



NATIONAL SURVEY OF RESEARCH COMMERCIALISATION 2010 AND 2011

KEY POINTS (72 institutions)

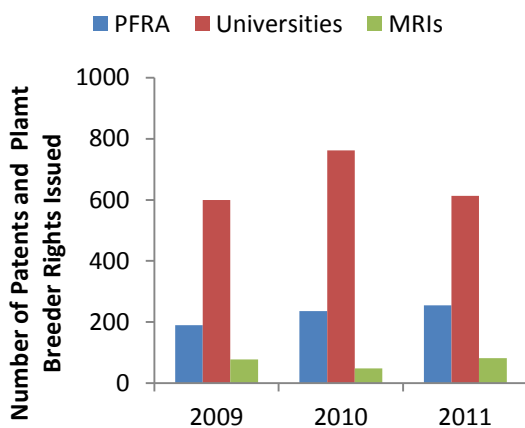
INTELLECTUAL PROPERTY ACTIVITY

- The number of invention disclosures increased by 14% from 1,498 in 2009 to 1,705 in 2011.
- The number of patent and plant breeder rights filing decreased by 9% from 1,938 in 2009 to 1,758 in 2011.
- The total stock of patents and plant breeder's rights increased by 6% from 10,422 in 2009 to 11,004 in 2011.
- The number of patents and plant breeder rights issued was 866 in 2009, 1,046 in 2010 and 948 in 2011.

Table 1: Number of patents and plant breeder rights issued by sector, 2009-2011

	2009	2010	2011
PFRA	189	236	254
Universities	600	762	613
MRIs	77	48	81
Total	866	1046	948

Figure 1: Number of patents and plant breeder rights issued by sector, 2009-2011



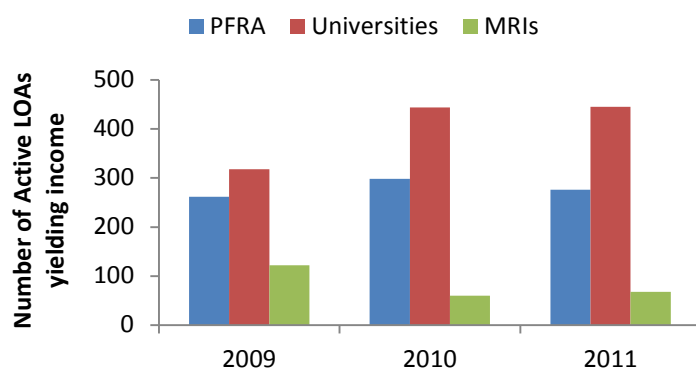
LICENCES, OPTIONS AND ASSIGNMENTS (LOAs)

- Adjusted LOA income was \$337m in 2009, \$162m in 2010 and \$121m in 2011.
- The number of active LOAs increased from 1,838 in 2009 to 2,873 in 2011.
- The number of LOAs yielding income increased from 702 in 2009 to 789 in 2011. However, the number of active LOAs yielding income decreased from 802 in 2010 to 789 in 2011.

Table 2: Number of LOAs yielding income by sector, 2009-2011

	2009	2010	2011
PFRA	262	298	276
Universities	318	444	445
MRIs	122	60	68
Total	702	802	789

Figure 2: Number of LOAs yielding income by sector, 2009-2011



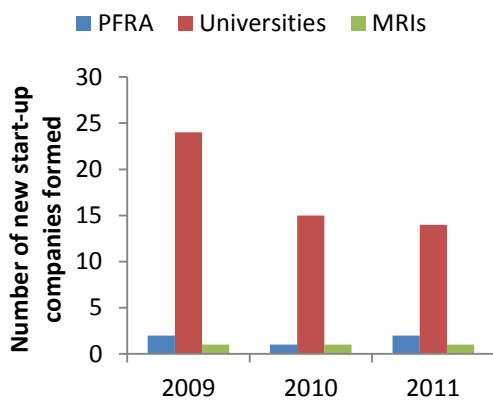
START-UP COMPANY ACTIVITY

- Capital raising for research commercialisation activities increased from \$148m in 2009 to \$165m in 2011.
- Operational start-up companies decreased from 216 in 2009 to 199 in 2011.
- New start-up company formation declined from 27 in 2009 to 17 in 2011.

