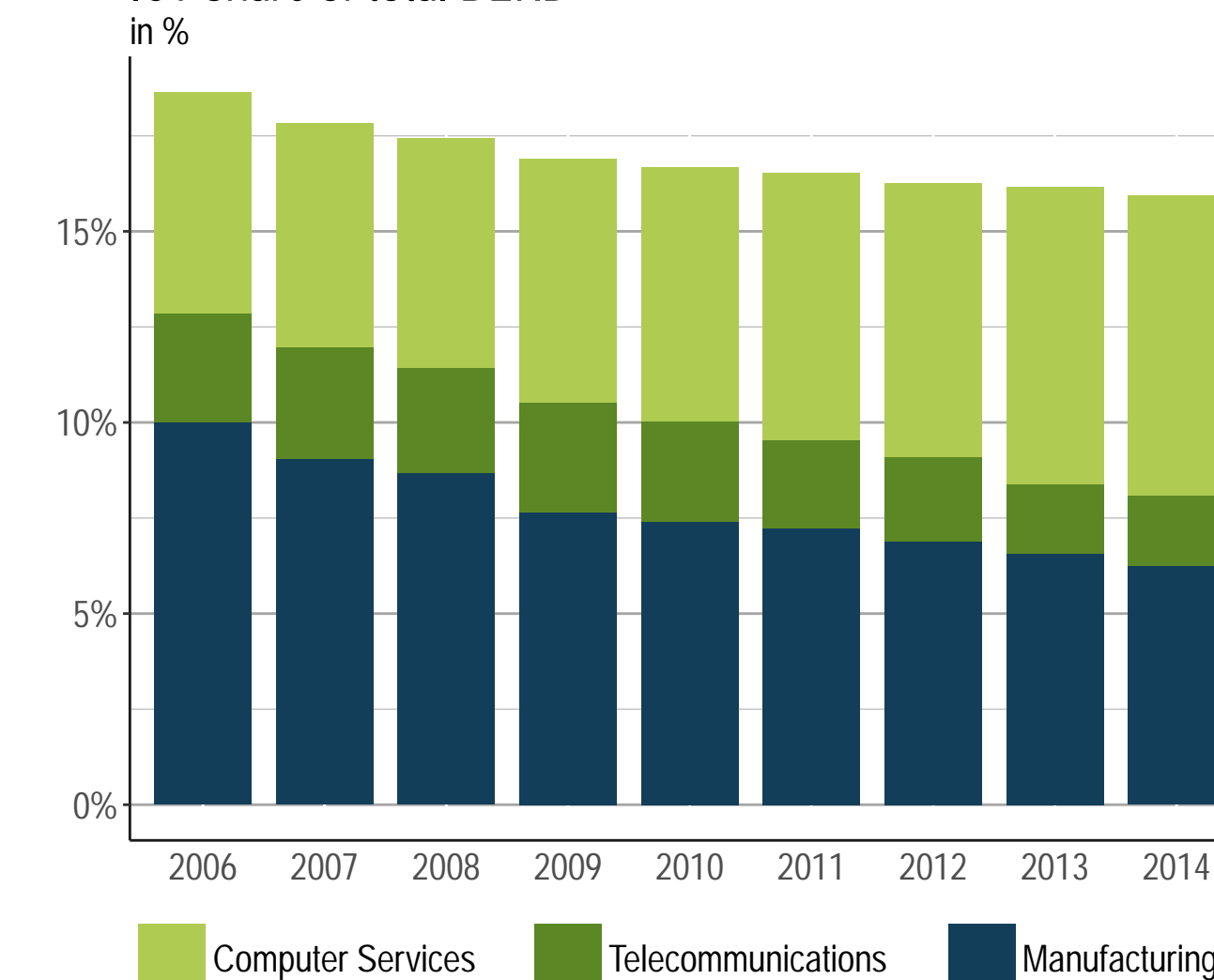
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio EU/EU 2014 <sup>2</sup>	EU2014vs EU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	(1.00)	117	117
ICT sector	5.2	5.0	5.0	5.1	5.1	5.3	5.3	5.3	5.3	(1.00)	103	103
Manufacturing	19.0	17.5	19.4	21.2	19.2	21.2	24.5	22.2	21.8	(1.00)	115	115
Telecommunications	1.9	2.1	2.0	2.2	2.2	2.1	2.1	1.9	1.8	(1.00)	93	93
Computer Services	3.6	3.5	3.6	3.9	4.0	4.1	4.2	4.4	4.6	(1.00)	130	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# NORWAY (NO)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share NO/EU 2014 <sup>1</sup>	NO2014vs NO2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	207	217	233	204	219	234	248	250	250	1.8%	120	114
ICT sector	5	6	6	6	6	6	7	7	7	1.3%	132	110
Manufacturing	0	0	0	0	0	0	0	0	0	0.5%	79	72
Telecommunications	2	2	2	2	2	2	2	2	2	1.1%	98	92
Computer Services	3	3	4	4	4	4	4	5	5	1.5%	165	139
ICT sector as a % of Total	2.6%	2.7%	2.5%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share NO/EU 2014 <sup>1</sup>	NO2014vs NO2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	2434	2535	2617	2605	2591	2630	2684	2713	2746	1.2%	113	101
ICT sector	59	61	63	64	65	66	67	68	70	1.2%	119	108
Manufacturing	6	5	5	5	5	4	4	3	3	0.5%	54	72
Telecommunications	12	13	13	13	13	13	13	13	13	1.1%	108	93
Computer Services	41	43	45	46	47	48	50	51	54	1.4%	132	124
ICT sector as a % of Total	2.4%	2.4%	2.4%	2.4%	2.5%	2.5%	2.5%	2.5%	2.6%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio NO/EU 2014 <sup>2</sup>	NO2014vs NO2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	85	86	89	78	85	89	92	92	91	(1.48)	107	113
ICT sector	91	97	92	91	97	99	103	104	101	(1.05)	111	102
Manufacturing	59	91	82	68	67	69	77	78	86	(1.09)	145	101
Telecommunications	182	160	134	147	155	153	170	161	164	(1.00)	90	99
Computer Services	69	79	81	78	84	87	87	91	87	(1.09)	126	112

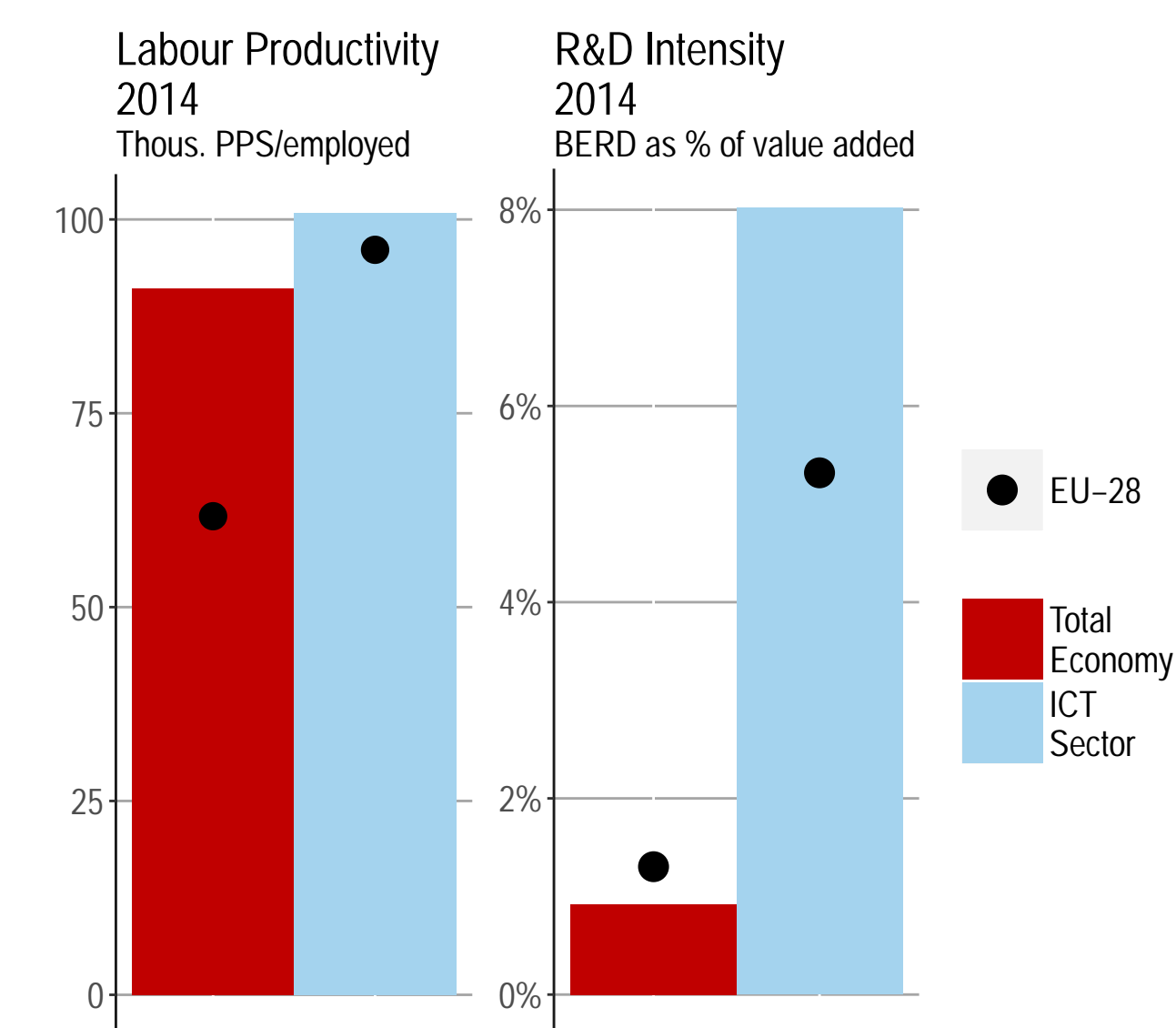
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

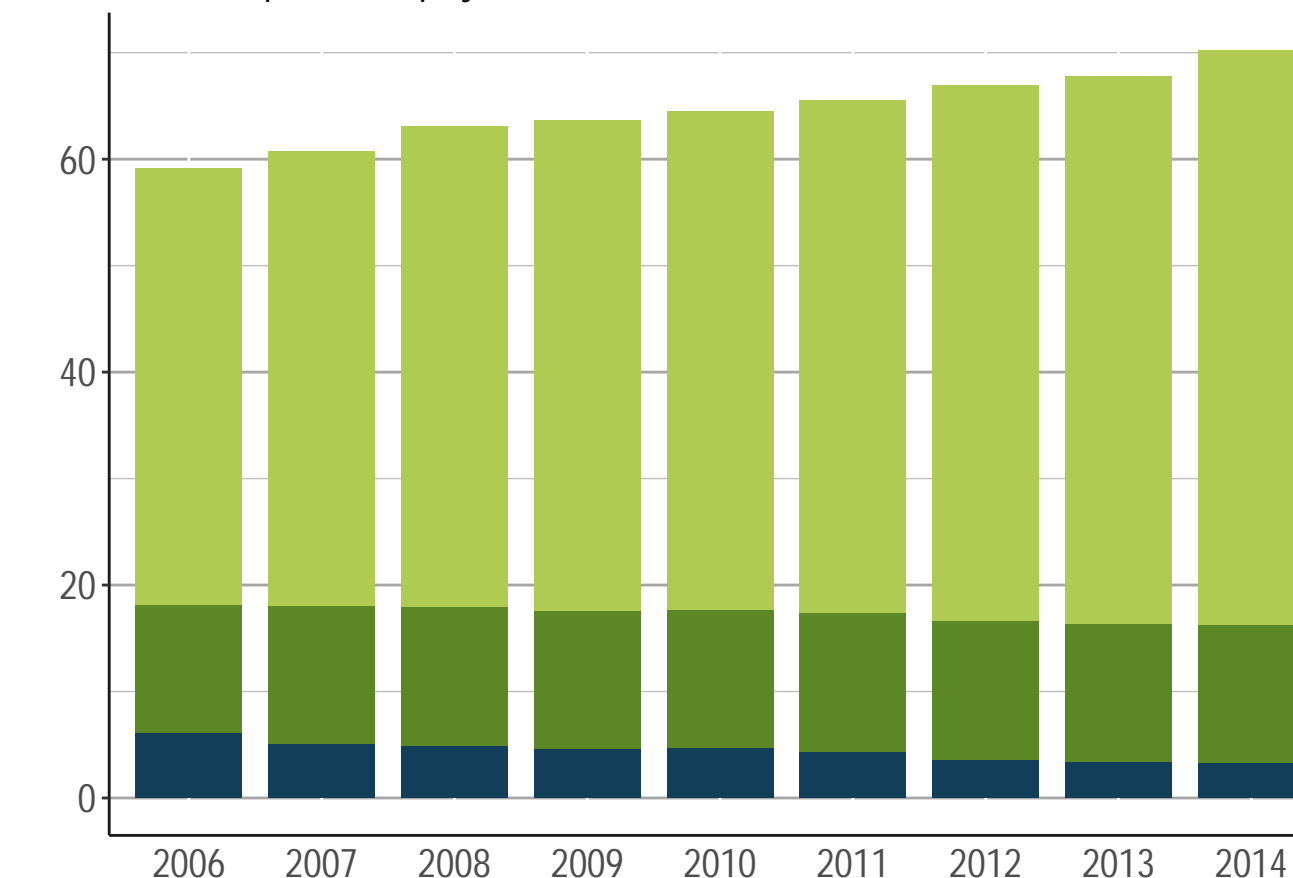
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share NO/EU 2014 <sup>1</sup>	NO2014vs NO2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1614	1786	1923	1814	1855	1991	2103	2172	2304	1.3%	143	133
ICT sector	405	435	462	433	449	472	509	532	568	2.0%	140	114
Manufacturing	98	94	100	90	62	64	58	51	57	0.5%	59	83
Telecommunications	67	54	58	64	68	60	60	58	65	2.0%	97	86
Computer Services	241	287	304	280	318	349	391	422	445	3.1%	185	180
ICT sector as a % of Total	25.1%	24.4%	24.0%	23.9%	24.2%	23.7%	24.2%	24.5%	24.6%			

R&D Intensity (BERD as a % of value added)

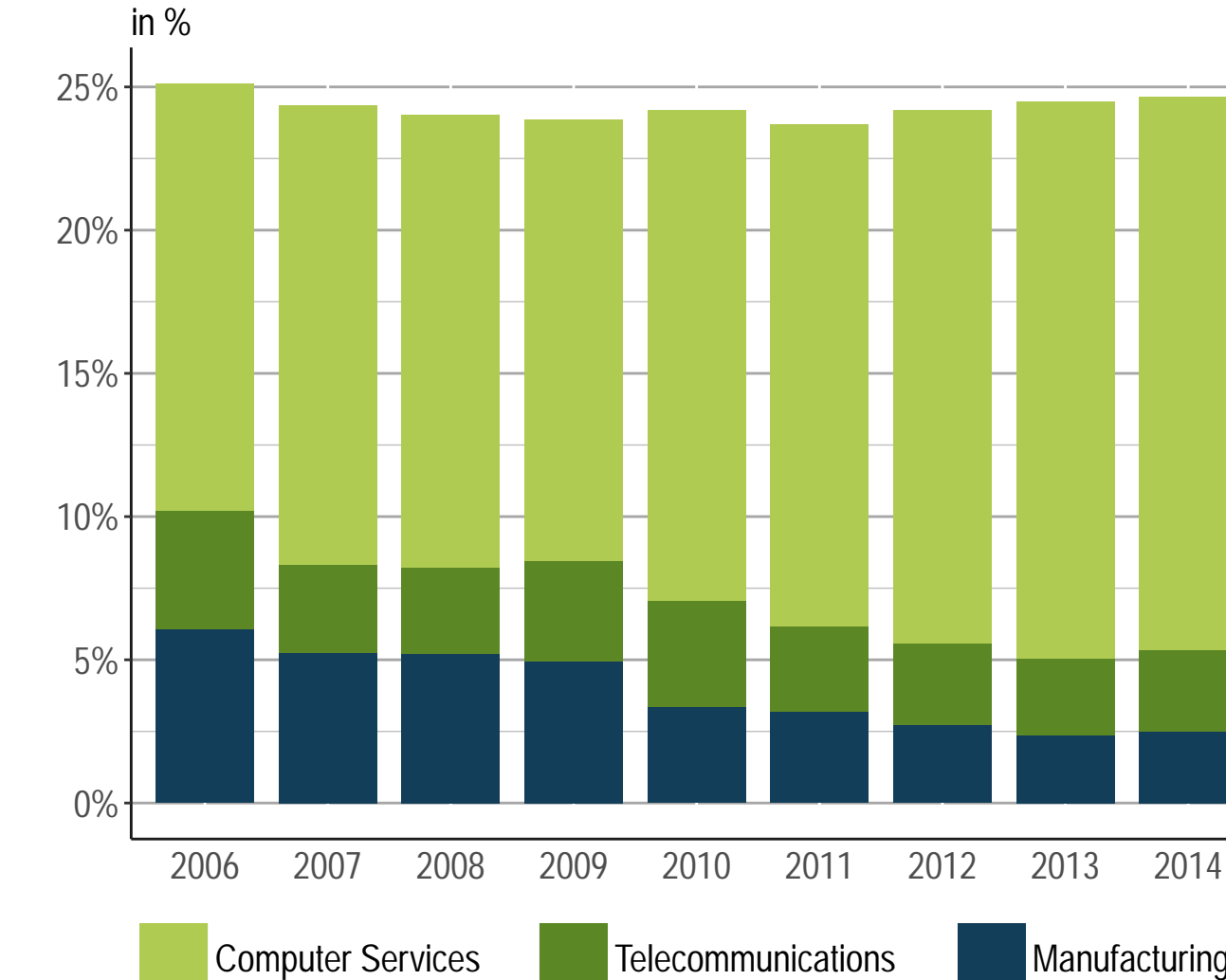
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio NO/EU 2014 <sup>2</sup>	NO2014vs NO2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.9	(0.71)	118	117
ICT sector	7.6	7.4	8.0	7.5	7.2	7.3	7.4	7.6	8.0	(1.51)	106	103
Manufacturing	27.0	20.4	25.0	28.7	19.7	21.0	20.8	19.3	20.2	(0.93)	75	115
Telecommunications	3.1	2.6	3.3	3.3	3.4	3.0	2.7	2.8	3.1	(1.70)	99	93
Computer Services	8.5	8.5	8.3	7.8	8.1	8.3	8.9	9.0	9.5	(2.06)	112	130



