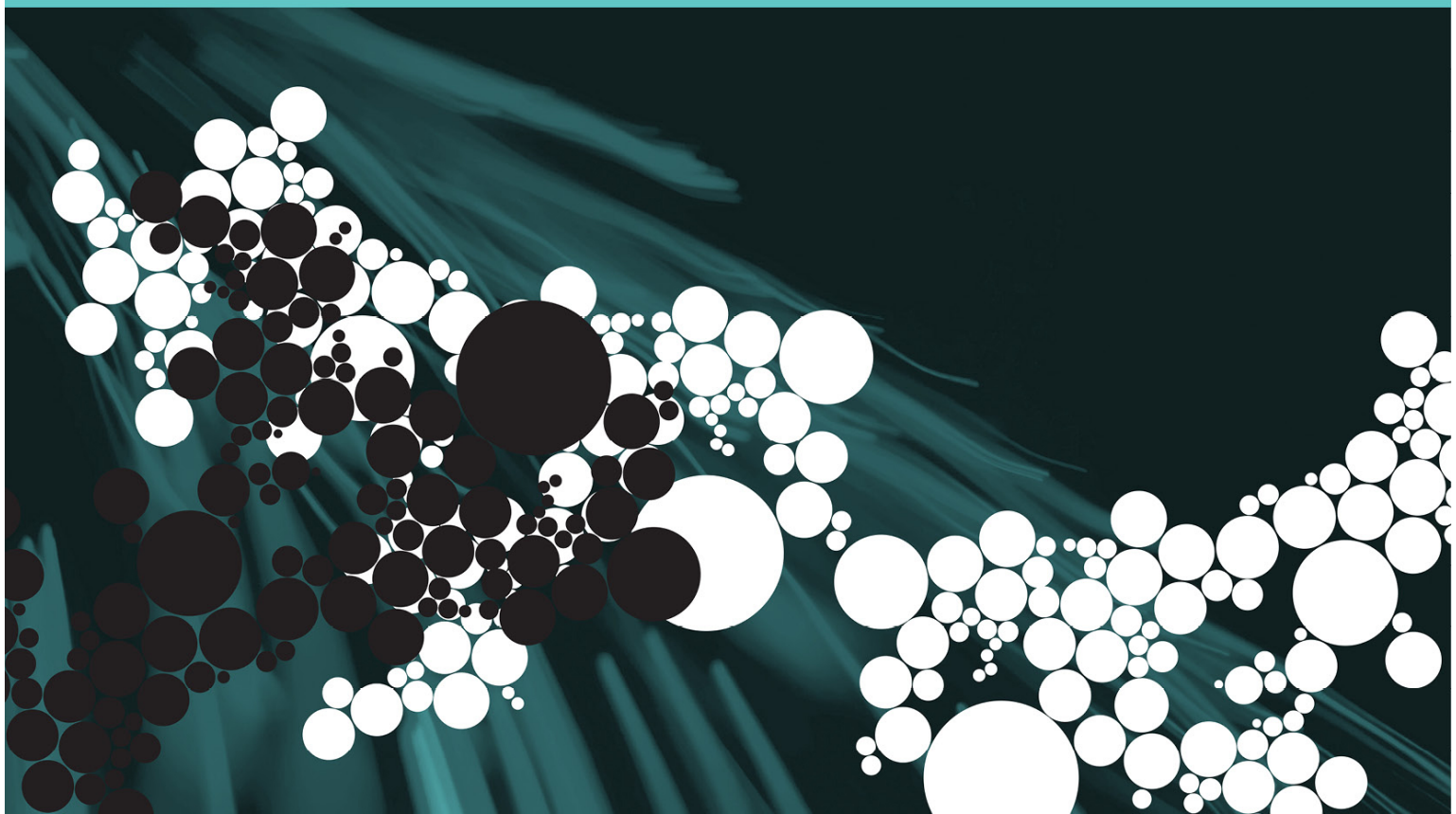




Australian Government
**Department of Industry,
Innovation and Science**



National Survey of Research Commercialisation (NSRC)

Data Summary 2012 – 2014

www.industry.gov.au/nsrc

This document presents key statistics from the 2014 National Survey of Research Commercialisation (NSRC) and compares them against data from the 2012 and 2013 survey¹.