Table 3: Number of new start-up companies formed by sector, 2009-2011

	2009	2010	2011
PFRA	2	1	2
Universities	24	15	14
MRIs	1	1	1
Total	27	17	17

Figure 3: Number of new start-up companies formed by sector, 2009-2011



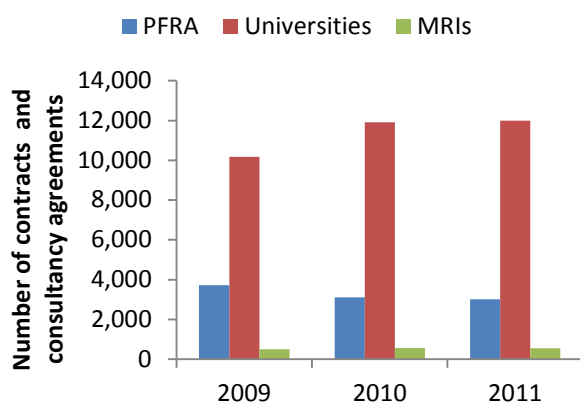
CONTRACTS, CONSULTANCIES AND DIRECT SALES

- The total number of direct sales transactions declined from 14,803 in 2009 to 14,642 in 2011.
- The total number of research contracts and consultancies was 14,397 in 2009, 15,587 in 2010 and 15,570 in 2011.

Table 4: Number of contracts and consultancy agreements entered into by sector, 2009-2011

	2009	2010	2011
PFRA	3,718	3,112	3,022
Universities	10,171	11,911	11,990
MRIs	508	564	558
Total	14,397	15,587	15,570

Figure 4: Number of contracts and consultancy agreements entered into by sector, 2009-2011



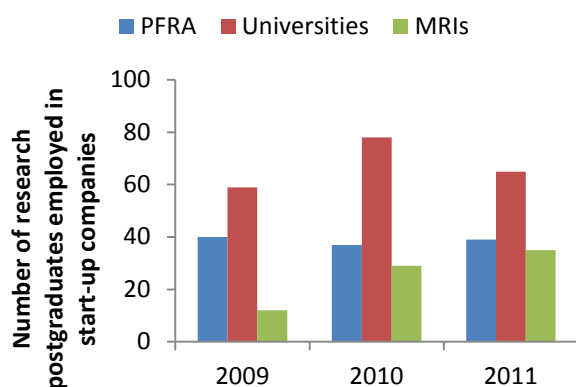
SKILLS DEVELOPMENT AND KNOWLEDGE EXCHANGE ACTIVITY

- The number of institutions offering in-house/or external training decreased from 48 in 2009 to 42 in 2011.
- The number of in-house training participants increased from 3,887 in 2009 to 5,491 in 2011.
- The number of research postgraduates employed in start-up companies was 111 in 2009, 144 in 2010 and 139 in 2011.

Table 5: Number of research postgraduates employed in start-up companies by sector, 2009-2011

	2009	2010	2011
PFRA	40	37	39
Universities	59	78	65
MRIs	12	29	35
Total	111	144	139

Figure 5: Number of research postgraduates employed in start-up companies by sector, 2009-2011



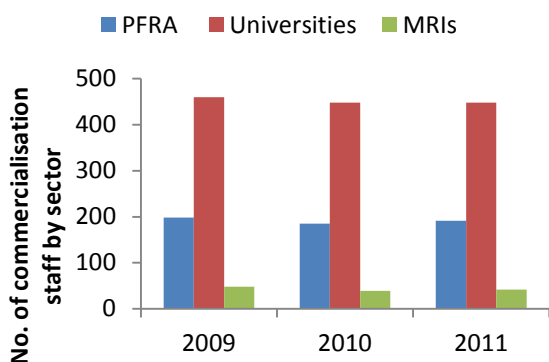
RESOURCES FOR RESEARCH COMMERCIALISATION

- Net commercialisation costs, including marketing, legal, staff and non-staff costs increased from \$121m in 2009 to \$134m in 2011.
- The total number of commercialisation staff, which includes commercialisation legal, marketing and industry engagement staff decreased from 706 in 2009, 672 in 2010 and 681 in 2011.