Employment in the ICT sector  
Thousand person employed



ICT share of total BERD  
in %



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# SWITZERLAND (CH)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CH/EU 2014 <sup>1</sup>	CH2014vs CH2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	264	290	301	291	306	326	346	354	364	2.6%	138	114
ICT sector	11	12	13	12	13	13	14	14	15	2.7%	132	110
Manufacturing	3	3	3	3	3	3	3	3	3	4.8%	92	72
Telecommunications	3	4	4	4	4	4	4	4	4	2.4%	130	92
Computer Services	5	5	6	6	6	7	7	8	8	2.5%	156	139
ICT sector as a % of Total	4.2%	4.1%	4.2%	4.2%	4.1%	4.1%	4.1%	4.1%	4.0%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CH/EU 2014 <sup>1</sup>	CH2014vs CH2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	4299	4410	4516	4540	4555	4662	4732	4800	4887	2.2%	114	101
ICT sector	123	126	129	133	133	138	140	146	151	2.6%	123	108
Manufacturing	30	30	31	33	31	30	29	30	29	4.4%	98	72
Telecommunications	25	25	24	23	23	26	25	27	28	2.5%	110	93
Computer Services	68	71	74	76	79	83	85	89	93	2.4%	138	124
ICT sector as a % of Total	2.9%	2.8%	2.9%	2.9%	2.9%	3.0%	3.0%	3.0%	3.1%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio CH/EU 2014 <sup>2</sup>	CH2014vs CH2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	61	66	67	64	67	70	73	74	74	(1.21)	121	113
ICT sector	91	94	97	91	95	97	100	99	98	(1.02)	108	102
Manufacturing	92	97	105	83	87	94	88	88	86	(1.09)	94	101
Telecommunications	133	145	156	154	166	159	167	159	156	(0.96)	118	99
Computer Services	74	75	76	76	78	79	85	84	84	(1.05)	113	112

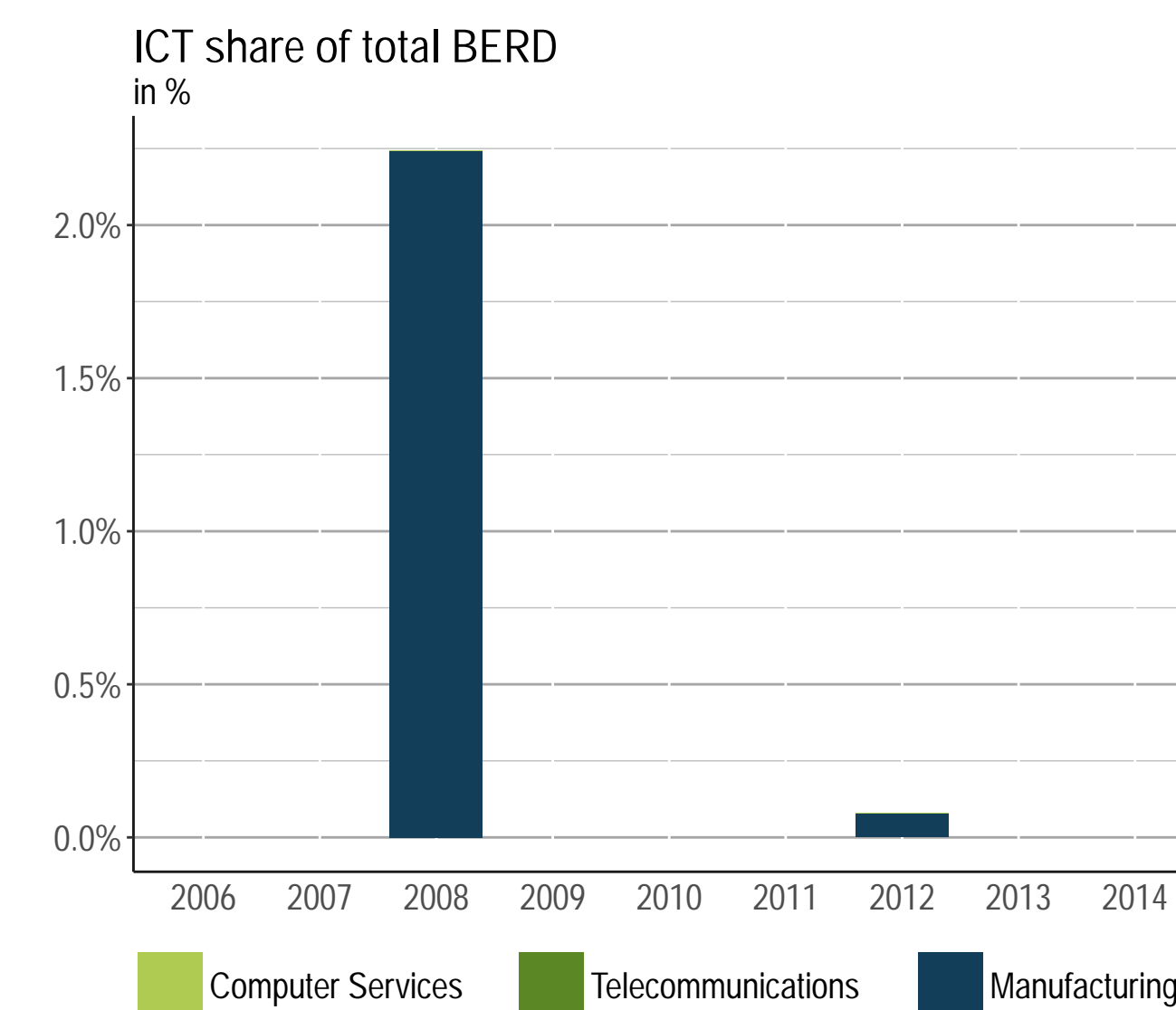
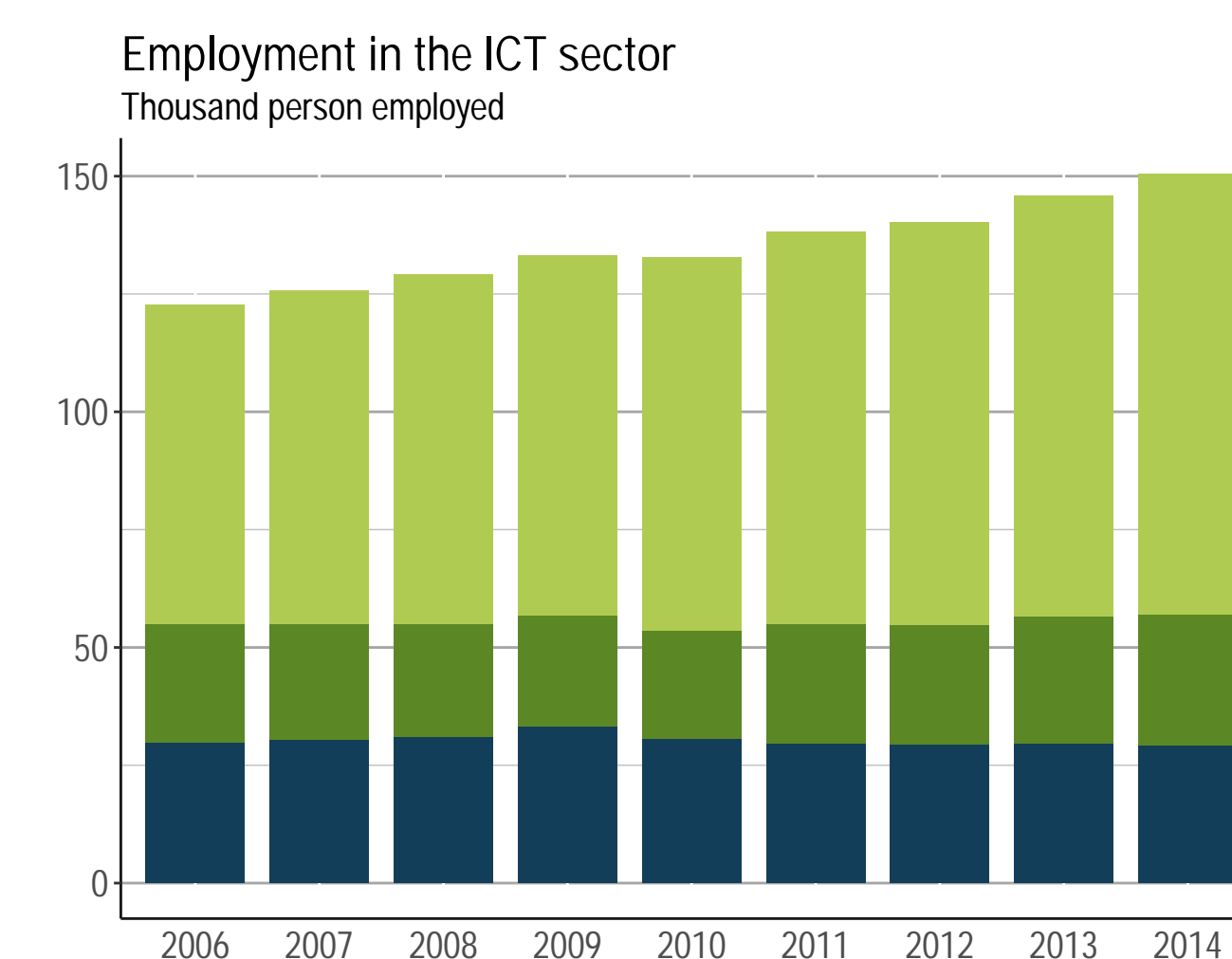
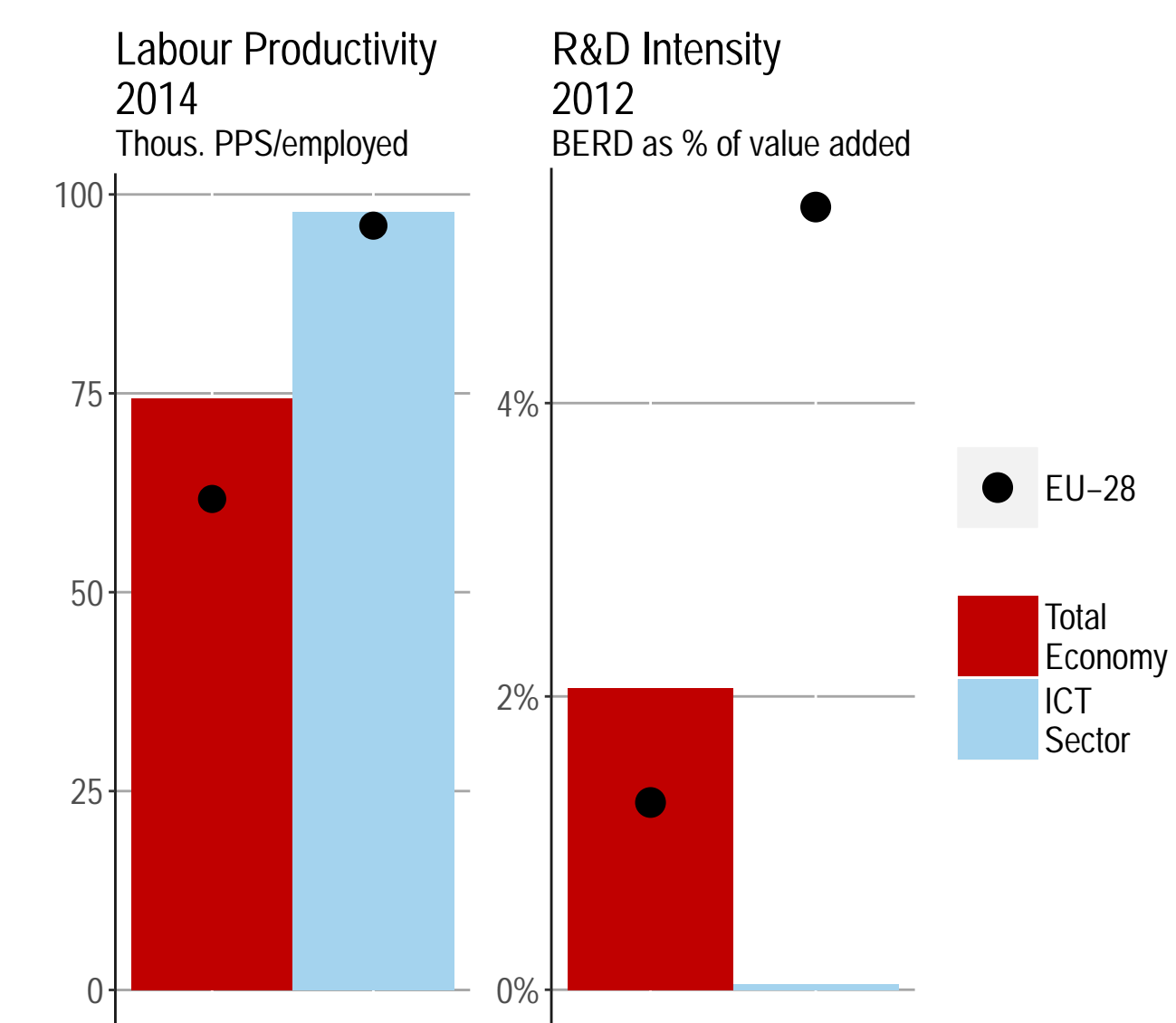
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CH/EU 2014 <sup>1</sup>	CH2014vs CH2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	-	-	6043	-	-	-	7109	-	-	-	-	133
ICT sector	-	-	136	-	-	-	6	-	-	-	-	114
Manufacturing	-	-	136	-	-	-	6	-	-	-	-	83
Telecommunications	-	-	0	-	-	-	0	-	-	-	-	86
Computer Services	-	-	0	-	-	-	0	-	-	-	-	180
ICT sector as a % of Total	-	-	2.2%	-	-	-	0.1%	-	-	-	-	

R&D Intensity (BERD as a % of value added)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio CH/EU 2014 <sup>2</sup>	CH2014vs CH2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	-	-	2.0	-	-	-	2.1	-	-	-	-	117
ICT sector	-	-	1.1	-	-	-	0.0	-	-	-	-	103
Manufacturing	-	-	4.2	-	-	-	0.2	-	-	-	-	115
Telecommunications	-	-	0.0	-	-	-	0.0	-	-	-	-	93
Computer Services	-	-	0.0	-	-	-	0.0	-	-	-	-	130



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.



# AUSTRALIA (AU)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share AU/EU 2014 <sup>1</sup>	AU2014vs AU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	630	670	665	677	715	744	749	807	815	5.8%	129	114
ICT sector	20	21	21	22	22	24	25	26	25	4.6%	125	110
Manufacturing	1	1	1	1	1	1	1	1	1	1.6%	82	72
Telecommunications	10	10	10	11	11	11	11	12	11	6.1%	114	92
Computer Services	9	9	10	10	11	12	13	13	13	4.3%	143	139
ICT sector as a % of Total	3.2%	3.1%	3.2%	3.3%	3.1%	3.2%	3.3%	3.2%	3.1%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share AU/EU 2014 <sup>1</sup>	AU2014vs AU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	10249	10564	10758	10846	11115	11249	11385	11450	11654	5.1%	114	101
ICT sector	237	230	236	241	252	259	270	272	300	5.3%	127	108
Manufacturing	18	20	17	16	14	13	13	13	13	1.9%	70	72
Telecommunications	65	60	61	61	63	61	61	64	69	6.1%	106	93
Computer Services	153	150	158	164	175	184	195	195	218	5.6%	142	124
ICT sector as a % of Total	2.3%	2.2%	2.2%	2.2%	2.3%	2.3%	2.4%	2.4%	2.6%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio AU/EU 2014 <sup>2</sup>	AU2014vs AU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	61	63	62	62	64	66	66	70	70	(1.13)	114	113
ICT sector	85	89	89	93	88	92	92	94	84	(0.88)	99	102
Manufacturing	55	49	53	51	50	55	56	61	64	(0.81)	116	101
Telecommunications	154	170	168	183	168	181	179	183	165	(1.01)	107	99
Computer Services	60	62	62	64	63	65	67	67	60	(0.76)	100	112

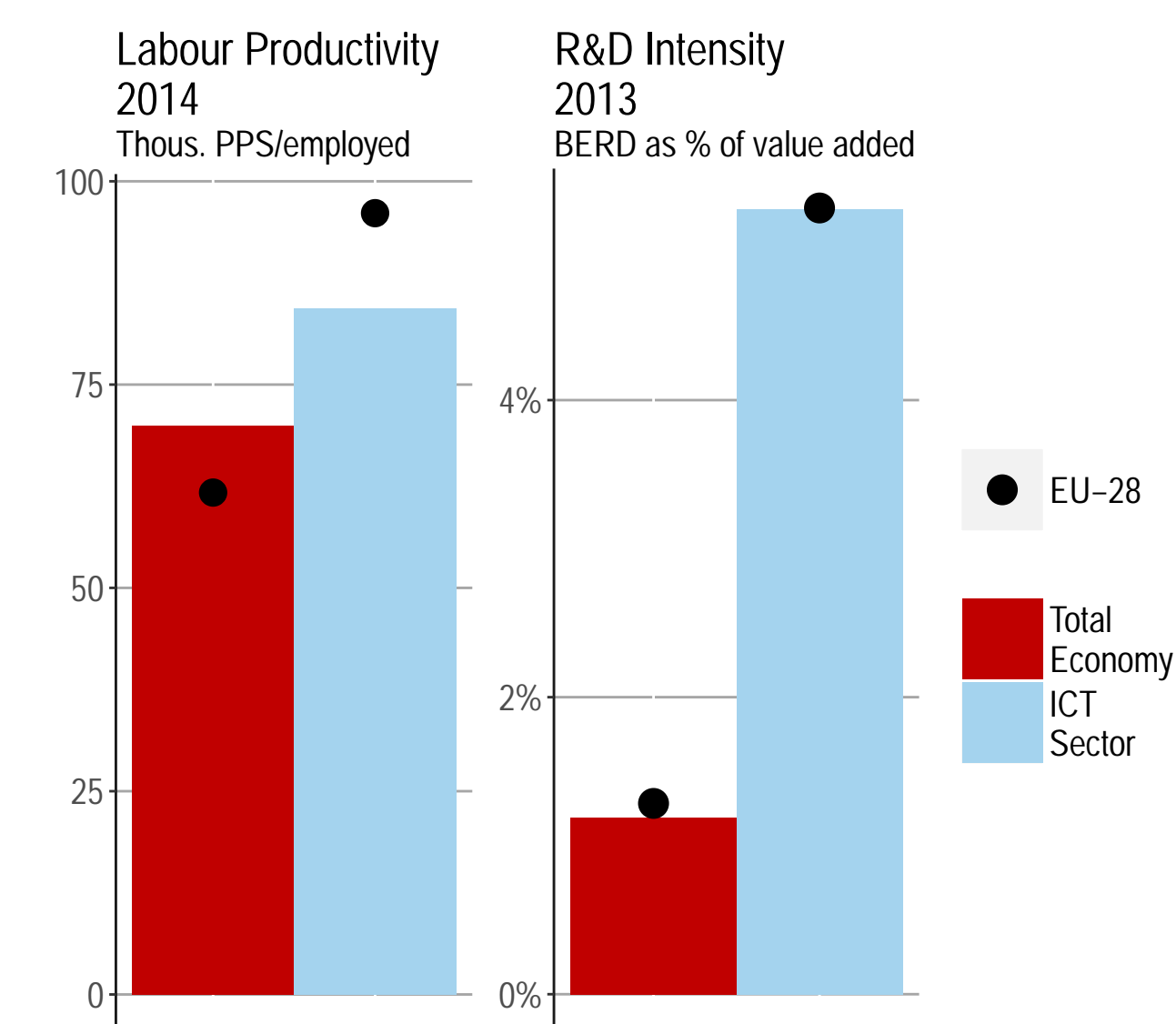
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share AU/EU 2014 <sup>1</sup>	AU2014vs AU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	7326	8558	9132	8749	9138	9147	9126	9594	-	-	-	133
ICT sector	1089	1116	1104	935	973	1031	1146	1354	1444	5.0%	133	114
Manufacturing	163	180	209	189	184	174	200	234	235	2.1%	144	83
Telecommunications	364	324	313	153	178	241	172	121	140	4.2%	38	86
Computer Services	562	612	582	593	610	616	773	999	1069	7.5%	190	180
ICT sector as a % of Total	14.9%	13.0%	12.1%	10.7%	10.6%	11.3%	12.6%	14.1%	-			