1. National Survey of Research Commercialisation

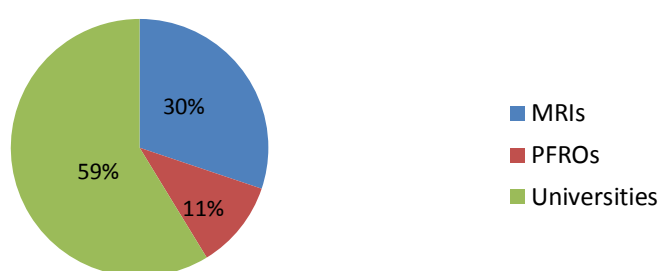
The NSRC provides a collection of data on various aspects of research engagement and commercialisation activities of Australian universities, publicly funded research agencies (PFRAs) and medical research institutes (MRIs).

- There was a 93% response rate to the 2014 NSRC data collection, an improvement over the 89% response rate in 2013.
- The participating institutions comprised of seven PFRAs; 37 universities and 19 MRIs.
- The 2014 survey population makeup included a number of changes including: participation by two additional PFRAs and one MRI; two universities chose not to participate and a number of MRIs disbanded, merged or were dropped from the survey because they were not in scope.

Table 1: NSRC Survey Population

Year	Research Organisations			Total
	MRIs	PFRAs	Universities	
2012	23	5	38	66
2013	23	5	38	66
2014	19	7	37	63

Figure 1: 2014 NSRC participation by sector



2. Research Expenditure

Research is defined as creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. Research expenditure shows the total expenditure on research performed by institutions in 2014 regardless of the funding source.

- Total research investment from surveyed organisations was \$10.2 billion in 2014 compared to \$9.7 billion in 2013 (inflation adjusted), a 5.5% increase in real terms.

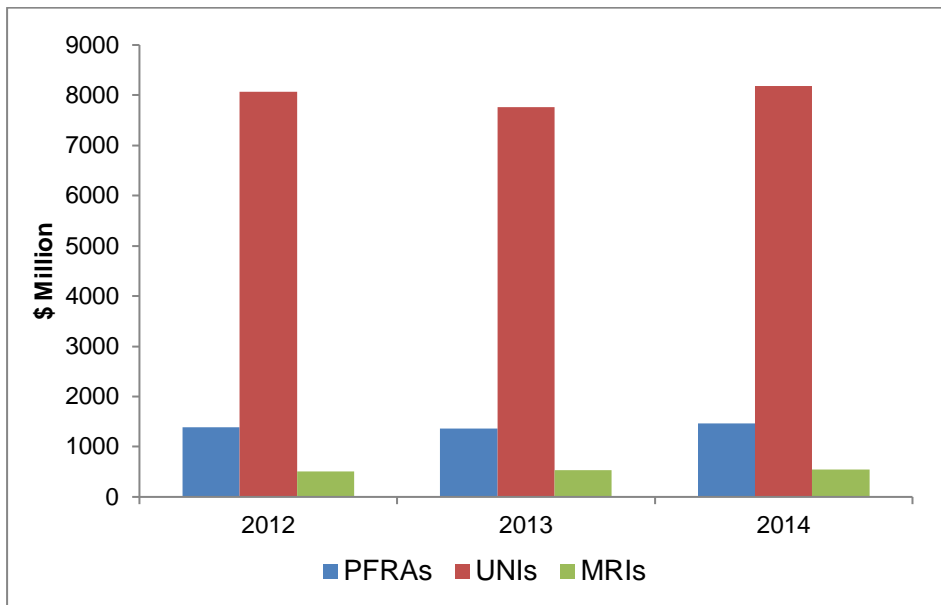
¹ Numbers reported may not tally due to rounding. All dollar values are adjusted for inflation.

- PFRAs reported 7.6% growth in research expenditure from 2013 followed by universities and MRIs at 5.4% and 2.4% growth respectively.
- The university sector accounted for 80.2% of the total R&D investment of the organisations surveyed.

Table 2: Research expenditure (\$ Millions)

	2012	2013	2014
PFRAs	1,388	1,363	1,466
UNIs	8,064	7,765	8,185
MRIs	504	538	551
Total	9,956	9,666	10,202

Figure 2: Research expenditure by sector



3. Invention Disclosures and Material Transfer Agreements

Invention disclosures and material transfer agreements are measures of knowledge creation and knowledge exchange.