Table 6: Total number of commercialisation staff by sector, 2009-2011

	2009	2010	2011
PFRA	198	185	191
Universities	460	448	448
MRIs	48	39	42
Total	706	672	681

Figure 6: Total number of commercialisation staff by sector, 2009-2011



INTERNATIONAL COMPARISONS

INTELLECTUAL PROPERTY ACTIVITY

Number of Invention Disclosures per \$US100m research expenditure

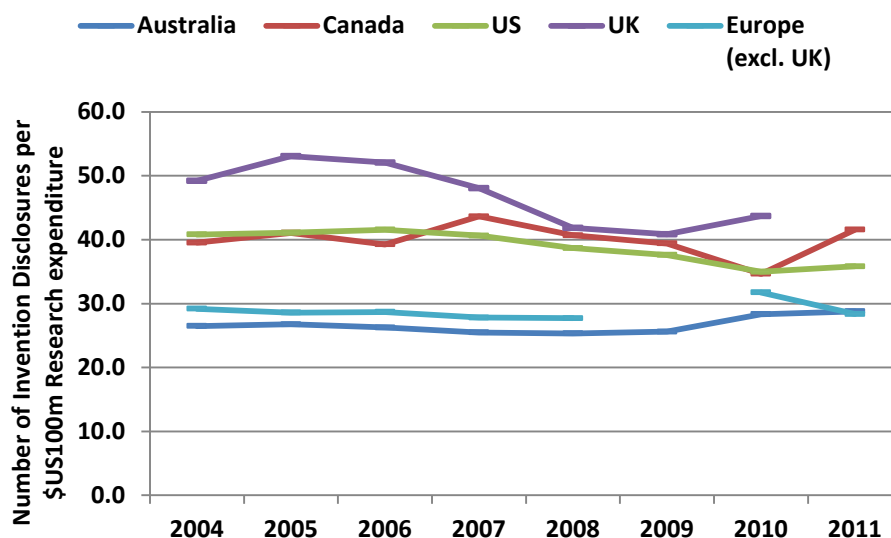
- The number of invention disclosures per \$US100m of research expenditure by Australian institutions has averaged at 27 since 2004 to 2011, lower than the US at 39; and Canada at 40. From 2004 to 2010, the number of invention disclosures per \$US100m of research expenditure by UK institutions has averaged at 47.
- Australia and the US have remained relatively constant while Canada and the UK have followed an upward trend on the number of invention disclosures per \$US100m of research expenditure in recent years.

Table 7: Number of Invention Disclosures per \$US100m research expenditure, 2004-2011

Year	Australia	Canada	US	UK	Europe (excl. UK)
2004	26.5	39.5	40.8	49.2	29.2
2005	26.8	41.1	41.1	53.1	28.6
2006	26.3	39.3	41.6	52.1	28.7
2007	25.5	43.6	40.6	48.1	27.8
2008	25.3	40.7	38.7	41.8	27.7
2009	25.6	39.4	37.6	40.8	-
2010	28.3	34.7	35.0	43.7	31.7
2011	28.8	41.6	35.8	-	28.4

Note: (-) No data available

Figure 7: Number of Invention Disclosures per \$US100m research expenditure, 2004-2011