R&D Intensity (BERD as a % of value added)

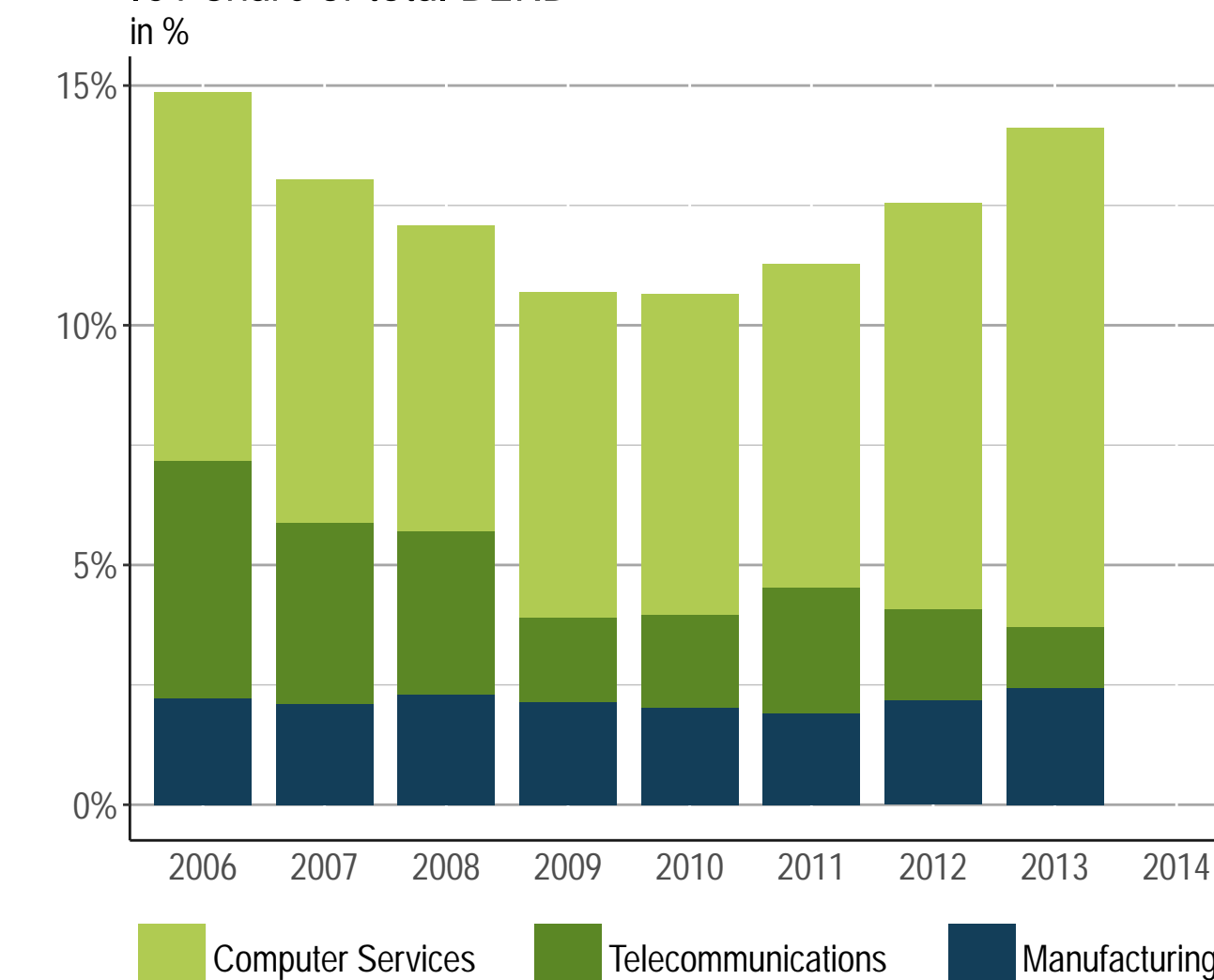
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio AU/EU 2014 <sup>2</sup>	AU2014vs AU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1.2	1.3	1.4	1.3	1.3	1.2	1.2	1.2	-	-	-	117
ICT sector	5.4	5.4	5.3	4.2	4.4	4.3	4.6	5.3	5.7	(1.07)	106	103
Manufacturing	16.2	18.0	23.6	23.2	26.1	23.5	26.5	30.0	28.5	(1.31)	176	115
Telecommunications	3.6	3.2	3.0	1.4	1.7	2.2	1.6	1.0	1.2	(0.69)	34	93
Computer Services	6.1	6.6	5.9	5.7	5.6	5.2	5.9	7.6	8.1	(1.75)	133	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# BRAZIL (BR)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share BR/EU 2014 <sup>1</sup>	BR2014vs BR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1789	1943	2003	1940	2138	2243	2376	2444	2502	17.9%	140	114
ICT sector	63	70	71	68	68	68	71	71	71	13.0%	114	110
Manufacturing	6	6	6	5	6	7	6	7	6	12.4%	116	72
Telecommunications	29	32	33	31	32	29	31	29	30	16.3%	105	92
Computer Services	28	31	31	31	29	32	33	35	35	11.2%	122	139
ICT sector as a % of Total	3.5%	3.6%	3.5%	3.5%	3.2%	3.0%	3.0%	2.9%	2.8%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share BR/EU 2014 <sup>1</sup>	BR2014vs BR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	93050	94552	95720	96559	98116	99560	100960	102537	105572	46.6%	114	101
ICT sector	950	998	1044	1052	1091	1169	1227	1246	1259	22.1%	132	108
Manufacturing	114	121	122	125	135	143	145	144	142	21.3%	124	72
Telecommunications	184	191	198	199	201	225	248	250	253	22.3%	138	93
Computer Services	652	686	723	727	755	801	834	852	864	22.2%	132	124
ICT sector as a % of Total	1.0%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.2%	1.2%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio BR/EU 2014 <sup>2</sup>	BR2014vs BR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	19	21	21	20	22	23	24	24	24	(0.38)	123	113
ICT sector	66	70	68	64	62	58	58	57	57	(0.59)	86	102
Manufacturing	49	49	51	42	47	46	44	47	46	(0.58)	94	101
Telecommunications	157	170	167	157	159	130	127	115	119	(0.73)	76	99
Computer Services	43	46	43	43	39	40	40	41	40	(0.50)	92	112

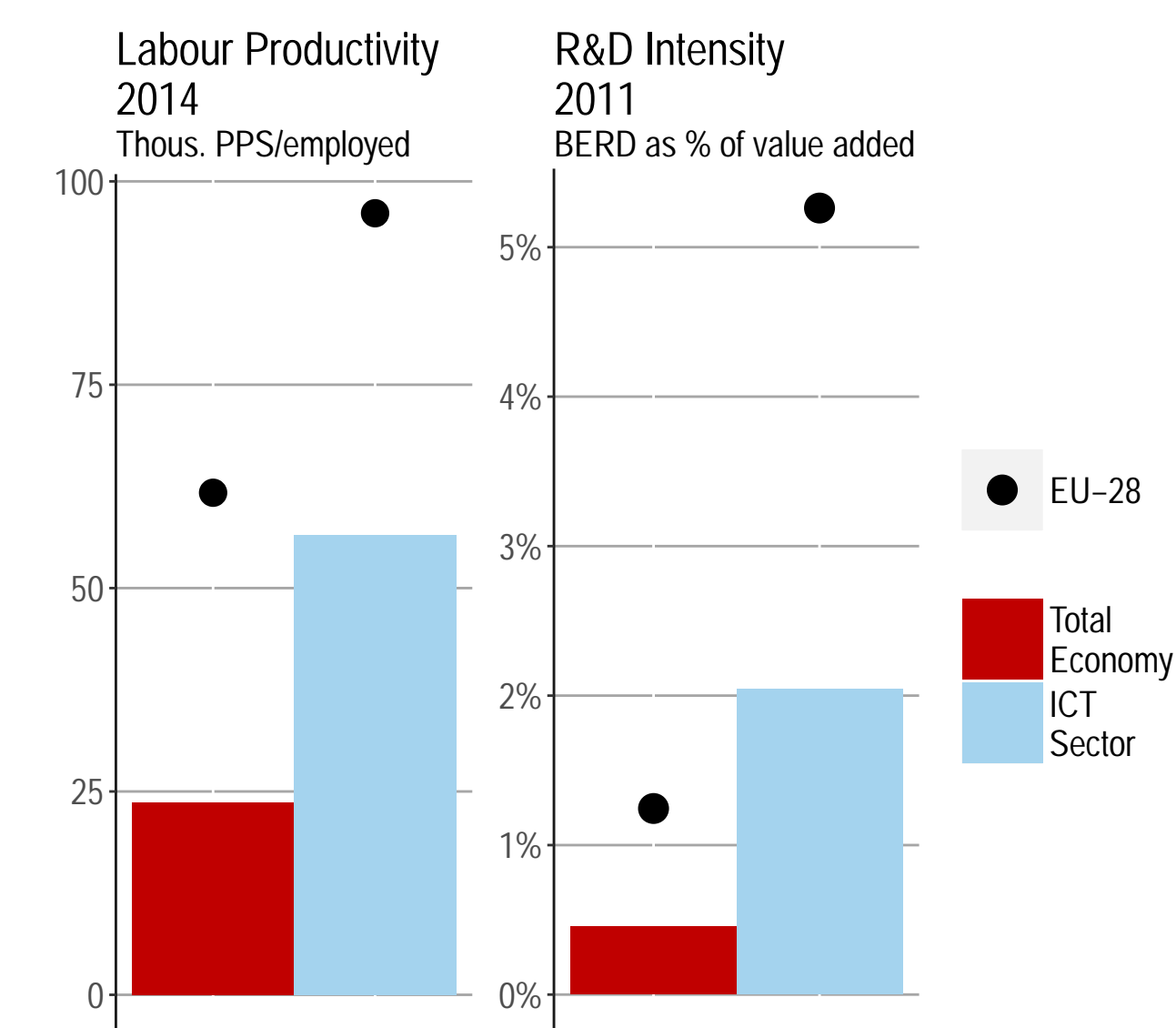
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

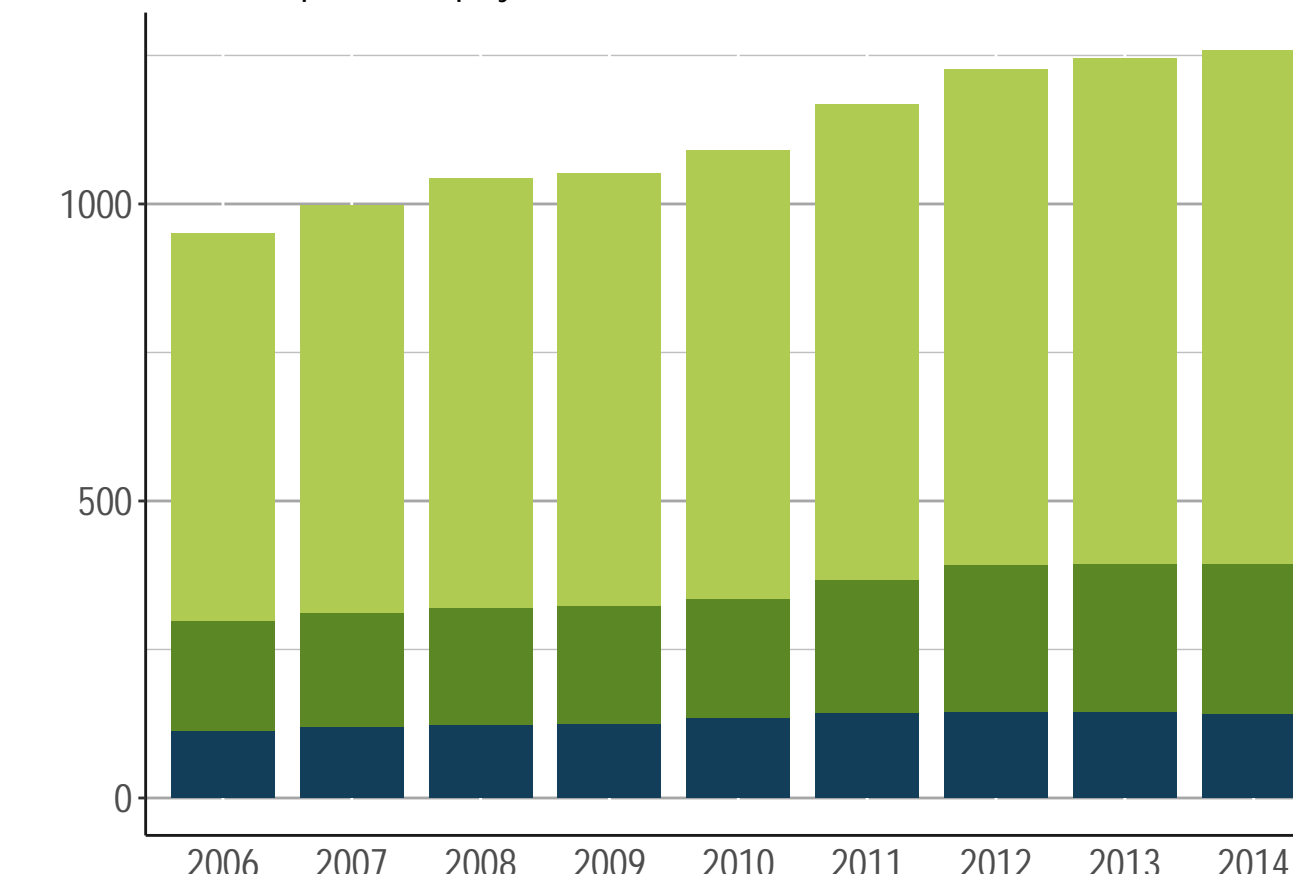
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share BR/EU 2014 <sup>1</sup>	BR2014vs BR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	-	-	9807	-	-	10233	-	-	-	-	-	133
ICT sector	-	-	1437	-	-	1391	-	-	-	-	-	114
Manufacturing	-	-	425	-	-	398	-	-	-	-	-	83
Telecommunications	-	-	778	-	-	535	-	-	-	-	-	86
Computer Services	-	-	234	-	-	458	-	-	-	-	-	180
ICT sector as a % of Total	-	-	14.7%	-	-	13.6%	-	-	-	-	-	

R&D Intensity (BERD as a % of value added)

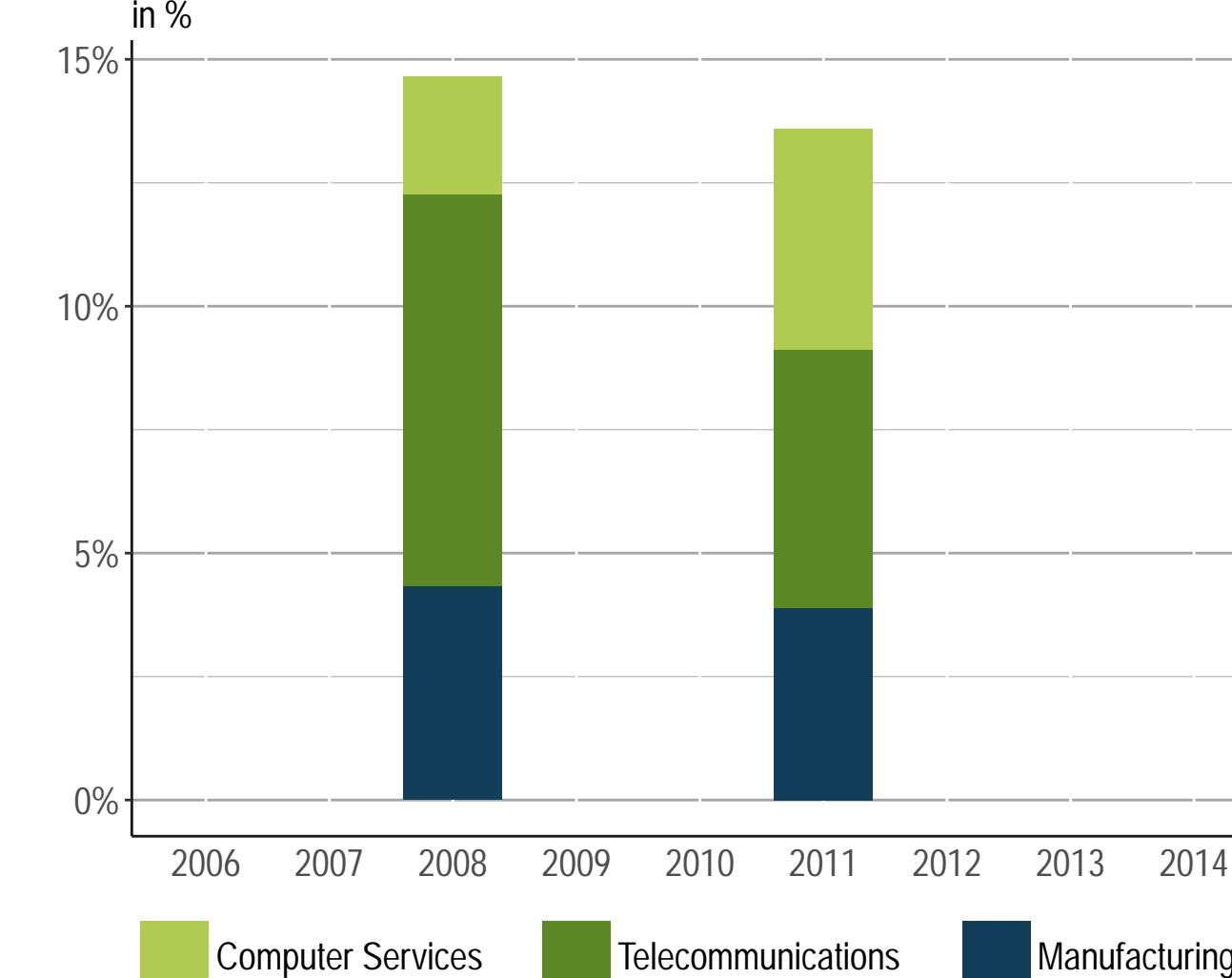
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio BR/EU 2014 <sup>2</sup>	BR2014vs BR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	-	-	0.5	-	-	0.5	-	-	-	-	-	117
ICT sector	-	-	2.0	-	-	2.0	-	-	-	-	-	103
Manufacturing	-	-	6.8	-	-	6.0	-	-	-	-	-	115
Telecommunications	-	-	2.3	-	-	1.8	-	-	-	-	-	93
Computer Services	-	-	0.7	-	-	1.4	-	-	-	-	-	130



Employment in the ICT sector  
Thousand person employed



ICT share of total BERD  
in %



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# CANADA (CA)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CA/EU 2014 <sup>1</sup>	CA2014vs CA2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1006	1052	1046	980	1039	1077	1108	1149	-	-	-	114
ICT sector	36	38	37	37	38	39	40	41	44	8.0%	123	110
Manufacturing	3	3	3	3	3	3	3	2	2	4.2%	71	72
Telecommunications	18	19	19	19	19	19	20	20	20	10.9%	111	92
Computer Services	14	15	15	15	16	17	18	19	21	6.9%	148	139
ICT sector as a % of Total	3.5%	3.6%	3.5%	3.8%	3.7%	3.6%	3.6%	3.6%	-			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CA/EU 2014 <sup>1</sup>	CA2014vs CA2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	16685	17038	17285	16986	17298	17572	17764	18003	18109	8.0%	108	101
ICT sector	440	443	442	436	444	464	462	466	472	8.3%	107	108
Manufacturing	61	56	50	47	42	43	41	36	34	5.1%	56	72
Telecommunications	128	134	136	129	135	133	131	124	121	10.7%	95	93
Computer Services	252	253	256	260	267	288	290	306	318	8.2%	126	124
ICT sector as a % of Total	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio CA/EU 2014 <sup>2</sup>	CA2014vs CA2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	60	62	61	58	60	61	62	64	-	-	-	113
ICT sector	81	85	83	85	86	85	87	88	93	(0.96)	114	102
Manufacturing	51	59	60	66	77	69	64	60	65	(0.83)	129	101
Telecommunications	143	144	138	145	145	146	151	157	167	(1.02)	117	99
Computer Services	57	60	58	59	58	59	62	63	67	(0.84)	118	112