3.1 Invention Disclosures

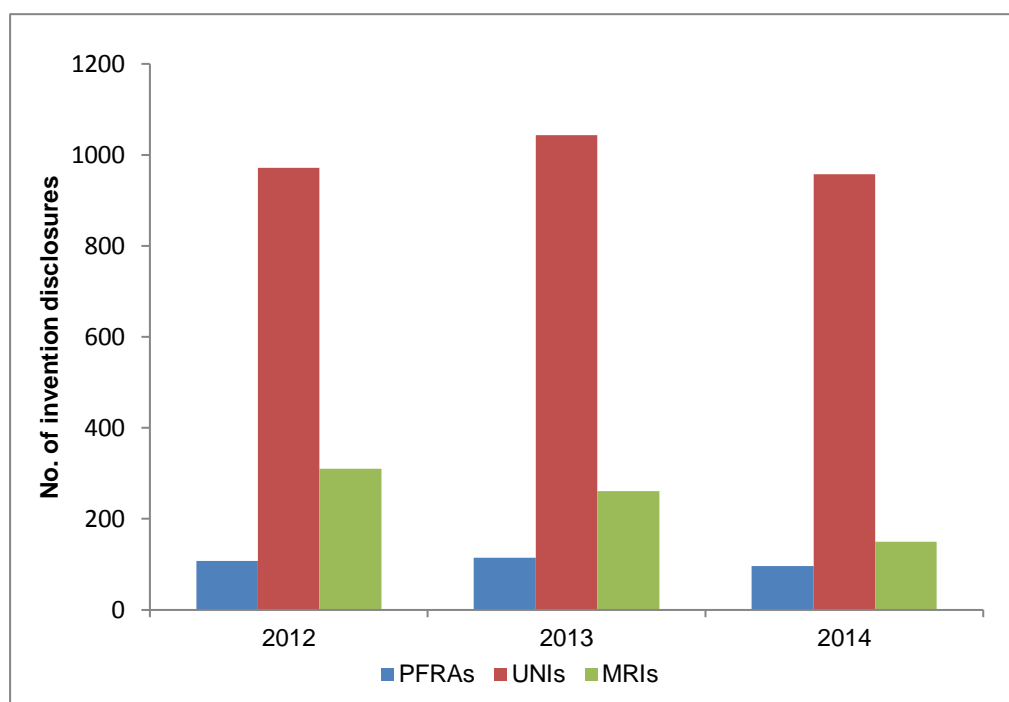
Invention disclosures describe an invention to determine whether patent protection should be sought.

- In 2014, total invention disclosures were 1,203, a decline of 15.3% from 2013. This is due to a substantial reduction in invention disclosures reported by MRIs and PFRAs while the university sector remained stable.
- Universities accounted for 84.5% of total invention disclosures reported in 2014, followed by MRIs and PFRAs at 13.2% and 2.3% respectively.

Table 3.1: Number of Invention disclosures

	2012	2013	2014
PFRAs	108	115	96
UNIs	971	1,044	957
MRIs	311	261	150
Totals	1,390	1,420	1,203

Figure 3.1: Number of Invention disclosures by sector



3.2 Material Transfer Agreements

Material Transfer Agreements (MTAs) outline conditions under which material is provided from the owner to another entity for a specific use.

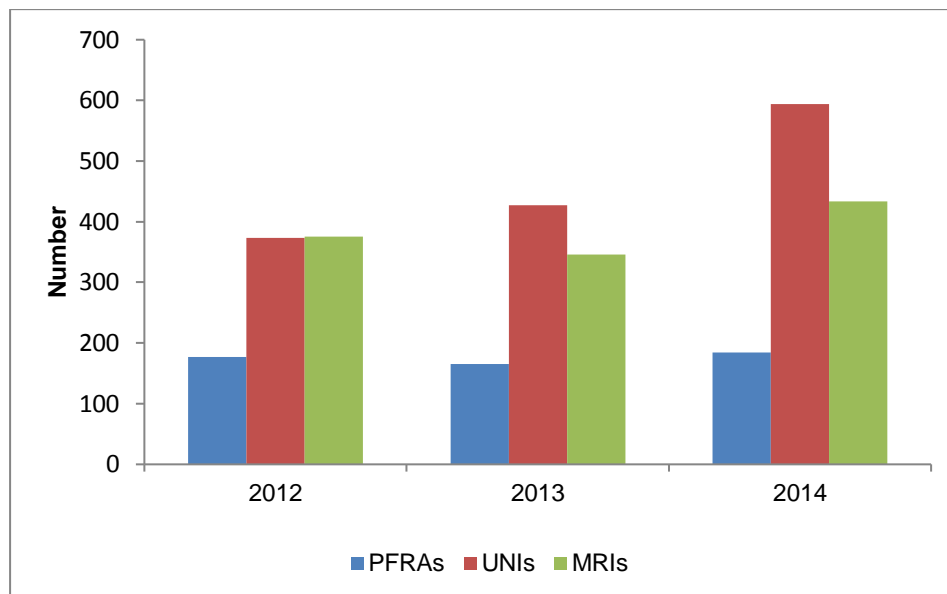
- In 2014, research organisations entered into 1,212 MTAs, an increase of 29.2% over 938 reported in 2013.
- Universities accounted for 49.0% of total MTAs entered into in 2014, followed by MRIs and PFRAs with 35.8% and 15.2% respectively.