Number of US Patents issued per \$US100m research expenditure, 2004-2011

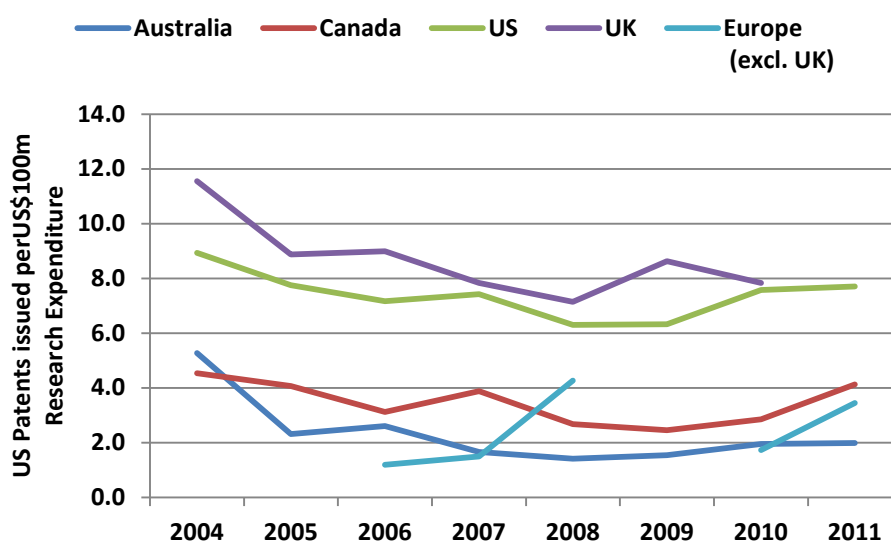
- After a significant fall from 2004 to 2005, the number of US patents issued to Australian institutions per \$US100m of research expenditure has remained relatively constant over the years.
- The numbers of US patents issued to Canadian and Europe (excluding UK) institutions per \$US100m of research expenditure have slowly trended upward over recent years.
- The number of US patents issued to US institutions per \$US100m of research expenditure has remained relatively steady over the recent years (i.e. 2010 and 2011) while the number of patents issued to UK institutions per \$US100 of research expenditure has trended downward in the recent years (i.e. 2009 and 2010).

Table 8: US Patents issued per \$US100m research expenditure, 2004-2011

Year	Australia	Canada	US	UK	Europe (excl. UK)
2004	5.3	4.5	8.9	11.6	-
2005	2.3	4.1	7.7	8.9	-
2006	2.6	3.1	7.2	9.0	1.2
2007	1.7	3.9	7.4	7.8	1.5
2008	1.4	2.7	6.3	7.1	4.3
2009	1.5	2.5	6.3	8.6	-
2010	2.0	2.9	7.6	7.8	1.7
2011	2.0	4.1	7.7	-	3.5

Note: (-) No data available

Figure 8: US Patents issued per \$US100m research expenditure, 2004-2011



LICENCES, OPTIONS AND ASSIGNMENTS (LOAs)

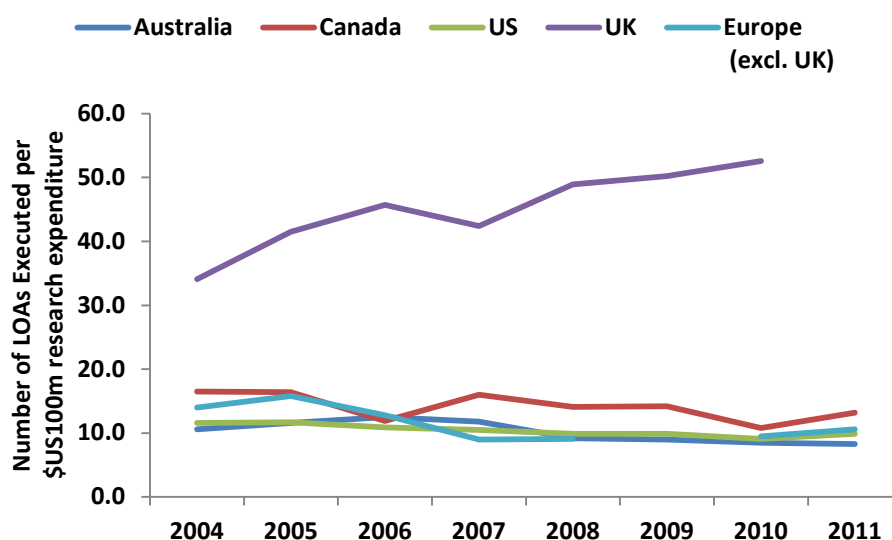
- The number of LOAs executed per \$US100m of research expenditure by Australia dropped from 10.6 in 2004 to 8.3 in 2011. With the exception of the UK, a similar downward trend is reported for Canada, US, and Europe over the same period.
- On the average, the number of LOAs executed per \$US100m of research expenditure by Australia was 10 from 2004 to 2011.