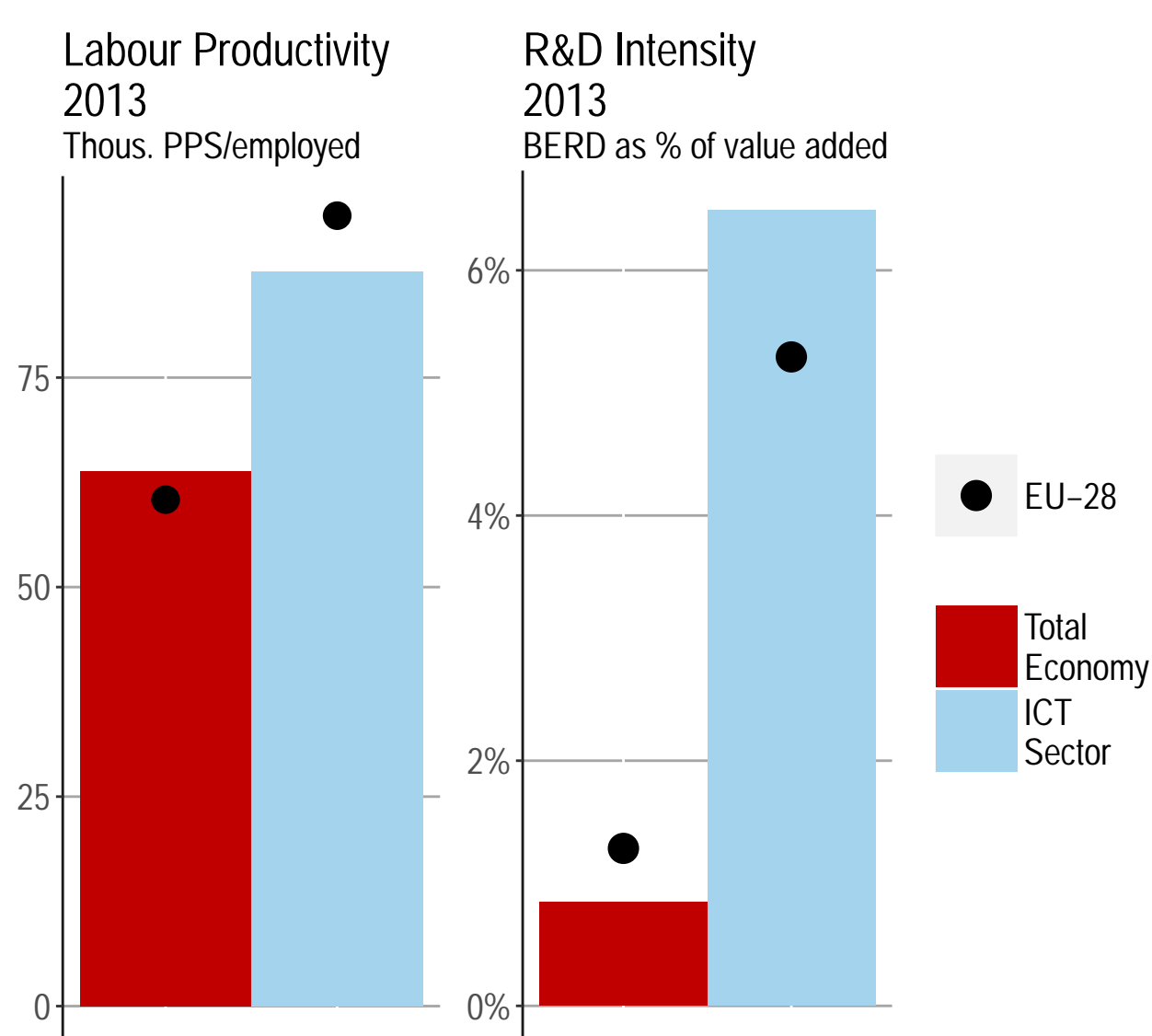
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

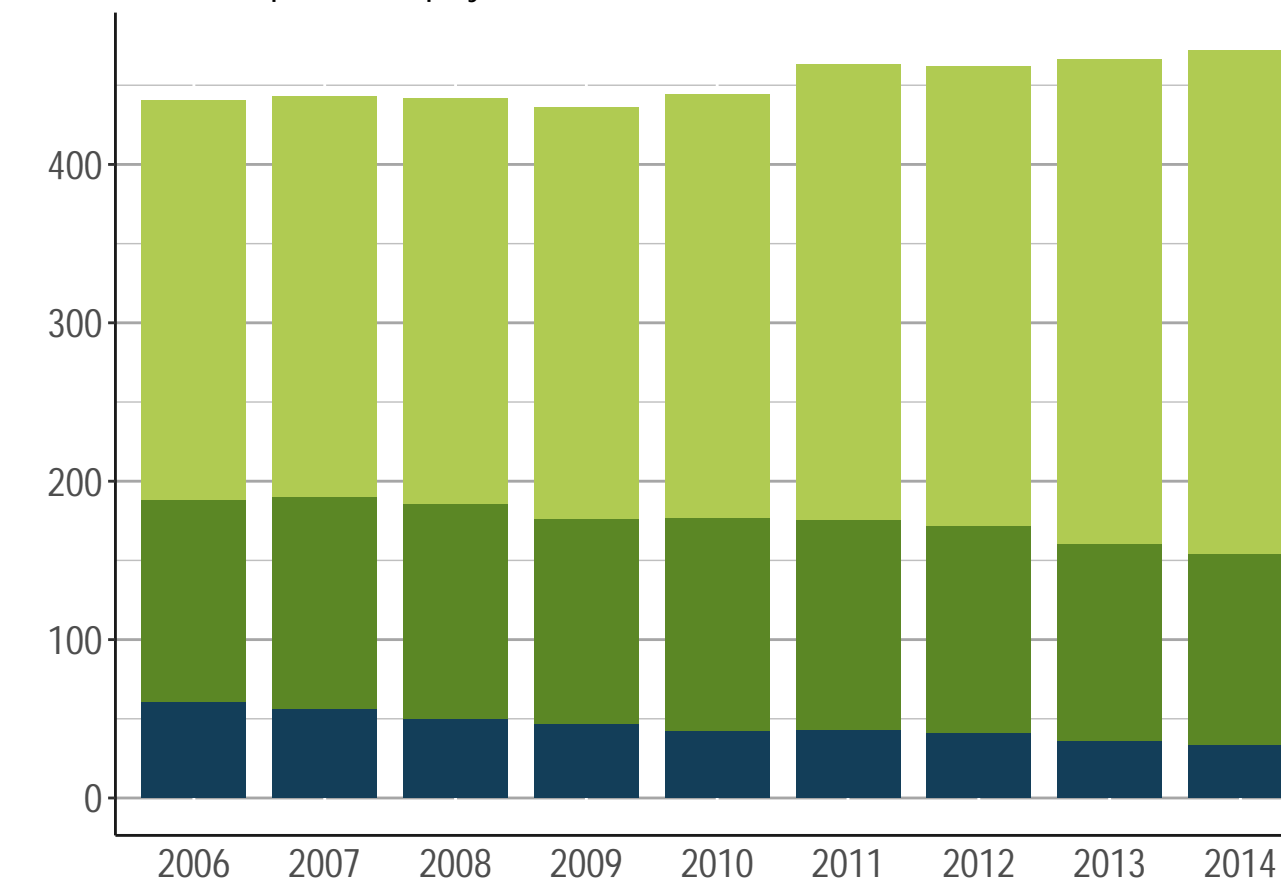
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CA/EU 2014 <sup>1</sup>	CA2014vs CA2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	11110	11202	10533	10031	9879	10279	10148	9734	9583	5.3%	86	133
ICT sector	3390	3440	2916	2756	2613	2846	2722	2653	2638	9.1%	78	114
Manufacturing	1652	1647	1301	1323	1051	1261	1251	1124	1117	9.8%	68	83
Telecommunications	446	444	379	332	359	262	244	285	253	7.6%	57	86
Computer Services	1292	1348	1236	1101	1203	1323	1228	1243	1267	8.9%	98	180
ICT sector as a % of Total	30.5%	30.7%	27.7%	27.5%	26.4%	27.7%	26.8%	27.3%	27.5%			

R&D Intensity (BERD as a % of value added)

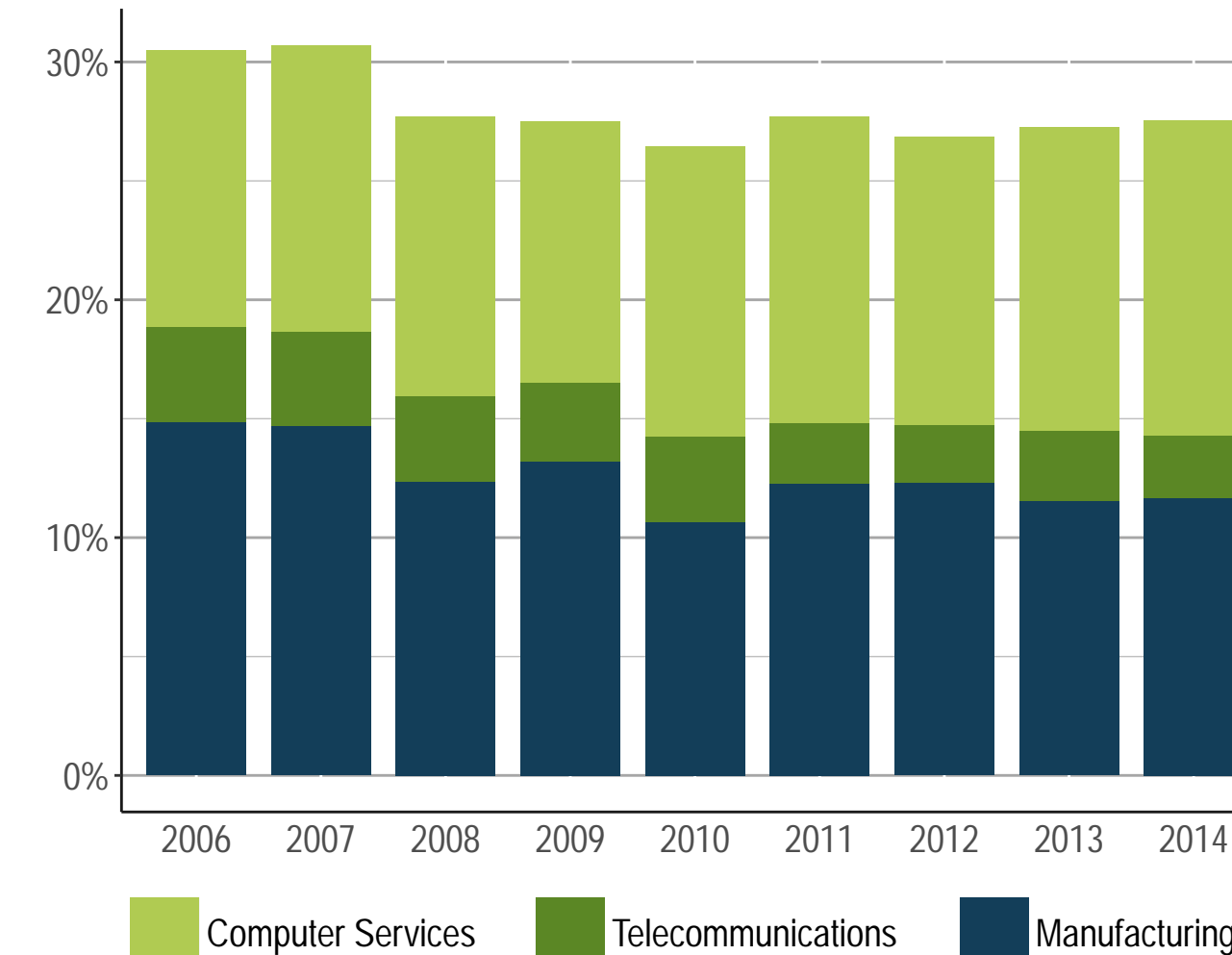
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio CA/EU 2014 <sup>2</sup>	CA2014vs CA2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1.1	1.1	1.0	1.0	1.0	1.0	0.9	0.8	-	-	-	117
ICT sector	9.5	9.1	8.0	7.4	6.8	7.3	6.7	6.5	6.0	(1.13)	63	103
Manufacturing	53.3	49.8	43.2	43.0	32.3	42.6	47.9	51.5	50.5	(2.32)	95	115
Telecommunications	2.4	2.3	2.0	1.8	1.8	1.4	1.2	1.5	1.3	(0.69)	51	93
Computer Services	9.0	8.9	8.3	7.2	7.7	7.8	6.8	6.5	5.9	(1.28)	66	130



Employment in the ICT sector  
Thousand person employed



ICT share of total BERD  
in %



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# CHINA (CN)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CN/EU 2014 <sup>1</sup>	CN2014vs CN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	6279	7339	7901	8386	9520	10530	11591	12368	13575	97.1%	216	114
ICT sector	351	384	390	402	450	480	545	581	640	117.2%	182	110
Manufacturing	187	201	194	203	239	256	287	294	314	599.7%	168	72
Telecommunications	150	166	178	181	190	202	233	259	294	159.0%	196	92
Computer Services	14	18	18	19	20	22	25	28	32	10.2%	232	139
ICT sector as a % of Total	5.6%	5.2%	4.9%	4.8%	4.7%	4.6%	4.7%	4.7%	4.7%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CN/EU 2014 <sup>1</sup>	CN2014vs CN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	749780	753210	755640	758280	761050	764200	767040	769770	772530	340.9%	103	101
ICT sector	10125	11031	11739	11918	12805	13584	13952	14330	14694	258.5%	145	108
Manufacturing	5504	6254	6716	6815	7666	7640	7920	7874	7861	1184.0%	143	72
Telecommunications	4412	4514	4734	4805	4831	5638	5723	6125	6482	571.5%	147	93
Computer Services	209	263	289	297	309	305	309	331	350	9.0%	168	124
ICT sector as a % of Total	1.4%	1.5%	1.6%	1.6%	1.7%	1.8%	1.8%	1.9%	1.9%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio CN/EU 2014 <sup>2</sup>	CN2014vs CN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	8	10	10	11	13	14	15	16	18	(0.28)	210	113
ICT sector	35	35	33	34	35	35	39	41	44	(0.45)	126	102
Manufacturing	34	32	29	30	31	34	36	37	40	(0.51)	118	101
Telecommunications	34	37	38	38	39	36	41	42	45	(0.28)	133	99
Computer Services	65	67	64	64	66	71	81	84	90	(1.13)	138	112

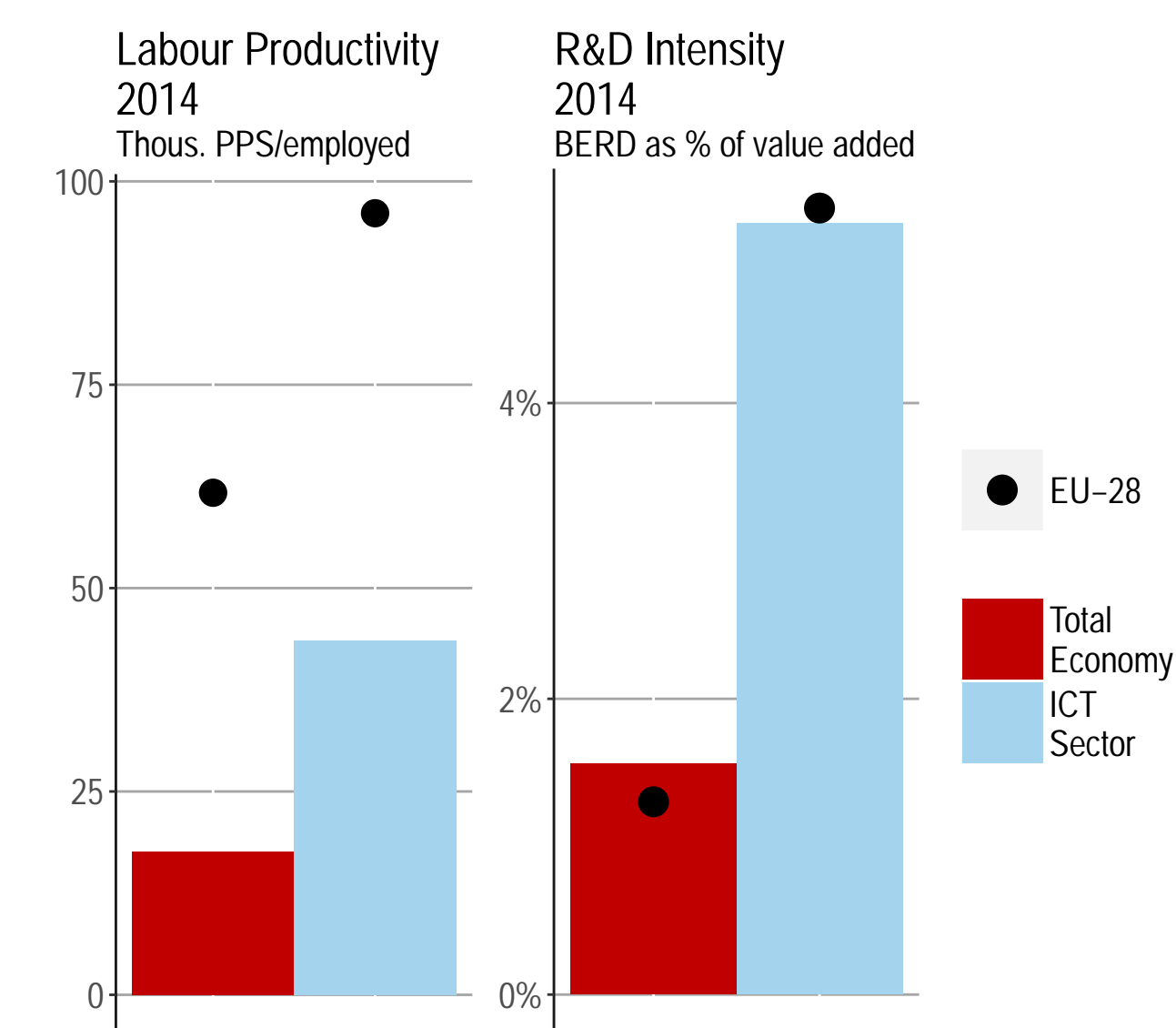
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