Table 3.2: Number of Material Transfer Agreements

	2012	2013	2014
PFRAs	177	165	184
UNIs	373	427	594
MRIs	375	346	434

Totals	925	938	1,212
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Figure 3.2: Number of Material Transfer Agreements by sector



4. Resourcing

Research commercialisation resourcing includes staff whose duties are specifically involved with research commercialisation activities including: licensing and patenting processes; start-up activity efforts; marketing issues in a commercialisation context; negotiating and managing contracts and consultancies; and organising community information sessions.

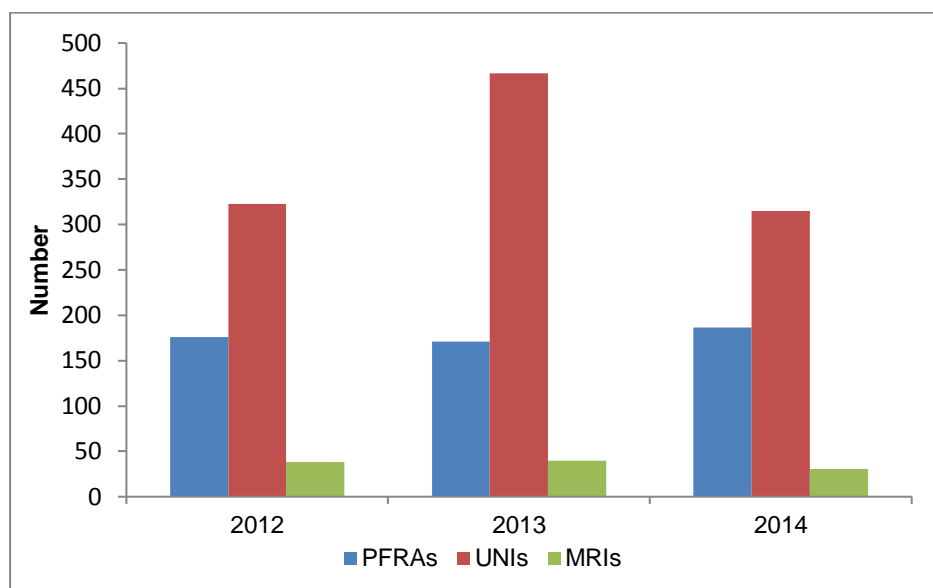
- In 2014, research organisations employed a total of 533 dedicated staff for commercialisation activities compared to 677 staff in 2013, representing an overall decrease of 21.3%.
- Universities employed 59.1% of the commercialisation workforce in 2014, followed by PFRAs and MRIs at 35.1% and 5.8% respectively.
- Commercialisation staff employed in university sector and medical research sector decreased in 2014 from the previous year while commercialisation staff employed in PFRAs² increased by 9.4%.

Table 4: Commercialisation staff (FTE) employed

	2012	2013	2014
PFRAs	176	171	187
UNIs	323	466	315
MRIs	38	40	31
Total	537	677	533

² In 2014, two additional PFRAs participated in the NSRC.

Figure 4: Research commercialisation staff (FTE) employed by sector



5. Commercialisation Outcomes

Research commercialisation is a process of converting scientific knowledge or invention into a marketable product or industrial process. It ensures that investment in research brings positive return by way of technological advances.

5.1 Licences, Options and Agreements (LOAs)

A licence agreement formalises the transfer of technology between two parties, where the owner of the technology grants rights to the other party. An option agreement grants the potential licensee a time period during which it may evaluate the technology and negotiate the terms of a licence agreement. An assignment agreement conveys all right, title and interest in the licenced subject matter to the named assignee.