Table 9: Number of LOAs Executed per \$US100m research expenditure, 2004-2011

Year	Australia	Canada	US	UK	Europe (excl. UK)
2004	10.6	16.5	11.6	34.1	14.0
2005	11.6	16.4	11.7	41.5	15.8
2006	12.5	11.9	10.9	45.7	12.8
2007	11.8	16.0	10.5	42.4	9.0
2008	9.2	14.1	9.9	48.9	9.1
2009	9.0	14.2	9.9	50.2	-
2010	8.5	10.8	9.1	52.6	9.5
2011	8.3	13.2	9.9	-	10.6

Note: (-) No data available

Figure 9: Number of LOAs Executed per \$US100m research expenditure, 2004-2011



START-UP COMPANY ACTIVITY

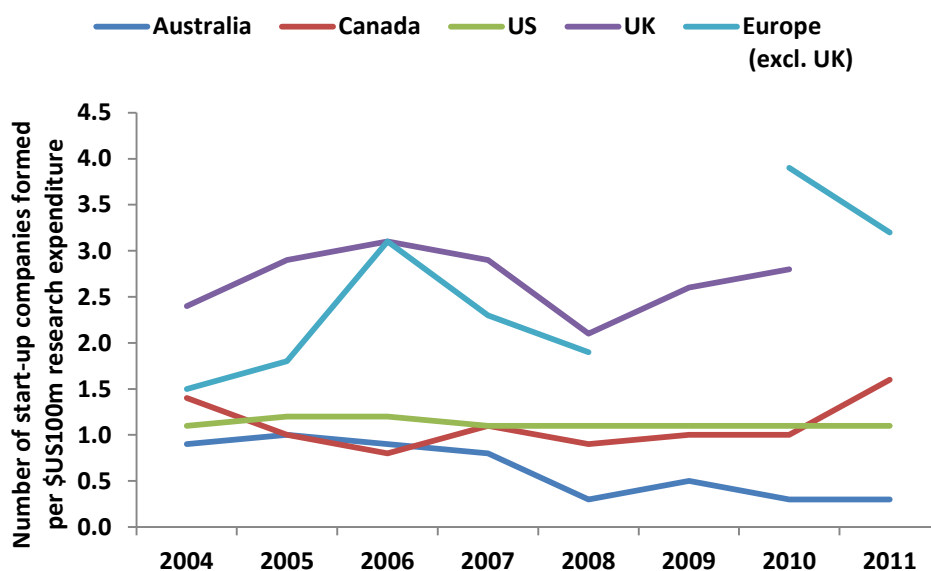
- Australian start-up companies formed per \$US100m of research expenditure have gradually declined from 0.9 in 2004 to 0.3 in 2011. Overall, Australia has remained relatively constant on the rate of start-up company formation over recent years.
- The US has maintained a stable rate of start-up company formation per \$US 100m of research expenditure at a rate of around 1.1 over the years.
- Canada and the UK have demonstrated an upward trend on the rate of start-up company formation per \$US100m of research expenditure over recent years while Europe (excluding UK) was in the opposite direction.