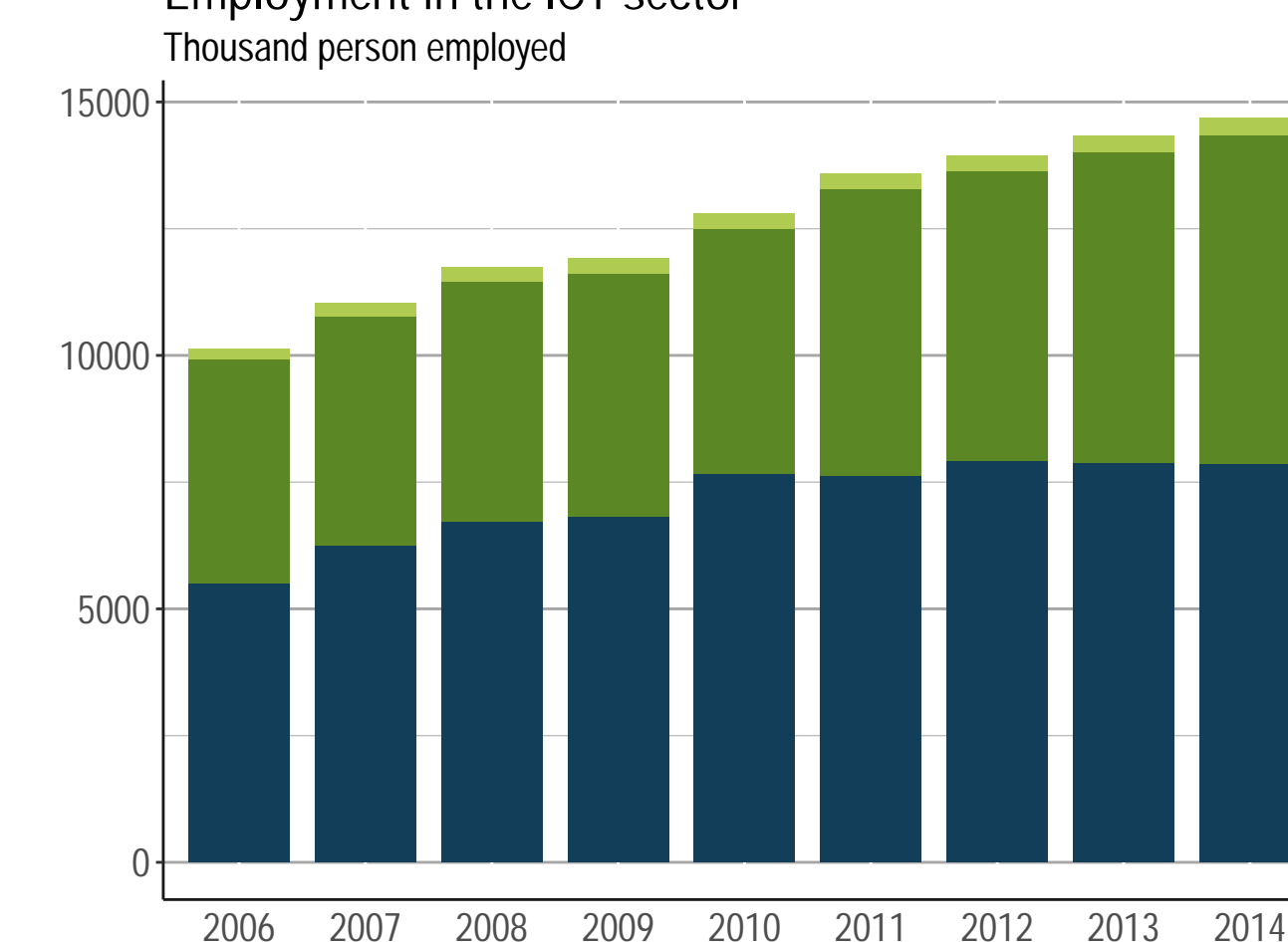
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share CN/EU 2014 <sup>1</sup>	CN2014vs CN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	61081	72841	83624	102062	119520	141586	168211	188575	212085	116.2%	347	133
ICT sector	13691	14596	15286	17771	20600	23836	26161	29620	33383	114.9%	244	114
Manufacturing	11949	12591	13021	14524	17430	19860	21852	24751	28141	246.7%	236	83
Telecommunications	539	607	748	931	888	1076	1308	1472	1552	46.5%	288	86
Computer Services	1203	1399	1518	2316	2282	2900	3001	3397	3690	25.8%	307	180
ICT sector as a % of Total	22.4%	20.0%	18.3%	17.4%	17.2%	16.8%	15.6%	15.7%	15.7%			

R&D Intensity (BERD as a % of value added)

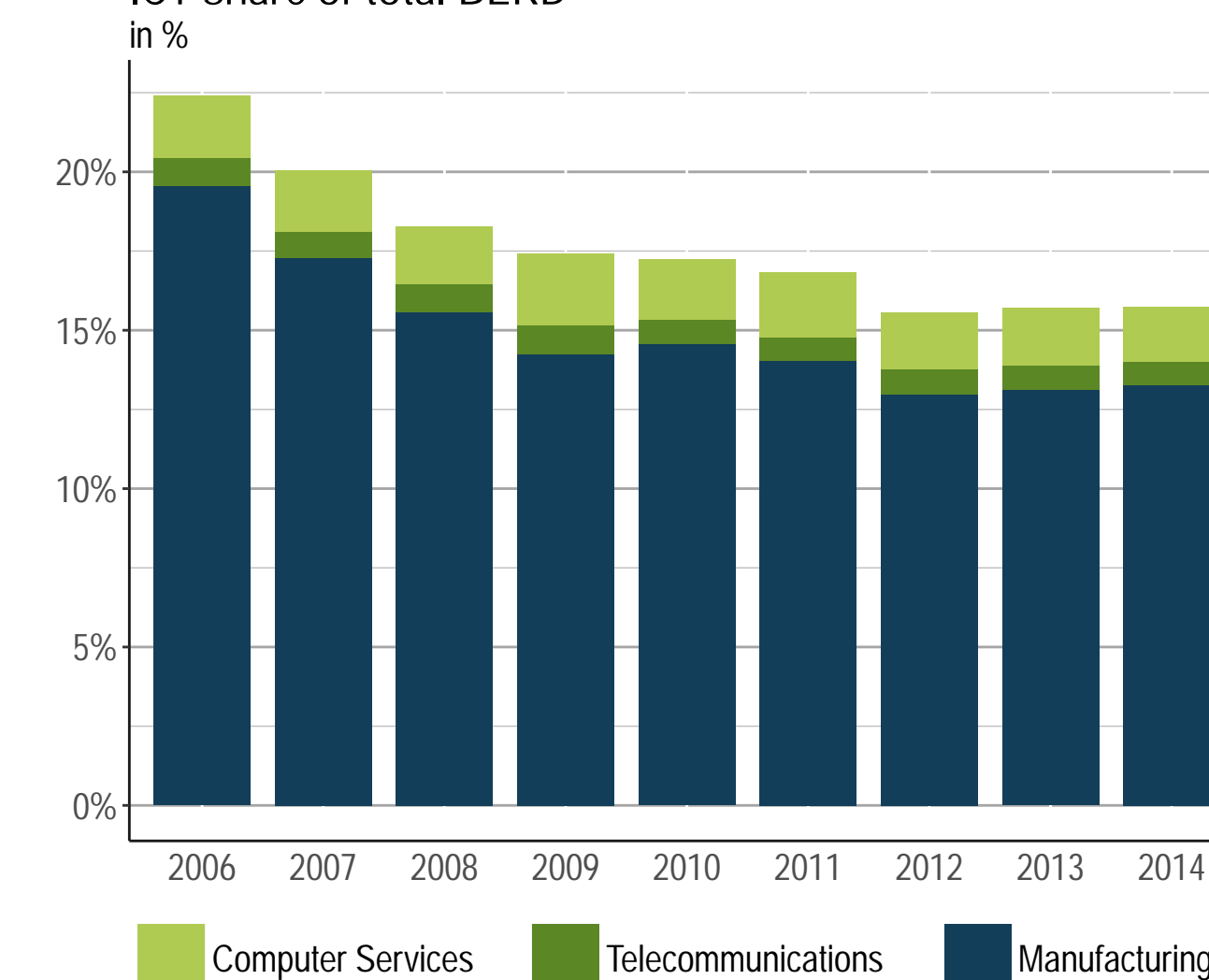
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio CN/EU 2014 <sup>2</sup>	CN2014vs CN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1.0	1.0	1.1	1.2	1.3	1.3	1.5	1.5	1.6	(1.20)	161	117
ICT sector	3.9	3.8	3.9	4.4	4.6	5.0	4.8	5.1	5.2	(0.98)	134	103
Manufacturing	6.4	6.3	6.7	7.2	7.3	7.7	7.6	8.4	9.0	(0.41)	140	115
Telecommunications	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.5	(0.29)	147	93
Computer Services	8.8	7.9	8.2	12.2	11.2	13.4	12.0	12.2	11.7	(2.52)	132	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# INDIA (IN)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share IN/EU 2014 <sup>1</sup>	IN2014vs IN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	2910	3270	3335	3510	3971	4362	4711	4975	5429	38.8%	187	114
ICT sector	114	133	140	146	157	177	198	229	253	46.2%	221	110
Manufacturing	13	16	15	14	14	12	13	16	16	31.4%	129	72
Telecommunications	31	33	35	38	39	44	48	54	60	32.4%	196	92
Computer Services	71	84	90	94	104	120	137	160	176	57.0%	249	139
ICT sector as a % of Total	3.9%	4.1%	4.2%	4.2%	4.0%	4.1%	4.2%	4.6%	4.7%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share IN/EU 2014 <sup>1</sup>	IN2014vs IN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	471768	460230	463379	465828	475087	480303	486914	492094	497550	219.6%	106	101
ICT sector	3450	3687	3888	4258	4762	5269	5652	6021	6471	113.8%	188	108
Manufacturing	294	300	290	285	332	409	387	413	425	64.0%	144	72
Telecommunications	1676	1779	1881	1980	1891	1783	1653	1894	1996	176.0%	119	93
Computer Services	1480	1607	1717	1993	2538	3077	3612	3713	4050	104.2%	274	124
ICT sector as a % of Total	0.7%	0.8%	0.8%	0.9%	1.0%	1.1%	1.2%	1.2%	1.3%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio IN/EU 2014 <sup>2</sup>	IN2014vs IN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	6	7	7	8	8	9	10	10	11	(0.18)	177	113
ICT sector	33	36	36	34	33	34	35	38	39	(0.41)	118	102
Manufacturing	43	52	53	49	41	30	33	38	39	(0.49)	89	101
Telecommunications	18	19	19	19	21	25	29	28	30	(0.18)	164	99
Computer Services	48	52	52	47	41	39	38	43	44	(0.55)	91	112

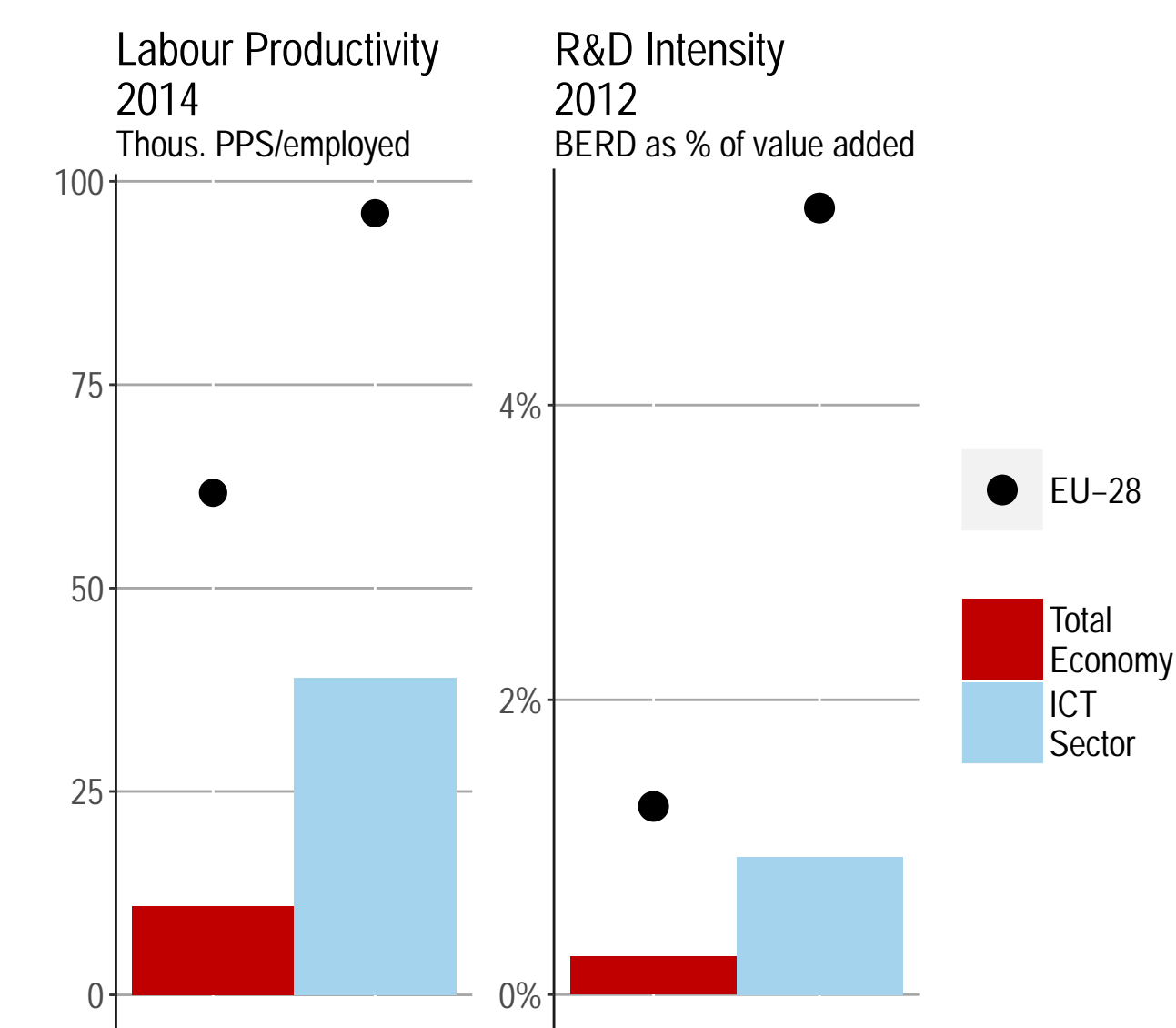
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share IN/EU 2014 <sup>1</sup>	IN2014vs IN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	7882	9496	9710	9572	9646	10967	12118	-	-	-	-	133
ICT sector	1627	1644	1451	1512	1476	1682	1846	-	-	-	-	114
Manufacturing	101	105	109	106	103	99	106	-	-	-	-	83
Telecommunications	98	120	130	132	131	150	165	-	-	-	-	86
Computer Services	1428	1418	1212	1274	1242	1434	1576	-	-	-	-	180
ICT sector as a % of Total	20.6%	17.3%	14.9%	15.8%	15.3%	15.3%	15.2%	-	-			

R&D Intensity (BERD as a % of value added)

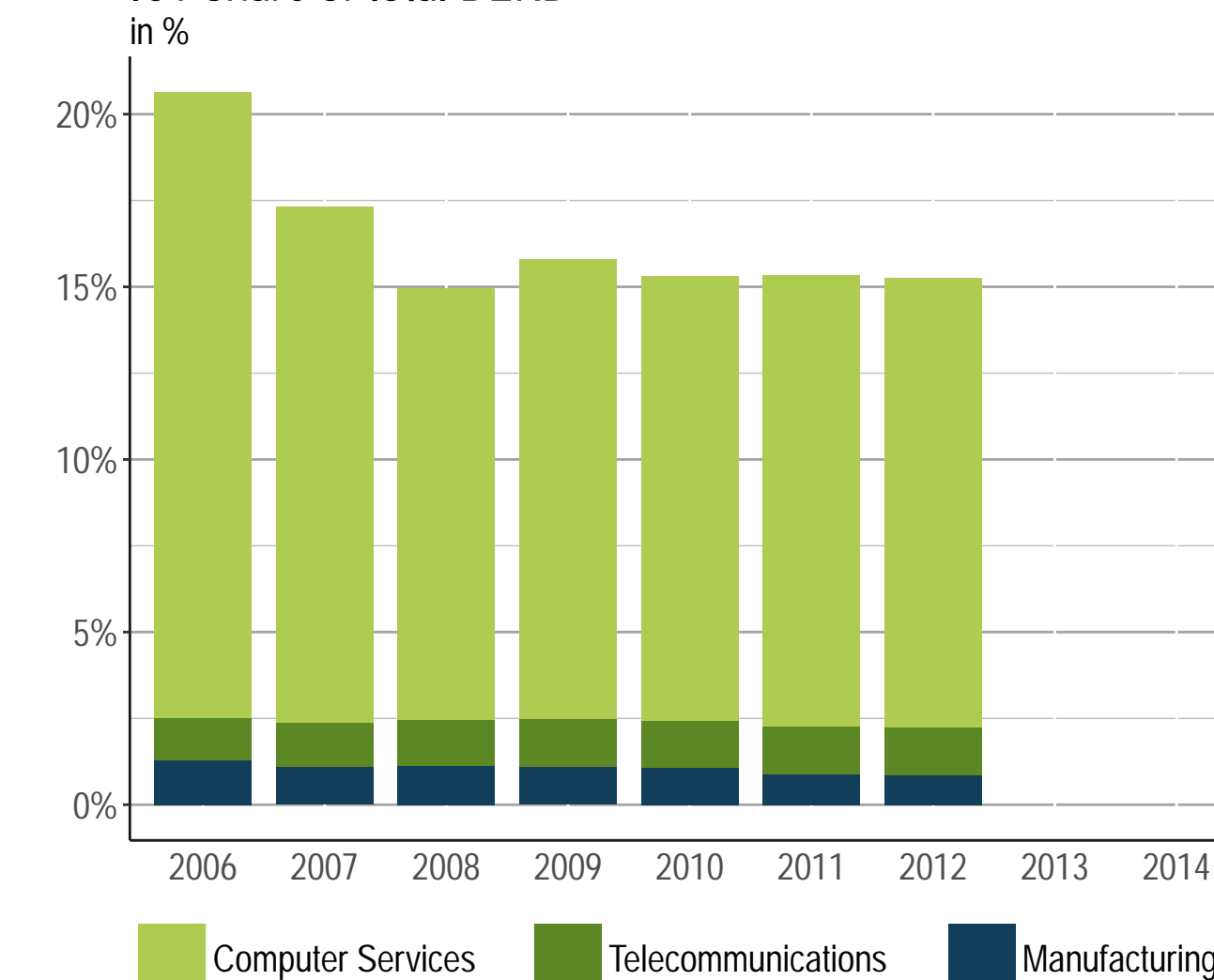
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio IN/EU 2014 <sup>2</sup>	IN2014vs IN2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	0.3	0.3	0.3	0.3	0.2	0.3	0.3	-	-	-	-	117
ICT sector	1.4	1.2	1.0	1.0	0.9	1.0	0.9	-	-	-	-	103
Manufacturing	0.8	0.7	0.7	0.8	0.8	0.8	0.8	-	-	-	-	115
Telecommunications	0.3	0.4	0.4	0.3	0.3	0.3	0.3	-	-	-	-	93
Computer Services	2.0	1.7	1.3	1.4	1.2	1.2	1.1	-	-	-	-	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# JAPAN (JP)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share JP/EU 2014 <sup>1</sup>	JP2014vs JP2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	3308	3460	3351	3069	3297	3311	3448	3441	3460	24.7%	105	114
ICT sector	190	194	187	164	186	184	183	185	188	34.5%	99	110
Manufacturing	75	75	62	46	59	53	44	45	48	91.7%	64	72
Telecommunications	56	57	59	58	64	68	71	72	72	38.9%	128	92
Computer Services	59	62	66	60	63	63	68	68	68	22.1%	117	139
ICT sector as a % of Total	5.8%	5.6%	5.6%	5.3%	5.6%	5.6%	5.3%	5.4%	5.4%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share JP/EU 2014 <sup>1</sup>	JP2014vs JP2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	64191	64431	64203	63268	62982	62851	62852	63071	63471	28.0%	99	101
ICT sector	2488	2455	2431	2353	2340	2316	2197	2209	2275	40.0%	91	108
Manufacturing	1138	1087	1035	948	950	941	826	812	784	118.2%	69	72
Telecommunications	208	200	188	181	181	183	182	193	193	17.0%	93	93
Computer Services	1142	1169	1208	1224	1208	1192	1189	1204	1297	33.4%	114	124
ICT sector as a % of Total	3.9%	3.8%	3.8%	3.7%	3.7%	3.7%	3.5%	3.5%	3.6%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio JP/EU 2014 <sup>2</sup>	JP2014vs JP2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	52	54	52	49	52	53	55	55	55	(0.88)	106	113
ICT sector	77	79	77	70	80	80	83	84	83	(0.86)	108	102
Manufacturing	66	69	60	48	62	57	53	55	61	(0.78)	92	101
Telecommunications	271	285	311	323	352	370	391	374	372	(2.28)	137	99
Computer Services	51	53	55	49	52	53	57	56	53	(0.66)	103	112