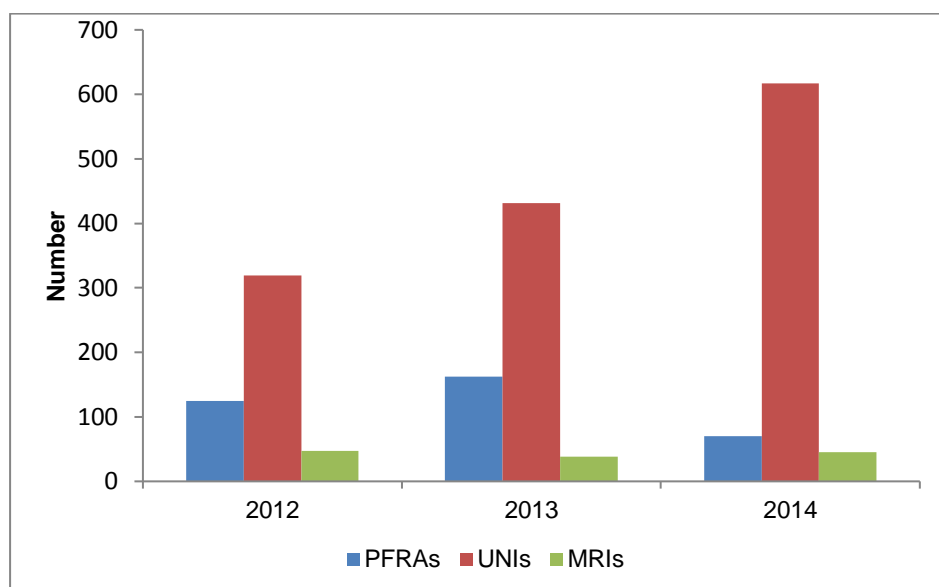
5.1.1 Executed LOAs

- In 2014 research organisations executed 732 LOAs, a 16.0% increase from the previous year.
- Universities reported 43.2% growth in the number of LOAs executed while MRIs grew by 18.4% from previous year. In contrast, PFRAs showed a 56.8% decline from 2013.
- Universities accounted for 84.3% of all LOAs executed by research organisations in 2014.

Table 5.1.1: Number of LOAs executed

	2012	2013	2014
PFRAs	125	162	70
UNIs	319	431	617
MRIs	47	38	45
Totals	491	631	732

Figure 5.1.1: Number of LOAs executed by sector



5.1.2 Active LOAs

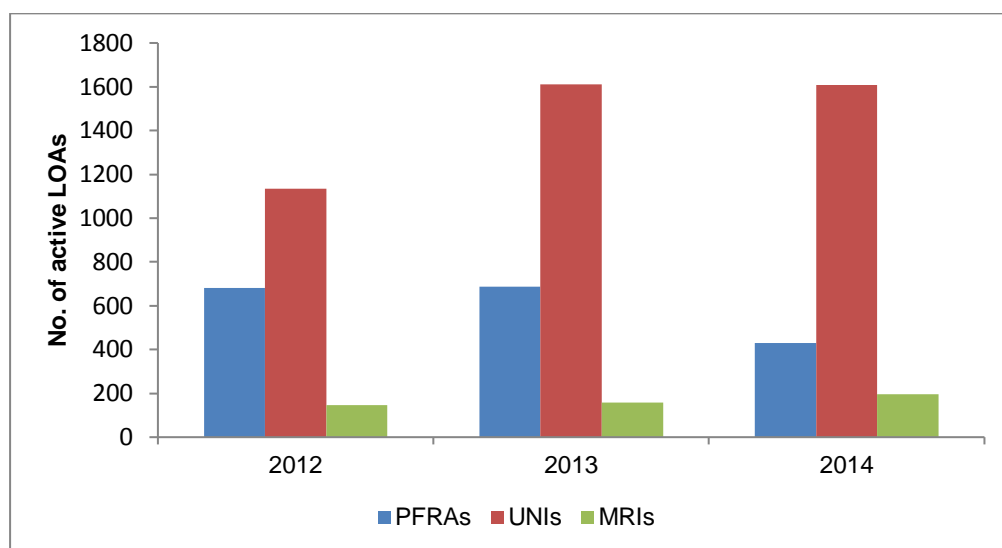
Active LOAs are 'legally enforceable' licences and options that earned income in 2014, or which are contracted to provide income in future years and for which there is a reasonable expectation that income will be paid.

- In 2014, research organisations reported 2,236 active LOAs, an 8.9% decrease from the previous year.
- Active LOAs reported by universities declined slightly by 0.12% and PFRAs showed a larger decline of 37.5% from the previous year. Alternatively MRIs reported a 26.1% increase in the number of active LOAs.
- Universities accounted for 72.0% of active LOAs in 2014.