Table 10: Number of start-up companies formed per \$US100m research expenditure, 2004-2011

Year	Australia	Canada	US	UK	Europe (excl. UK)
2004	0.9	1.4	1.1	2.4	1.5
2005	1.0	1.0	1.2	2.9	1.8
2006	0.9	0.8	1.2	3.1	3.1
2007	0.8	1.1	1.1	2.9	2.3
2008	0.3	0.9	1.1	2.1	1.9
2009	0.5	1.0	1.1	2.6	-
2010	0.3	1.0	1.1	2.8	3.9
2011	0.3	1.6	1.1	-	3.2

Note: (-) No data available

Figure 10: Number of start-up companies formed per \$US100m research expenditure, 2004-2011



TIME SERIES DATA 2000-2011 (59 institutions)

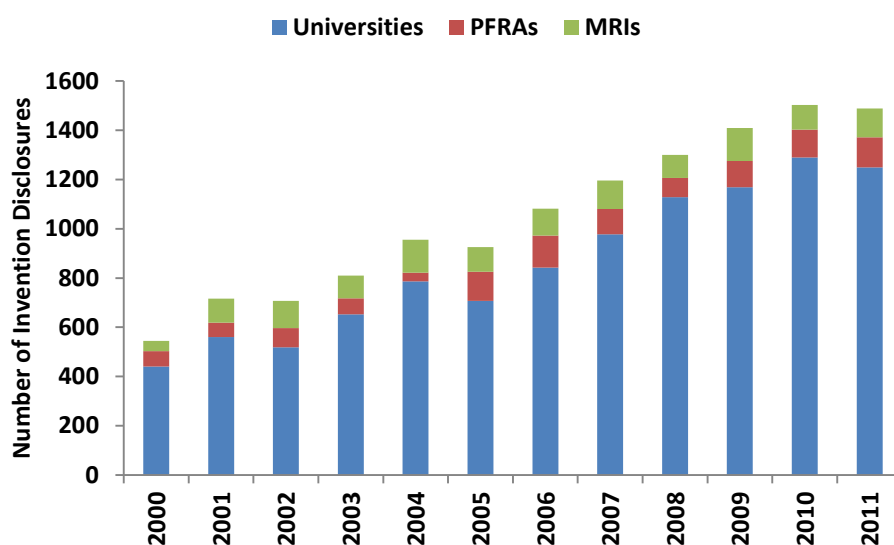
INTELLECTUAL PROPERTY ACTIVITY

- The number of invention disclosures has increased by 173%, from 544 in 2000 to 1,489 in 2011. Overall, there was a steady increase in invention disclosures across all institution types with the highest share of contribution from universities.
- The total number of new patent and plant breeder right applications filed in Australia and the US has increased by 13%, from 587 in 2000 to 664 in 2011.
- The number of patents and plant breeder rights issued worldwide has increased by 74%, from 524 in 2000 to 914 in 2011.

Table 11: Number of invention disclosures by sector, 2000-2011

Year	Universities	PFRAs	MRIs	TOTAL
2000	441	62	41	544
2001	560	59	97	716
2002	519	77	111	707
2003	652	65	93	810
2004	786	35	135	956
2005	707	119	100	926
2006	842	130	109	1081
2007	977	103	116	1196
2008	1129	77	94	1300
2009	1169	106	134	1409
2010	1289	114	100	1503
2011	1249	123	117	1489