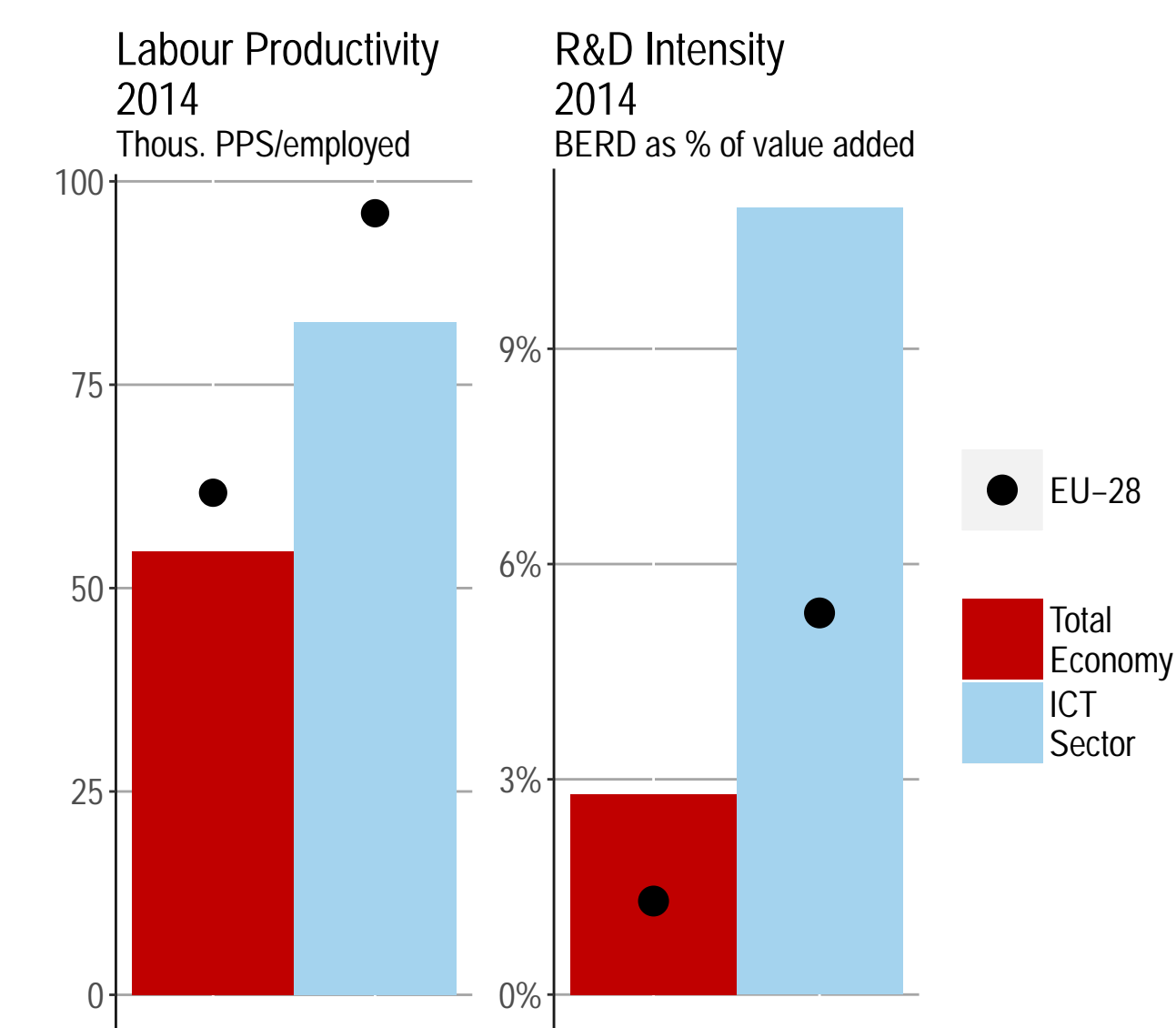
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share JP/EU 2014 <sup>1</sup>	JP2014vs JP2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	87018	93288	91151	78061	82044	86154	88275	91168	96546	52.9%	111	133
ICT sector	24752	24278	23375	19094	18750	20997	20598	19502	20634	71.0%	83	114
Manufacturing	21664	21284	19689	15916	15337	17242	16835	16300	15929	139.6%	74	83
Telecommunications	1524	1671	2188	1718	1737	2097	2143	2012	2699	80.9%	177	86
Computer Services	1564	1323	1499	1460	1676	1658	1621	1190	2006	14.0%	128	180
ICT sector as a % of Total	28.4%	26.0%	25.6%	24.5%	22.9%	24.4%	23.3%	21.4%	21.4%			

R&D Intensity (BERD as a % of value added)

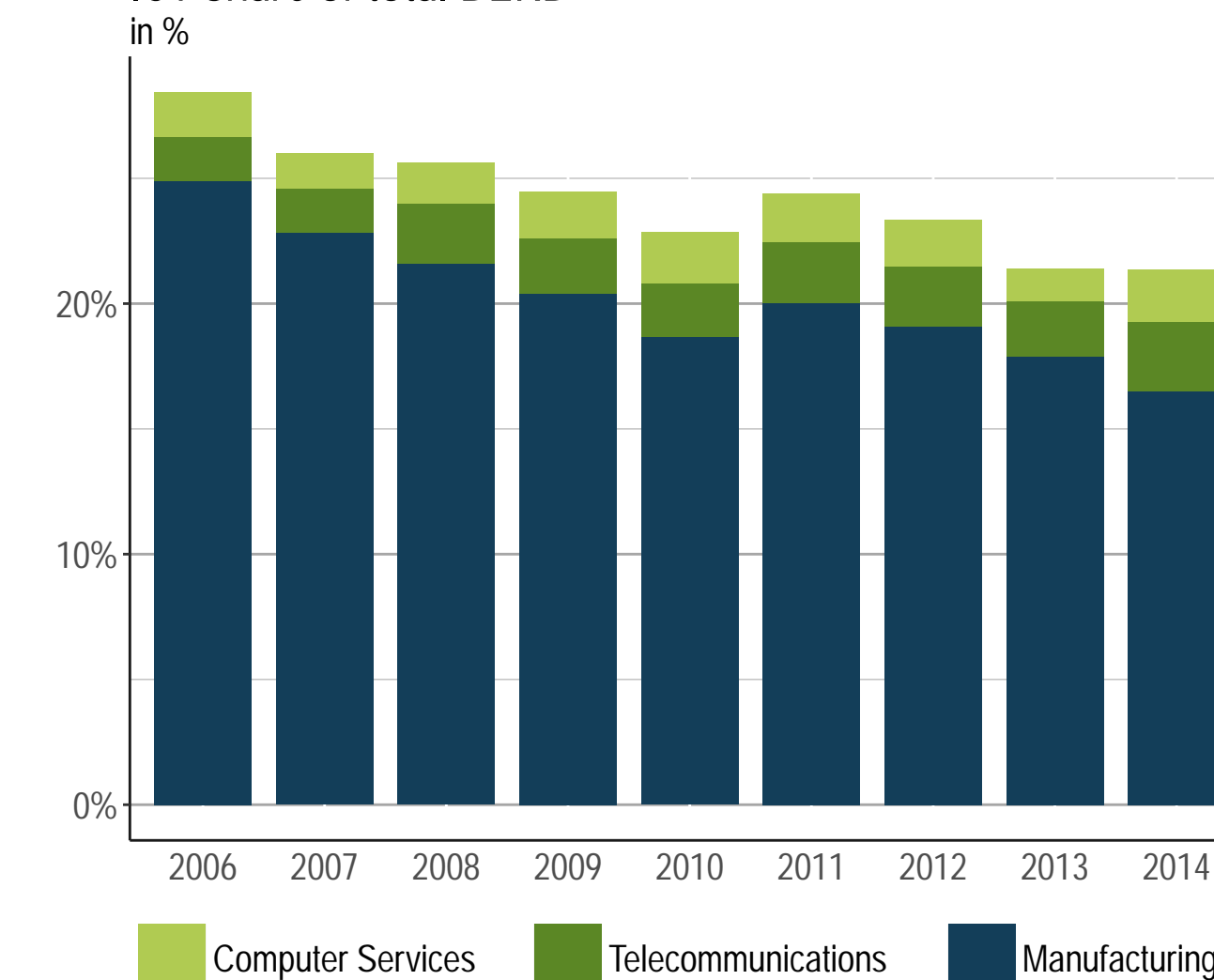
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio JP/EU 2014 <sup>2</sup>	JP2014vs JP2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	2.6	2.7	2.7	2.5	2.5	2.6	2.6	2.6	2.8	(2.14)	106	117
ICT sector	13.0	12.5	12.5	11.7	10.1	11.4	11.3	10.5	11.0	(2.06)	84	103
Manufacturing	28.7	28.3	31.6	34.9	25.9	32.3	38.7	36.4	33.2	(1.52)	115	115
Telecommunications	2.7	2.9	3.7	2.9	2.7	3.1	3.0	2.8	3.8	(2.08)	139	93
Computer Services	2.7	2.1	2.3	2.4	2.7	2.6	2.4	1.7	2.9	(0.64)	110	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# KOREA (KR)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share KR/EU 2014 <sup>1</sup>	KR2014vs KR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1018	1099	1098	1051	1148	1176	1219	1211	1254	9.0%	123	114
ICT sector	94	99	97	94	106	107	110	111	111	20.3%	119	110
Manufacturing	56	61	60	59	70	72	74	75	74	140.5%	132	72
Telecommunications	19	19	17	15	15	14	14	14	14	7.7%	74	92
Computer Services	18	20	20	20	21	21	23	22	23	7.5%	127	139
ICT sector as a % of Total	9.2%	9.0%	8.8%	8.9%	9.2%	9.1%	9.0%	9.2%	8.9%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share KR/EU 2014 <sup>1</sup>	KR2014vs KR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	23151	23433	23577	23506	23829	24244	24681	25066	25599	11.3%	111	101
ICT sector	1047	1027	1023	1027	1062	1070	1051	1025	1088	19.1%	104	108
Manufacturing	526	516	507	492	514	495	493	483	511	77.0%	97	72
Telecommunications	210	194	187	197	179	171	145	131	142	12.5%	68	93
Computer Services	312	317	329	338	369	404	413	411	434	11.2%	139	124
ICT sector as a % of Total	4.5%	4.4%	4.3%	4.4%	4.5%	4.4%	4.3%	4.1%	4.2%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio KR/EU 2014 <sup>2</sup>	KR2014vs KR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	44	47	47	45	48	49	49	48	49	(0.79)	111	113
ICT sector	89	97	95	91	99	100	105	109	102	(1.06)	114	102
Manufacturing	106	118	119	120	137	146	149	155	144	(1.82)	135	101
Telecommunications	92	97	91	77	83	81	97	106	101	(0.62)	109	99
Computer Services	59	62	60	58	56	53	55	55	53	(0.67)	91	112

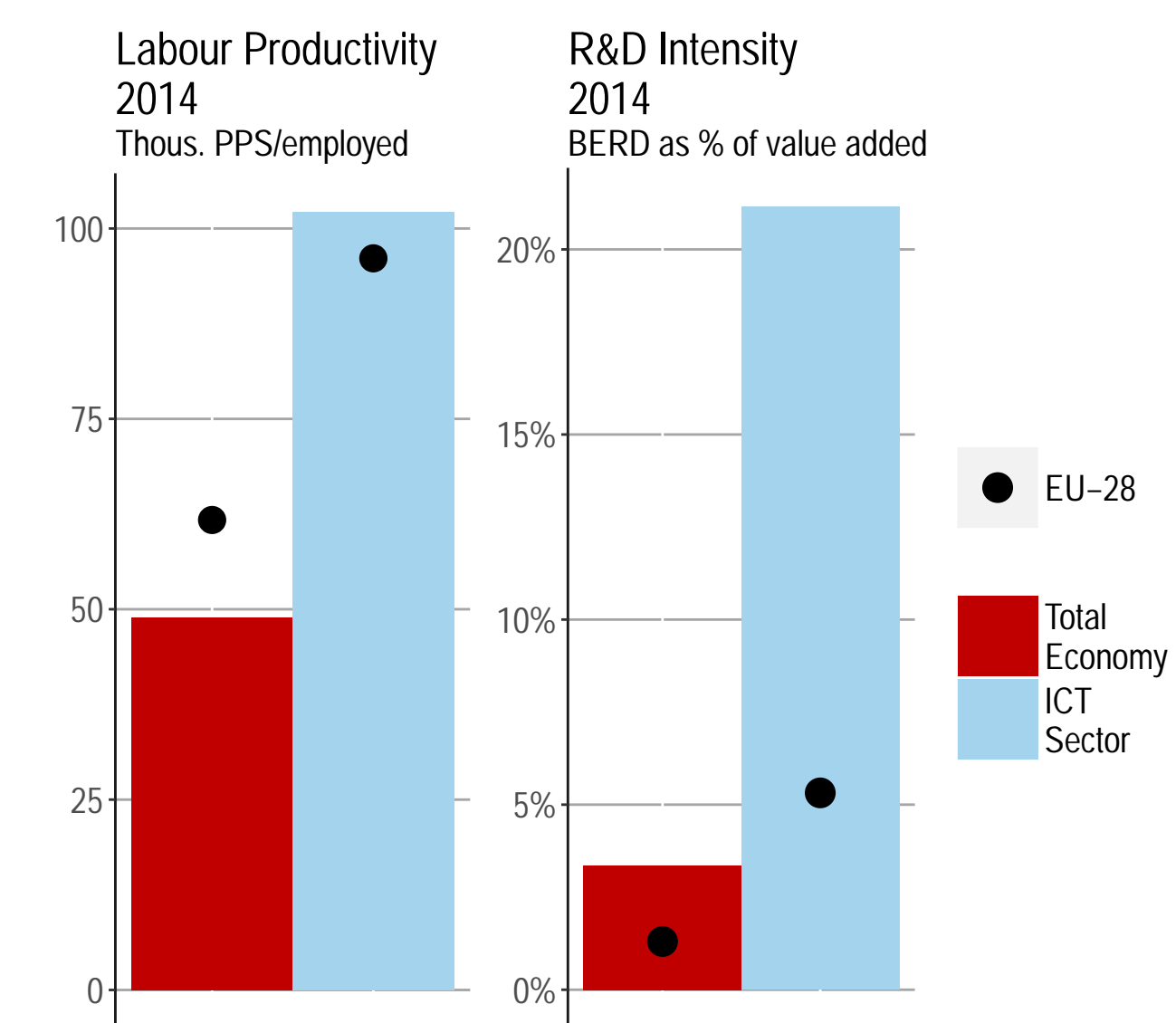
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

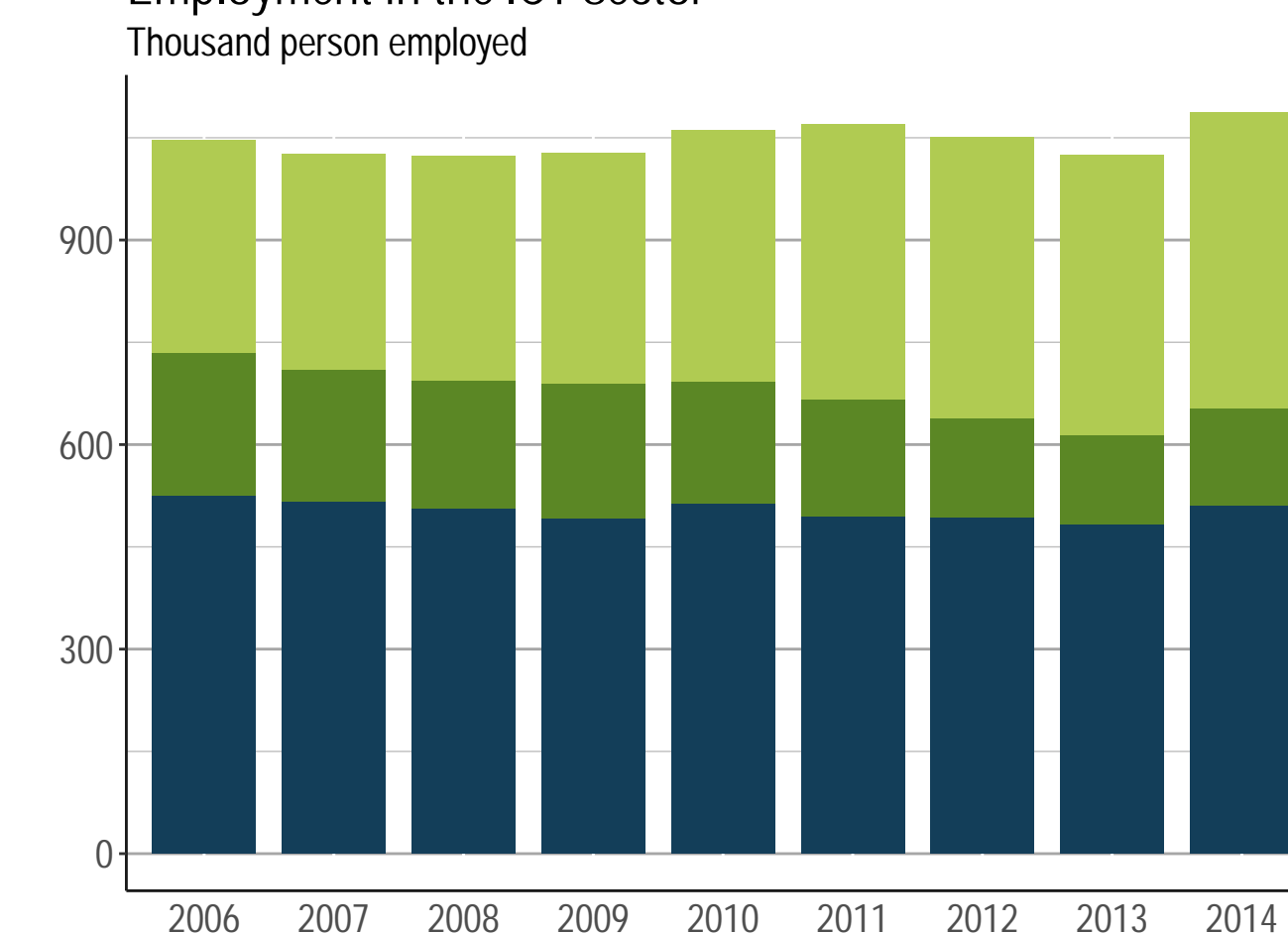
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share KR/EU 2014 <sup>1</sup>	KR2014vs KR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	22269	25142	25849	25692	29761	33706	38240	39432	42064	23.1%	189	133
ICT sector	11965	12451	13219	12808	15650	17260	20064	21353	23494	80.9%	196	114
Manufacturing	10971	11364	11989	11682	14327	15829	18347	19796	21777	190.9%	198	83
Telecommunications	226	343	377	256	315	304	342	345	362	10.9%	160	86
Computer Services	768	744	854	870	1009	1128	1375	1212	1354	9.5%	176	180
ICT sector as a % of Total	53.7%	49.5%	51.1%	49.9%	52.6%	51.2%	52.5%	54.1%	55.9%			