Table 5.1.2: Number of active LOAs

	2012	2013	2014
PFRAs	682	686	429
UNIs	1134	1611	1609
MRIs	146	157	198
Totals	1962	2454	2236

Figure 5.1.2: Number of active LOAs



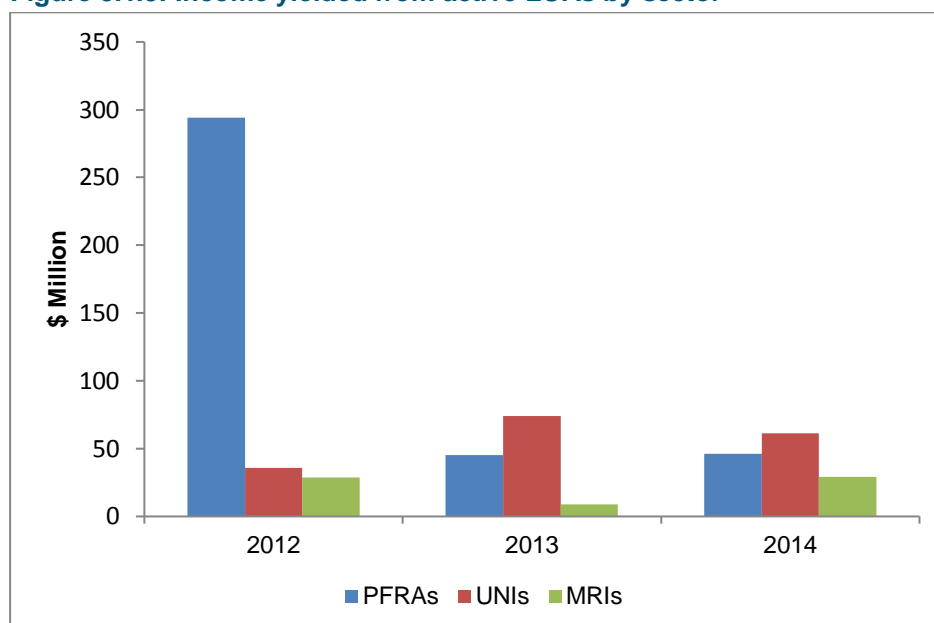
5.1.3 Income yielded from active LOAs

- Active LOAs generated \$136.4 million income in 2014, a 7.5 % growth from the previous year.
- Of the total income from active LOAs, the university-sector received \$61.1 million and PFRAs and MRIs received \$46.1million and \$29.2 million respectively

Table 5.1.3: Income yielded from active LOAs (\$ Million)

	2012	2013	2014
PFRAs	294	45	46
UNIs	36	74	61
MRIs	29	9	29
Totals	358	129	136

Figure 5.1.3: Income yielded from active LOAs by sector



5.2 Start-up companies³

Start-up company formation is an indication of research commercialisation as start-up companies are partially or entirely dependent on upon the licensing or assignment of an institution's technology for initiation.

- In 2014, ten new start-up companies were reported including five by universities, three by MRIs and two by PFRAs.
- The number of start-up companies reported in 2014 is substantially lower compared to previous years reporting; 26 in 2013 and 22 in 2012.

Table 5.2: Number of start-up companies

	2012	2013	2014
PFRAs	3	3	2
UNIs	12	21	5
MRIs	7	2	3
Total	22	26	10

5.3 Value of research commercialisation equity holdings

The value of equity holdings refers to equity that is related to the licensing/intellectual property assignment activity of the institution.