Figure 11: Number of invention disclosures by sector, 2000-2011



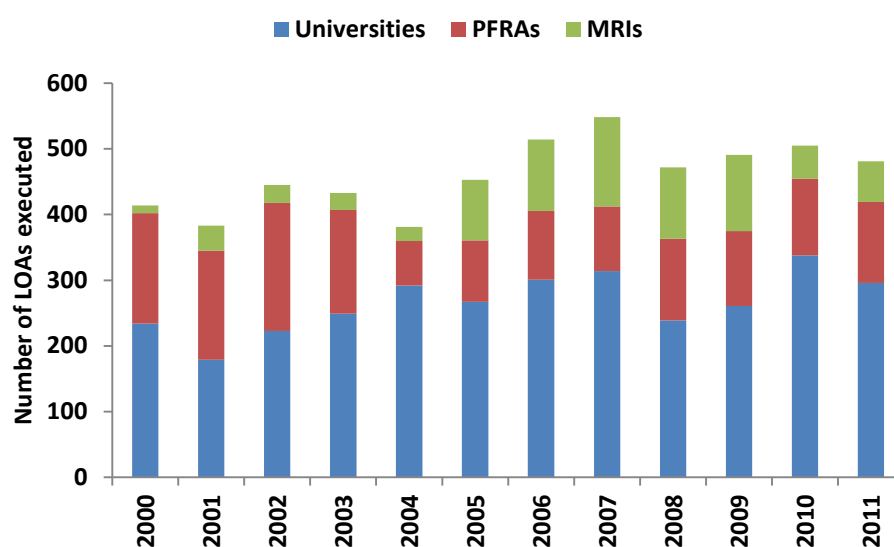
LICENCES, OPTIONS AND ASSIGNMENTS (LOAs)

- The number of LOAs executed per annum has increased by 16%, from 414 in 2000 to 481 in 2011. The university sector recovered after sharp drops in 2008 and 2009, to a record high of 338 LOAs executed in 2010. While PFRAs remained stable, the MRI experienced a 47% decline in 2011 compared to 2009.
- The number of LOAs yielding income per annum has increased by 57% from 489 in 2000 to 766 in 2011.
- Adjusted LOA income in constant 2011 prices has dropped by 35% from \$146m in 2000 to \$95m in 2011.

Table 12: Number of LOAs executed by sector, 2000-2011

Year	Universities	PFRAs	MRIs	TOTAL
2000	234	168	12	414
2001	179	166	38	383
2002	223	195	27	445
2003	249	158	26	433
2004	292	68	21	381
2005	267	94	93	453
2006	301	105	109	515
2007	314	99	136	549
2008	239	124	109	472
2009	261	114	116	491
2010	338	117	50	505
2011	296	123	62	481