R&D Intensity (BERD as a % of value added)

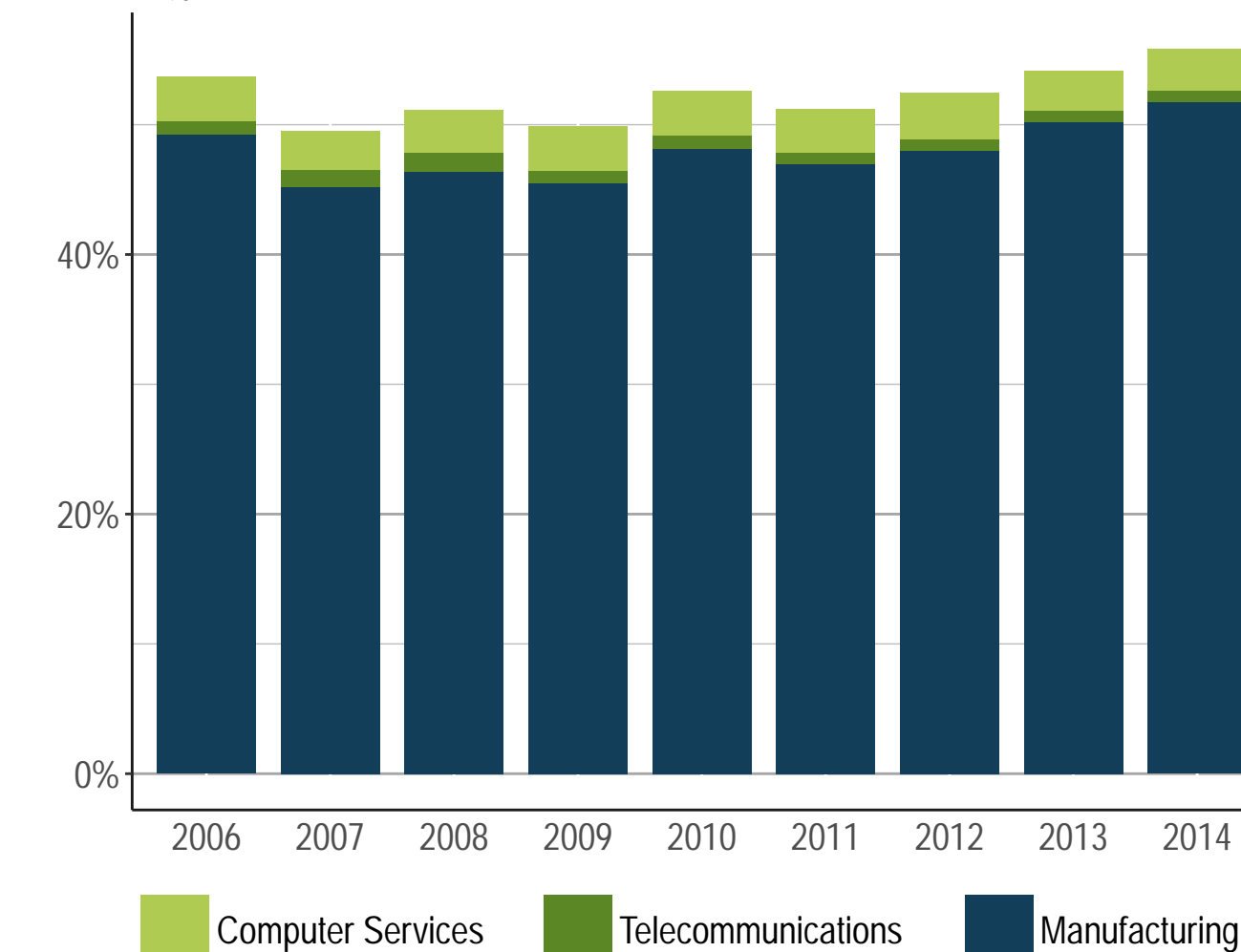
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio KR/EU 2014 <sup>2</sup>	KR2014vs KR2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	2.2	2.3	2.4	2.4	2.6	2.9	3.1	3.3	3.4	(2.57)	153	117
ICT sector	12.8	12.6	13.6	13.6	14.8	16.1	18.2	19.2	21.1	(3.98)	165	103
Manufacturing	19.6	18.7	19.9	19.8	20.4	21.9	24.9	26.4	29.6	(1.36)	151	115
Telecommunications	1.2	1.8	2.2	1.7	2.1	2.2	2.4	2.5	2.5	(1.41)	217	93
Computer Services	4.2	3.8	4.3	4.4	4.9	5.3	6.1	5.4	5.8	(1.26)	139	130



Employment in the ICT sector



ICT share of total BERD in %



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# RUSSIA (RU)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share RU/EU 2014 <sup>1</sup>	RU2014vs RU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1737	1929	2248	2083	2233	2596	2742	2559	2728	19.5%	157	114
ICT sector	42	50	56	59	55	56	61	54	52	9.5%	122	110
Manufacturing	4	4	4	4	4	5	5	5	6	10.6%	157	72
Telecommunications	32	37	40	44	38	37	39	34	30	16.4%	94	92
Computer Services	7	9	12	12	12	13	18	15	16	5.1%	242	139
ICT sector as a % of Total	2.4%	2.6%	2.5%	2.9%	2.4%	2.1%	2.2%	2.1%	1.9%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share RU/EU 2014 <sup>1</sup>	RU2014vs RU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	77376	78352	78688	75717	76568	76402	77145	76979	77138	34.0%	100	101
ICT sector	1088	1059	1049	1018	1031	1012	1047	1026	1002	17.6%	92	108
Manufacturing	221	217	214	198	190	195	196	201	203	30.6%	92	72
Telecommunications	568	557	547	516	517	502	525	506	487	42.9%	86	93
Computer Services	299	285	287	304	323	315	326	319	312	8.0%	104	124
ICT sector as a % of Total	1.4%	1.4%	1.3%	1.3%	1.3%	1.3%	1.4%	1.3%	1.3%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio RU/EU 2014 <sup>2</sup>	RU2014vs RU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	22	25	29	28	29	34	36	33	35	(0.57)	158	113
ICT sector	39	47	54	58	53	55	59	52	52	(0.54)	133	102
Manufacturing	16	19	19	19	22	25	23	23	27	(0.35)	171	101
Telecommunications	57	66	74	84	73	74	74	66	62	(0.38)	110	99
Computer Services	22	30	41	40	39	43	55	48	51	(0.64)	232	112

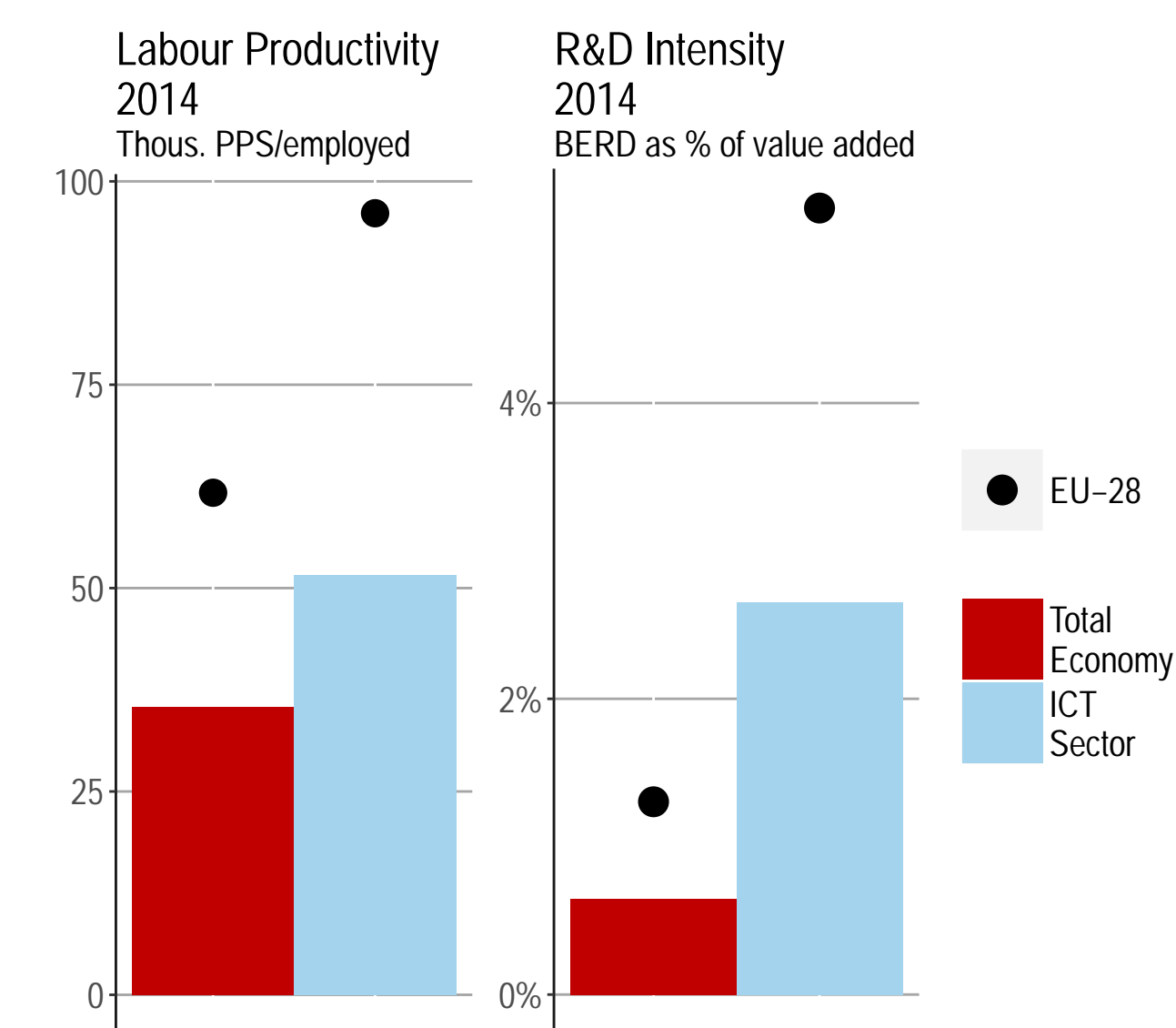
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share RU/EU 2014 <sup>1</sup>	RU2014vs RU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	12419	13832	14772	16263	15271	16183	16727	16376	17682	9.7%	142	133
ICT sector	564	785	638	389	338	691	1180	1159	1371	4.7%	243	114
Manufacturing	509	705	565	337	249	600	880	1005	1092	9.6%	214	83
Telecommunications	15	21	17	8	6	7	217	64	180	5.4%	1227	86
Computer Services	40	59	56	44	84	83	83	90	99	0.7%	244	180
ICT sector as a % of Total	4.5%	5.7%	4.3%	2.4%	2.2%	4.3%	7.1%	7.1%	7.8%			

R&D Intensity (BERD as a % of value added)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio RU/EU 2014 <sup>2</sup>	RU2014vs RU2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	0.7	0.7	0.7	0.8	0.7	0.6	0.6	0.6	0.6	(0.50)	91	117
ICT sector	1.3	1.6	1.1	0.7	0.6	1.2	1.9	2.2	2.7	(0.50)	199	103
Manufacturing	14.3	17.2	13.8	8.9	6.0	12.5	19.4	21.5	19.6	(0.90)	137	115
Telecommunications	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.2	0.6	(0.33)	1301	93
Computer Services	0.6	0.7	0.5	0.4	0.7	0.6	0.5	0.6	0.6	(0.13)	101	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.



# TAIWAN (TW)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share TW/EU 2014 <sup>1</sup>	TW2014vs TW2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	583	636	629	601	682	714	745	755	804	5.7%	138	114
ICT sector	78	86	89	81	97	100	106	112	128	23.4%	164	110
Manufacturing	62	68	71	64	78	81	87	93	109	207.2%	176	72
Telecommunications	10	11	11	10	11	11	11	11	11	5.9%	105	92
Computer Services	6	7	7	7	7	7	8	8	8	2.7%	147	139
ICT sector as a % of Total	13.3%	13.5%	14.1%	13.4%	14.2%	14.0%	14.2%	14.8%	15.9%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share TW/EU 2014 <sup>1</sup>	TW2014vs TW2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	10111	10294	10403	10279	10493	10709	10860	10967	11079	4.9%	110	101
ICT sector	917	913	932	889	925	988	995	983	989	17.4%	108	108
Manufacturing	756	752	769	722	758	813	815	799	800	120.5%	106	72
Telecommunications	43	43	45	48	47	44	43	41	42	3.7%	97	93
Computer Services	118	118	118	119	119	131	137	143	148	3.8%	125	124
ICT sector as a % of Total	9.1%	8.9%	9.0%	8.6%	8.8%	9.2%	9.2%	9.0%	8.9%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio TW/EU 2014 <sup>2</sup>	TW2014vs TW2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	58	62	60	58	65	67	69	69	73	(1.18)	126	113
ICT sector	85	94	95	91	104	101	107	114	129	(1.34)	152	102
Manufacturing	82	91	92	88	103	100	107	116	136	(1.72)	166	101
Telecommunications	240	250	241	214	231	254	261	265	260	(1.60)	108	99
Computer Services	48	56	59	57	61	57	57	56	56	(0.71)	117	112

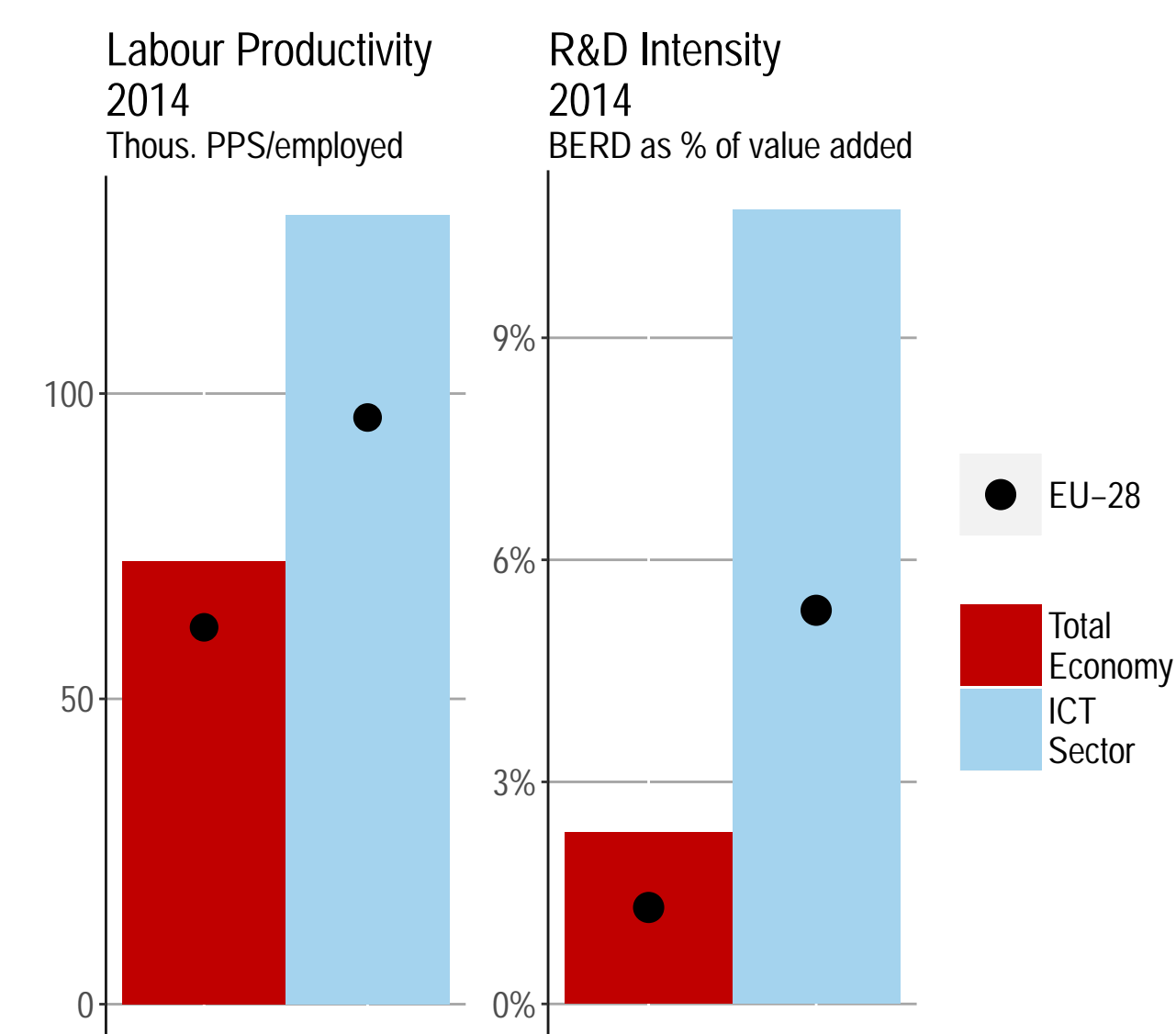
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share TW/EU 2014 <sup>1</sup>	TW2014vs TW2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	9565	10888	11897	11955	13684	15050	16328	17153	18624	10.2%	195	133
ICT sector	6755	7794	8578	8711	9989	11081	11902	12602	13713	47.2%	203	114
Manufacturing	6317	7353	8057	8175	9372	10428	11248	11880	12965	113.7%	205	83
Telecommunications	139	139	152	152	187	194	198	192	188	5.6%	135	86
Computer Services	299	302	369	383	431	458	455	530	560	3.9%	188	180
ICT sector as a % of Total	70.6%	71.6%	72.1%	72.9%	73.0%	73.6%	72.9%	73.5%	73.6%			

R&D Intensity (BERD as a % of value added)