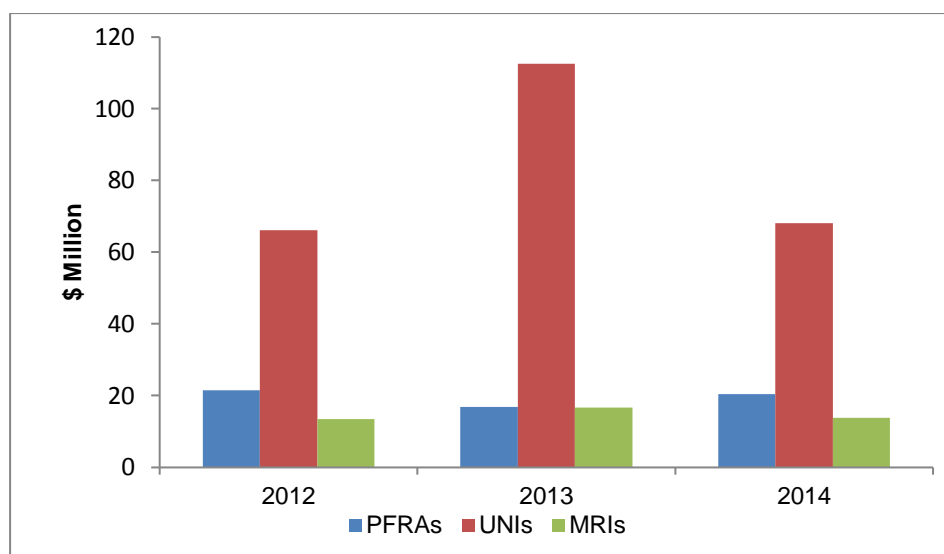
- In 2014, there was a 30.6% reduction in the value of equity holdings by research organisations compared to 2013. However, the 2014 equity holdings figures are broadly similar to 2012 data.
- The university sector holds \$68 million, 66.67%, of the total research commercialisation equity (\$102 million) held by surveyed organisations in 2014.

Table 5.3: Value of research commercialisation equity holdings (\$ Million)

	2012	2013	2014
PFRAs	22	17	20
UNIs	66	113	68
MRIs	13	17	14
Total	101	147	102

³ In 2014, data on start-up company activity was collected through an administrative process instead of the NSRC survey. The collection method may have impacted 2014 data. From 2015, start-up company data will be collected through the NSRC instrument.

Figure 5.3: Value of research commercialisation equity holdings by sector



5.4 Number of Research Contracts, Consultancies and Collaborations

The number of research contracts, consultancies and collaborations provide useful insights on levels of engagement between research organisations and end users particularly industry partners at an early stage in the commercialisation pipeline.

- In 2014, surveyed research organisations entered into 15,463 research contracts, consultancies and collaborations representing a 26.5 increase from the previous year.
- In 2014, MRIs⁴ and PFRAs⁵ reported substantial growth in the number of research contracts, consultancies and collaborations. Universities held 11,966 research contracts, consultancies and collaborations, 77.4 % of the total in 2014.

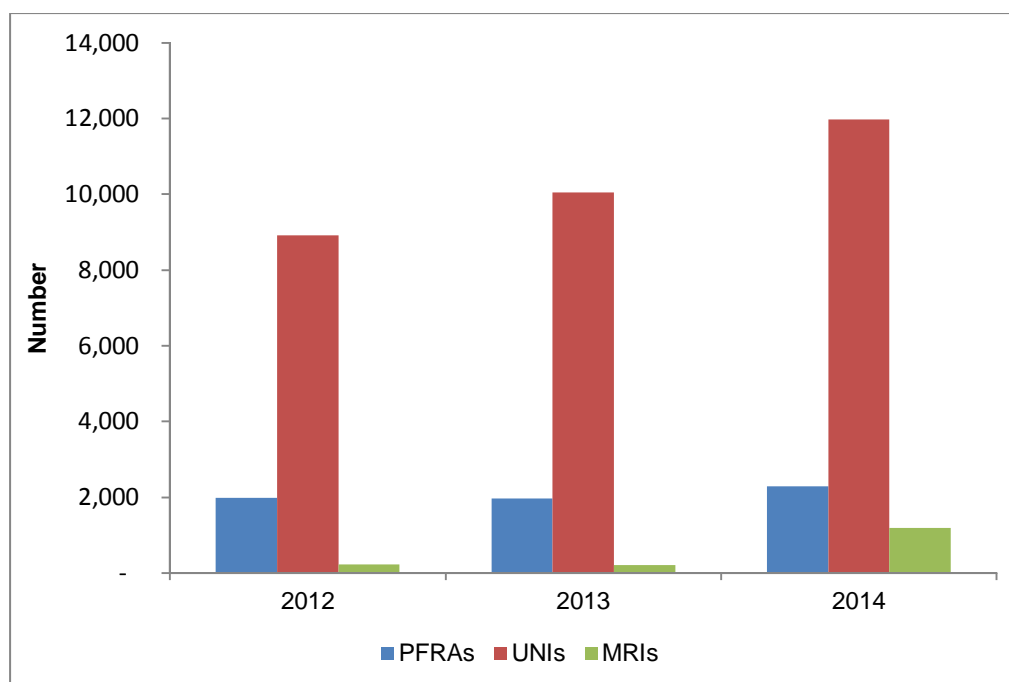
Table 5.4: Number of contracts, consultancies and collaborations

	2012	2013	2014
PFRAs	1,994	1,965	2,299
UNIs	8,915	10,046	11,966
MRIs	237	217	1,198
Total	11,146	12,228	15,463

⁴ The MRI increase may be due to the introduction of a separate reporting field for research collaborations in the 2014 NSRC. Previously, research contracts and collaborations were a combined metric and this resulted in under reporting by MRIs.