Figure 12: Number of LOAs executed by sector, 2000-2011



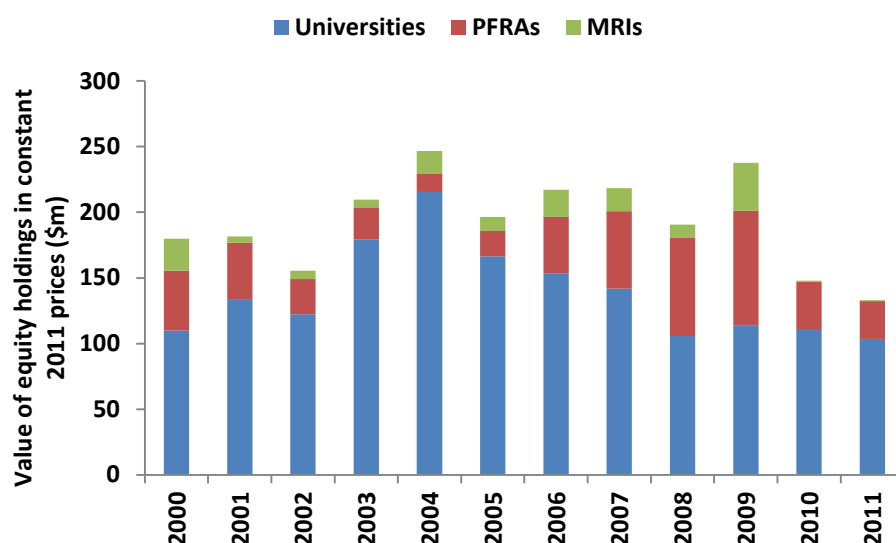
START-UP COMPANY ACTIVITY

- Start-up company formation has fallen by 68% from 47 in 2000 to 15 in 2011. The highest start-up company formation was recorded in 2001 at 61 start-up companies formed.
- The number of start-up companies operational with institutional equity increased from 69 in 2000 to 163 in 2007. However, the number has been steadily dropping since 2008.
- The value of equity holdings for university sector has remained relatively consistent since 2008 with an average of \$108m at 2011 prices. The large increases were from PFRAs, mainly from CSIRO in 2008 and 2009 but were not repeated in 2010 and 2011 and reported only \$29m in 2011. The MRIs recorded their lowest level of equity holding at just \$1m in 2010 and 2011.

Table 13: Value of equity holdings in constant 2011 prices (\$m) by sector, 2000-2011

Year	Universities	PFRAs	MRIs	TOTAL
2000	110	46	24	180
2001	133	44	5	182
2002	122	27	6	156
2003	179	24	6	210
2004	215	14	17	247
2005	167	19	11	197
2006	154	43	21	217
2007	142	59	18	218
2008	106	75	10	191
2009	114	88	36	238
2010	110	37	1	148
2011	103	29	1	133

Figure 13: Value of equity holdings in constant 2011 prices (\$m) by sector, 2000-2011



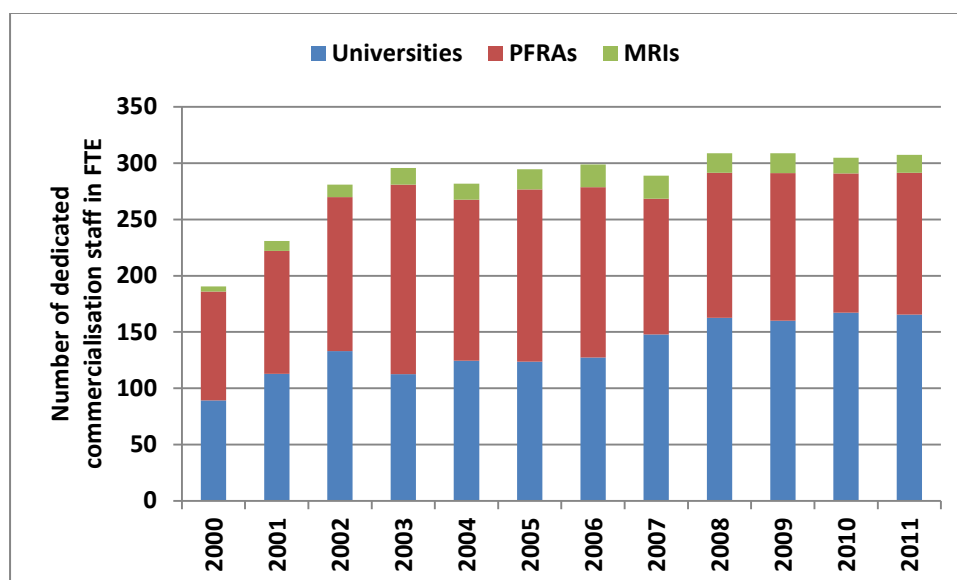
COMMERCIALISATION STAFF

- Over the period 2000 to 2011, the total level of dedicated commercialisation staff has increased by 61%. The level grew rapid from 191 FTE in 2000 to 296 FTE in 2003 and has remained relatively stable to 2011 at 307 FTE.

Table 14: Number of dedicated commercialisation staff in FTE by sector, 2000-2011

Year	Universities	PFRAs	MRIs	TOTAL
2000	89	97	5	191
2001	113	109	9	231
2002	133	137	11	281
2003	113	168	15	296
2004	125	143	14	282
2005	124	153	18	295
2006	128	151	20	299
2007	148	121	21	289
2008	163	129	17	309
2009	160	131	18	309
2010	167	124	14	305
2011	165	126	16	307

Figure 14: Number of dedicated commercialisation staff by sector, 2000-2011



Source: National Survey of Research Commercialisation, 2010-2011