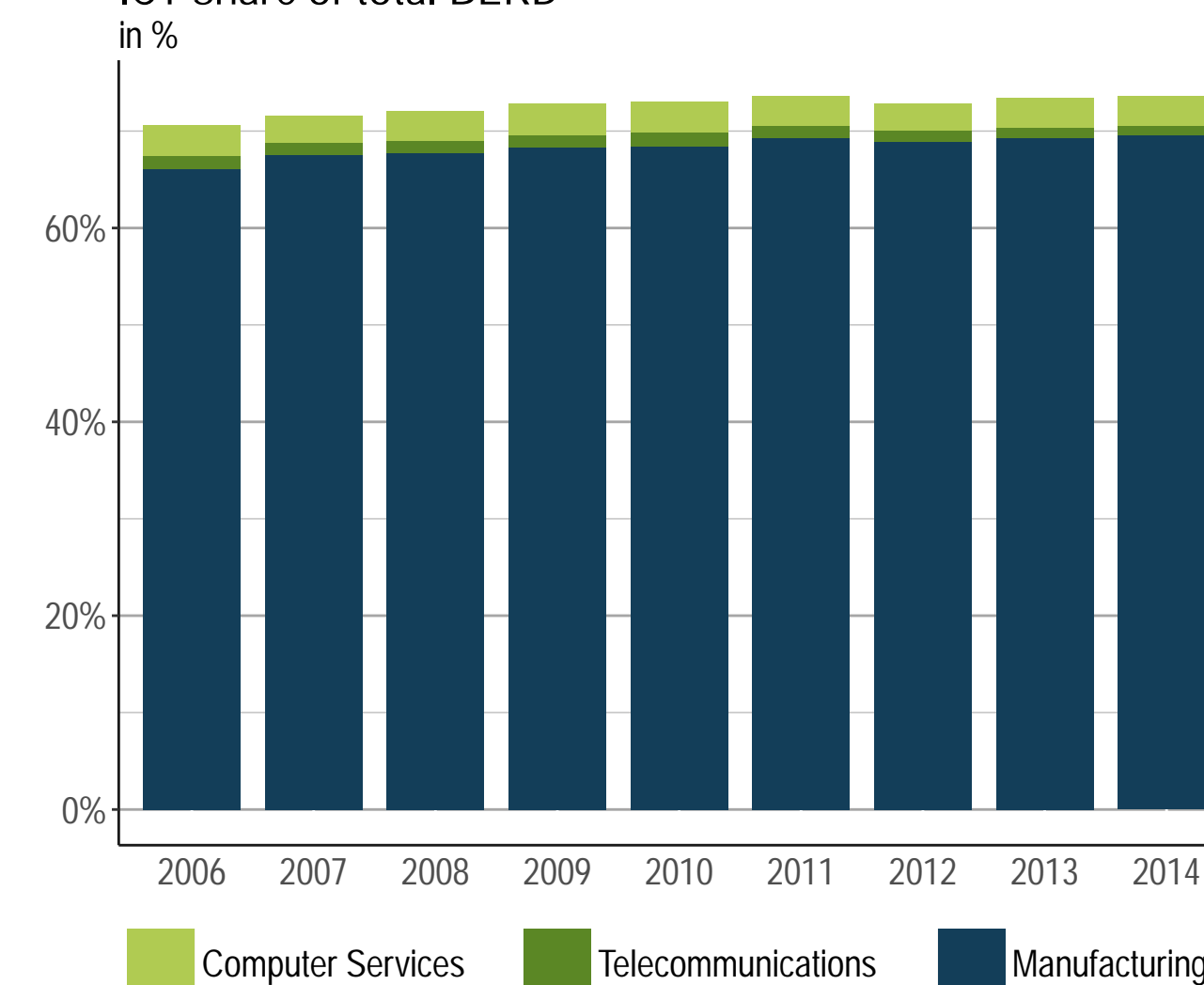
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio TW/EU 2014 <sup>2</sup>	TW2014vs TW2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1.6	1.7	1.9	2.0	2.0	2.1	2.2	2.3	2.3	(1.78)	141	117
ICT sector	8.7	9.1	9.7	10.8	10.3	11.1	11.2	11.3	10.7	(2.02)	124	103
Manufacturing	10.2	10.8	11.4	12.8	12.0	12.8	12.9	12.8	11.9	(0.55)	117	115
Telecommunications	1.3	1.3	1.4	1.5	1.7	1.7	1.8	1.8	1.7	(0.95)	129	93
Computer Services	5.3	4.6	5.3	5.6	5.9	6.1	5.8	6.6	6.7	(1.45)	128	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

# UNITED STATES (US)

## Economic and industry trends

Value added (PPS bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share US/EU 2014 <sup>1</sup>	US2014vs US2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	11278	11748	11497	10848	11412	11706	12219	12298	12909	92.3%	114	114
ICT sector	588	622	621	580	606	612	628	646	683	125.0%	116	110
Manufacturing	126	122	119	107	117	115	112	110	113	214.7%	90	72
Telecommunications	225	246	246	228	228	219	220	233	242	131.1%	108	92
Computer Services	238	253	256	245	261	278	296	303	328	106.1%	138	139
ICT sector as a % of Total	5.2%	5.3%	5.4%	5.3%	5.3%	5.2%	5.1%	5.3%	5.3%			

Employment (thous. person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share US/EU 2014 <sup>1</sup>	US2014vs US2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	152833	154194	153346	146932	145483	146849	149503	151685	154526	68.2%	101	101
ICT sector	3946	4014	4058	3862	3818	3877	3971	4058	4139	72.8%	105	108
Manufacturing	825	797	777	694	673	683	676	654	642	96.7%	78	72
Telecommunications	1009	1052	1031	984	926	900	875	871	873	76.9%	86	93
Computer Services	2112	2166	2250	2183	2219	2294	2420	2532	2624	67.5%	124	124
ICT sector as a % of Total	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.7%	2.7%	2.7%			

Productivity of labour (thous. PPS / person employed)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio US/EU 2014 <sup>2</sup>	US2014vs US2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	74	76	75	74	78	80	82	81	84	(1.35)	113	113
ICT sector	149	155	153	150	159	158	158	159	165	(1.72)	111	102
Manufacturing	152	154	153	155	174	169	166	169	175	(2.22)	115	101
Telecommunications	223	234	239	231	246	243	252	268	278	(1.70)	125	99
Computer Services	113	117	114	112	118	121	122	119	125	(1.57)	111	112

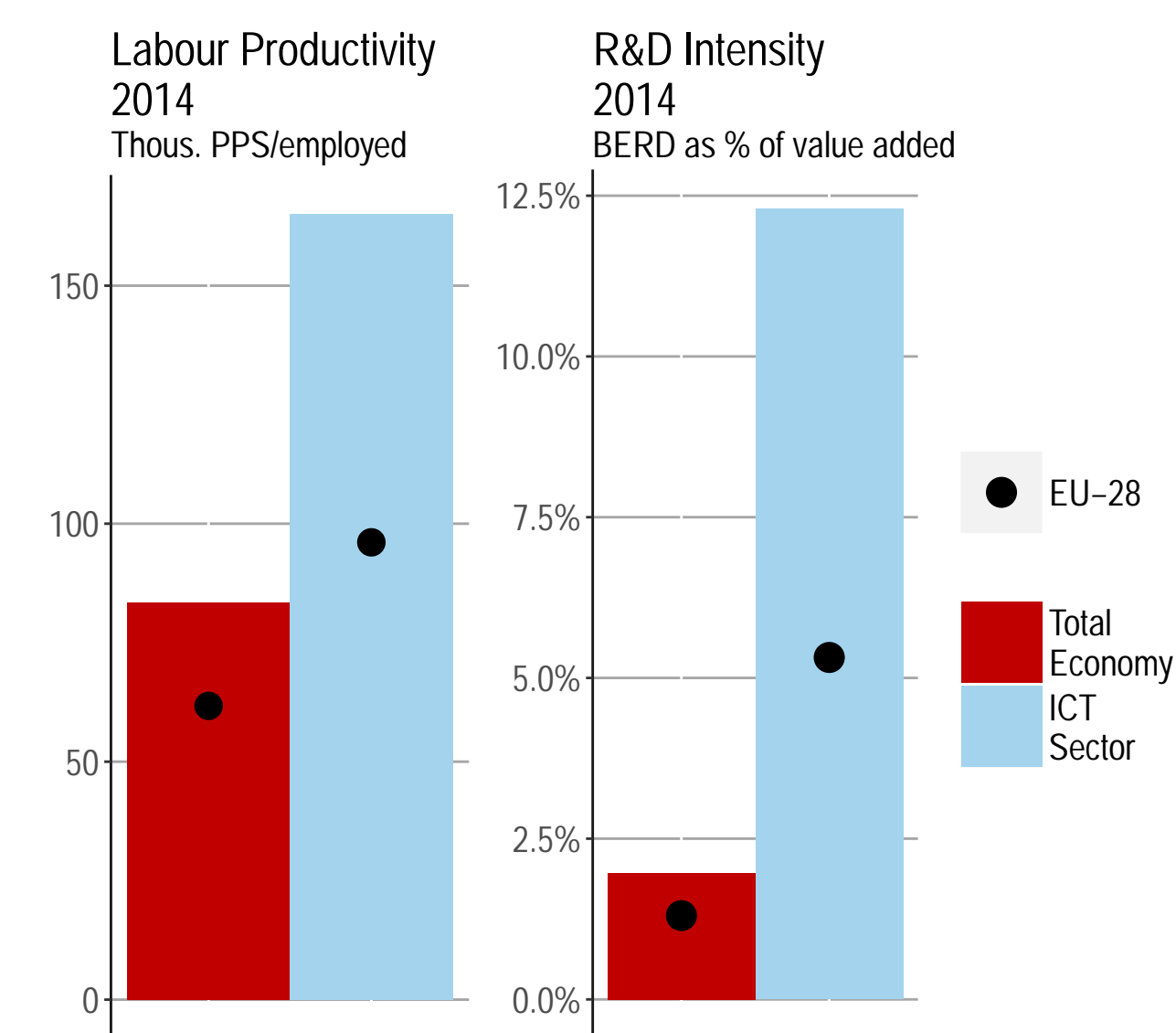
## R&D performance

Business expenditure in R&D (BERD – PPS mln)

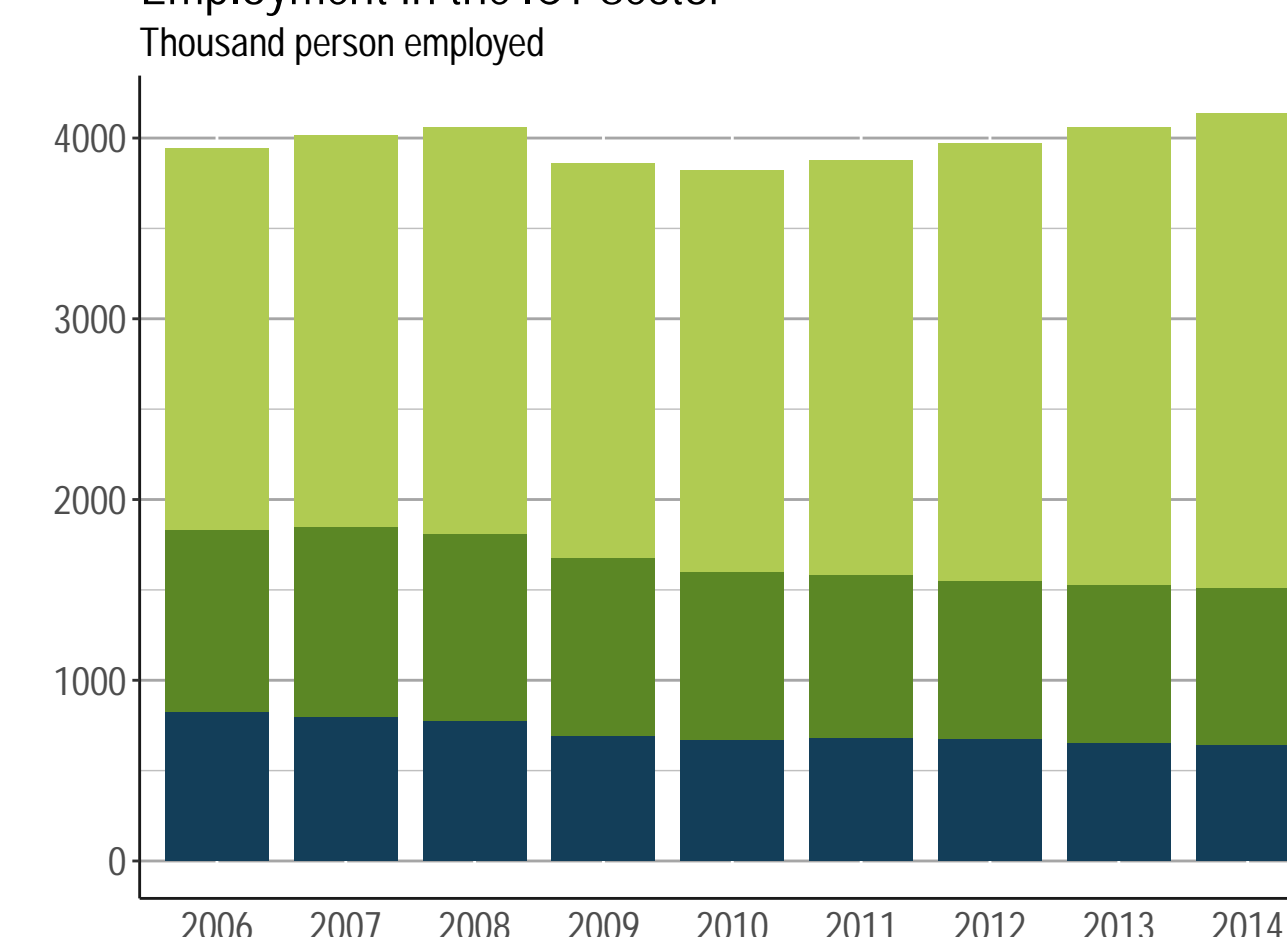
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Share US/EU 2014 <sup>1</sup>	US2014vs US2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	201586	218491	227064	212452	212749	221859	228599	238031	253540	139.0%	126	133
ICT sector	62364	62682	70295	62614	64451	69329	71201	76212	83944	288.9%	135	114
Manufacturing	31241	30906	35138	31257	33755	35148	37143	38910	43100	377.8%	138	83
Telecommunications	1739	2648	1315	1125	1425	1627	2136	2244	2794	83.7%	161	86
Computer Services	29384	29127	33842	30232	29271	32553	31922	35057	38050	265.8%	130	180
ICT sector as a % of Total	30.9%	28.7%	31.0%	29.5%	30.3%	31.2%	31.1%	32.0%	33.1%			

R&D Intensity (BERD as a % of value added)

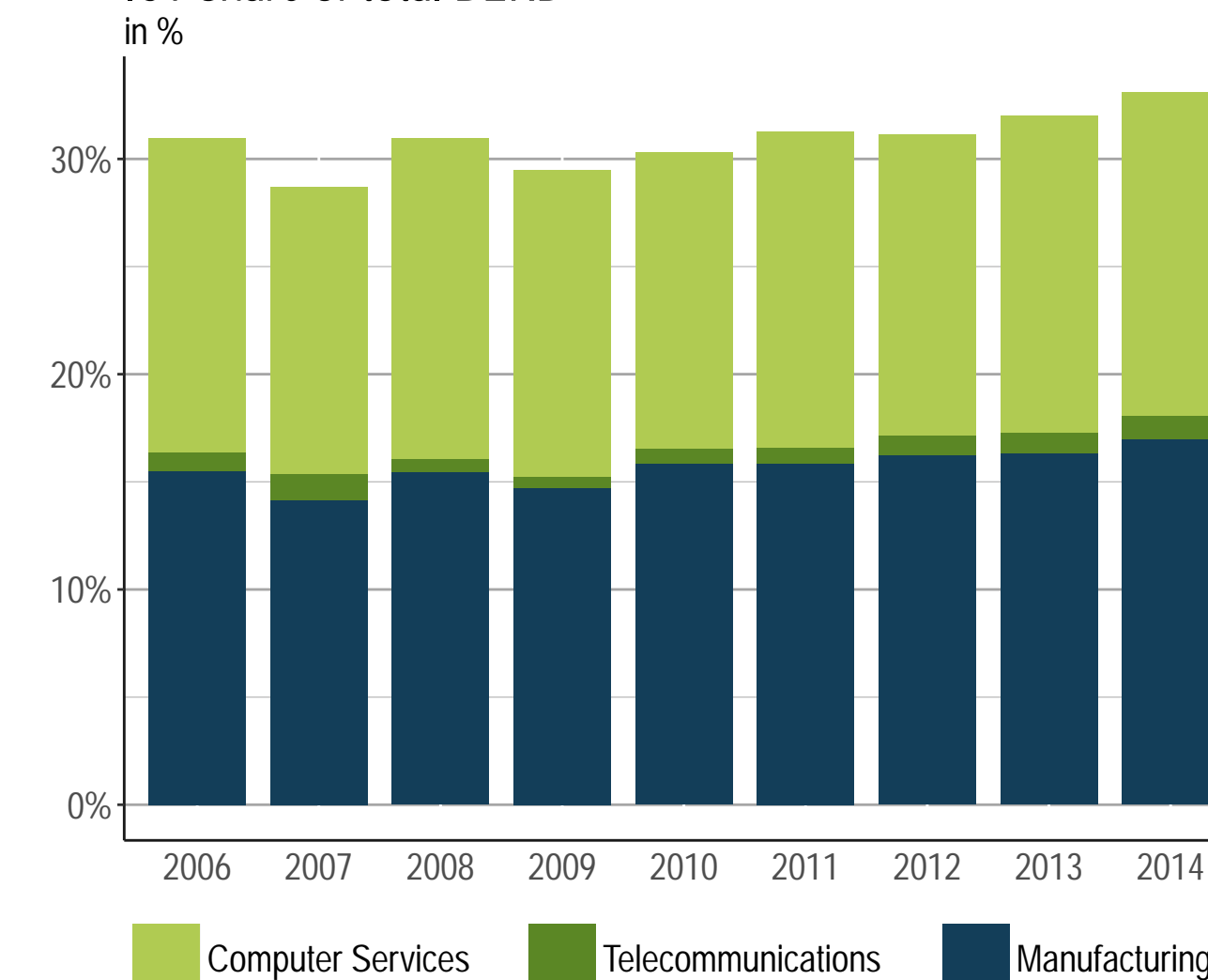
	2006	2007	2008	2009	2010	2011	2012	2013	2014	Ratio US/EU 2014 <sup>2</sup>	US2014vs US2006 <sup>3</sup>	EU2014vs EU2006 <sup>3</sup>
Total economy	1.8	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.0	(1.51)	110	117
ICT sector	10.6	10.1	11.3	10.8	10.6	11.3	11.3	11.8	12.3	(2.31)	116	103
Manufacturing	24.9	25.2	29.6	29.1	28.8	30.5	33.1	35.2	38.3	(1.76)	154	115
Telecommunications	0.8	1.1	0.5	0.5	0.6	0.7	1.0	1.0	1.2	(0.64)	149	93
Computer Services	12.3	11.5	13.2	12.3	11.2	11.7	10.8	11.6	11.6	(2.50)	94	130



Employment in the ICT sector



ICT share of total BERD



Note: All monetary variables are expressed in Purchasing Power Standards (PPS) at current prices.

1) Shares correspond to the percentage ratio between the value of a variable 'x' in country 'i' and in the EU economy [= x(i)/x(EU)], the EU being equal to 100%.

2) Ratio portrays the performance vs. the EU aggregate. They are computed as a simple ratio, the EU level being equal to 1.

3) 2014 vs 2006 gives an indexed growth rate computed with 2006=100.

## **References**

The 2017 PREDICT Report

Both the report and the database can be accessed through the following web page:

<https://ec.europa.eu/jrc/en/predict/ict-sector-analysis-2017>



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Publications Office

doi:10.2760/094005

ISBN 978-92-79-77243-6