⁵ In 2014, two additional PFRAs participated in the NSRC.

Figure 5.4: Number of contracts, consultancies and collaborations by sector



5.5 Value of Research Contracts, Consultancies and Collaborations

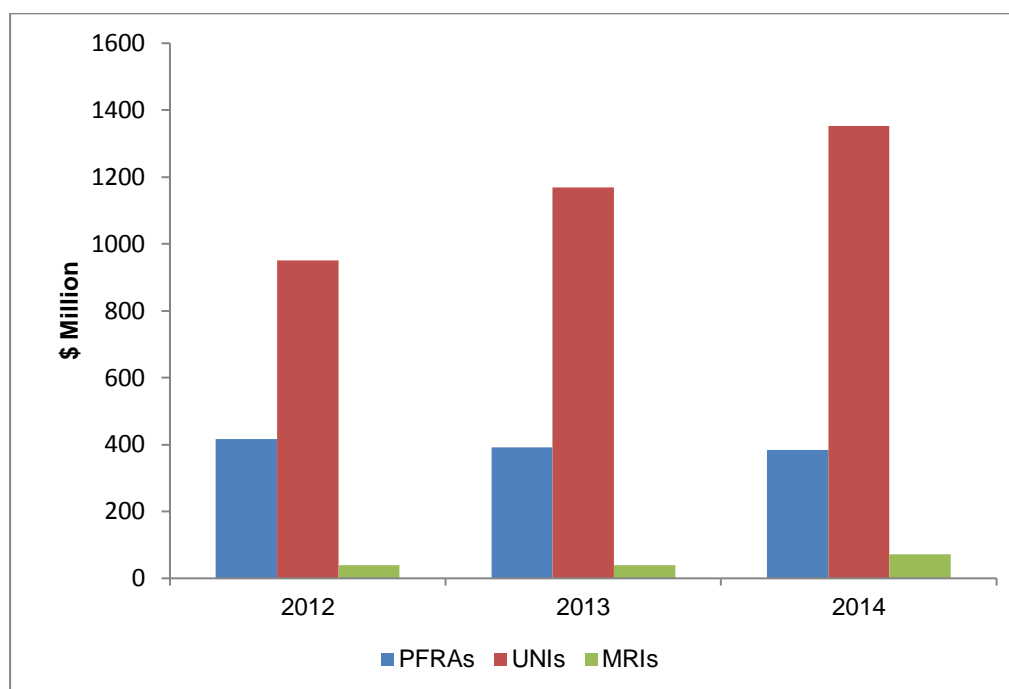
The value of research contracts, consultancies and collaborations shows the income generated by research organisations from end users particularly industry partners.

- The total value of the research contracts, consultancies and collaborations increased from \$1,598 million in 2013 to \$1,808 million in 2014, a 13% increase.
- In 2014, there was an 86.4% increase in income arising from research contracts, consultancies and collaborations for MRIs, from \$39 million in 2013 to \$72 million in 2014.

Table 5.5: Value of contracts, consultancies and collaborations (\$ Millions)

	2012	2013	2014
PFRA	417	391	384
UNI	951	1,168	1,352
MRI	40	39	72
Total	1,408	1,598	1,808

Figure 5.5: Value of contracts, consultancies and collaborations by sector



6. Industry Skills Training

Industry skills prepare researchers and research students for collaborating with industry from within research organisations as well as preparing them for jobs in industry after they graduate.

- In 2014, 44 organisations reported research training provision in industry skills for researchers and research students. The university sector remains the leading sector offering training in industry skills, with 32 out of the 37 participant universities offering such training in 2014.
- In 2014, industry-skills research training was delivered to 4,879 participants. The university sector has the largest participation with 4,465 participants followed by PFRAs and MRIs with 297 and 117 participants respectively.

Table 6: Number of organisations providing industry skills training

	2012	2013	2014
PFRAs	3	3	5
UNIs	29	29	32
MRIs	12	12	7
Total	44	44	44

Figure 6: Number of organisations providing industry skills training by sector

