

Creative Sector 2017: Industry Snapshot for Auckland

Ross Wilson

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Executive summary

Mayor Phil Goff's vision for Auckland is 'to be a world-class city. A place where talent wants to live'. More specifically, the Auckland Plan and Auckland Economic Development Strategy categorise the creative sector as a platform technology sector, where outputs support other sectors and can be applied to multiple other industries. Priorities include 'to develop a creative, vibrant international city', in support of which Auckland Council's Toi Whānui Arts and Culture Strategic Action Plan includes the goal that 'Auckland has a robust and flourishing creative economy.'

This report provides a snapshot of Auckland's creative sector (with data up to 2016), and its contribution to the Auckland and New Zealand economies. Creative industries have their origin in individual creativity, skill and talent, and create wealth and jobs through generating and exploiting intellectual property. The creative sector as defined in this report is very diverse, and comprises the following sub-sectors: design; publishing; screen production and creative digital content and radio; performing arts; visual arts and music. Some key statistics on the sector show:

The Auckland creative sector, based on data for 2016, is made up of 9995 businesses (geographical units), which is 5.4 per cent of total businesses in Auckland. The sector generates Gross Domestic Product (GDP) of \$2.8 billion and employs 30,901 people, 3.3 per cent of Auckland's GDP and 3.7 per cent of Auckland's employees respectively. This equates to a labour productivity that is 11 per cent lower than the productivity of the Auckland economy as a whole (value added (GDP) per employee). These are the direct contributions only.

Half of all people employed in the creative sector in New Zealand are based in Auckland, and as high as 86 per cent for TV (a sub-sector). The sector in terms of employment grew by 2.2 per cent each year on average between 2000 and 2016, a similar growth rate to the total Auckland economy (of 2.3%). Creative sector firms are smaller in size, an average of 3.1 employees compared to 4.5 for all sectors. This varies by creative sub-sector however, from an average of 1.5 employees for firms in the music sub-sector to 59.4 employees for TV firms.

The largest sub-sector by employment is design, which employs 41 per cent of the total creative sector in Auckland. Design is further broken down into advertising which makes up 15 per cent of total creative sector employment, graphic design (13%) and architecture (13%). The second largest sub-sector is screen production, employing 22 per cent of the total creative sector, made up of TV (9%) and film and video (13%). Film and video firms are small in size, an average of 2.4 employees per firm.

The fastest growing creative sub-sector is digital media, which grew by 9.3 per cent per annum between 2000 and 2016. The TV sub-sector in Auckland grew by 3.6 per cent per annum – whereas for the rest of New Zealand it contracted. Design also had a healthy growth of 3.3 per cent per annum during this period. Design provided half of the creative sector's new jobs, but its productivity is lower by 8 per cent than the productivity of the creative sector as a whole. The publishing sub-sector on the other hand contracted by 2.1 per cent per annum from 2000 to 2016.

The Waitematā Local Board area (where the Auckland CBD is located) is home to over half (53%) of total creative sector employment in Auckland. This compares to only a quarter (24%) of total employment in Auckland being located in this local board area. Radio sub-sector has the most with 83 per cent of its Auckland employment based in the area. Visual arts and performing arts are the sub-sectors with the lowest proportions, 31% and 39% respectively provided by Waitematā (but still higher than all sectors).

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1. Introduction

This report provides a snapshot of Auckland's creative sector (with data up to 2016), and its contribution to the Auckland and New Zealand economies. In addition to its small but significant direct contribution to employment and Gross Domestic Product (GDP), the creative sector is considered to be a platform technology sector whose outputs support activity in other sectors of the economy.

Mayor Phil Goff's vision for Auckland is "to be a world class city where talent wants to live". More specifically, the Auckland Plan, as well as Auckland's Economic Development Strategy, place considerable importance on the creative sector, with a specific target to "Increase the number of people employed in the creative sector from 26,900 in 2007 to 45,000 by 2040".¹ Similarly, one of its priorities for the economy is to "develop a creative, vibrant international city" in order to "attract innovative skilled people and investment, and benefit residents and visitors alike".² In addition, the Auckland Economic Development Strategy states that "Screen and creative digital content expertise underpins film, television, animation, and publishing (and can be applied to multiple other industries, such as tourism, education, and manufacturing processes)... Building strengths in such areas will be important for attracting and retaining knowledge workers and investment in research and development (R and D) in Auckland".³

Similarly, Auckland Council's Toi Whānui Arts and Culture Strategic Action Plan, adopted in October 2015, aims "to integrate arts and culture into our everyday lives to create a culturally rich and creative Auckland". One of the plan's goals is specifically that "Auckland has a robust and flourishing creative economy [with associated objectives of]:

- Champion the creative sector to grow Auckland's economy
- Foster education, collaboration and professional development for the creative sector."⁴

This report (using data for 2000 to 2016) is an updated and revised version of the 2013 Auckland Council technical report, *Industry snapshot for Auckland: creative sector* (TR2013/028, 2001 to 2012 data). It is one of a series of industry snapshots of various Auckland sectors. Except where otherwise stated, this report is based entirely on data on employment, GDP and business numbers published (via Auckland Council subscription) by Infometrics, an economic consultancy. For more details on data definitions and limitations, see Appendix 3: Data definitions and limitations.

¹ Auckland Council 2012. *The Auckland plan*, p114; part of "Strategic Direction 3: Integrate arts and culture into our everyday lives". Note that their definition of creative employment differs from that of this report.

² Auckland Council 2012. *The Auckland plan*, p168.

³ Auckland Council, 2012. *Auckland's economic development strategy*, p19.

⁴ Auckland Council, 2015 *Arts and culture strategic action plan* downloaded June 2017 from <http://www.aucklandcouncil.govt.nz/en/newsevents/culture/arts/pages/artsculturestrategicactionplan.aspx>

1.1 Sector definition

Creative industries have their origin in individual creativity, skill and talent, and have a potential for wealth and job creation through generating and exploiting intellectual property.⁵ The creative sector as defined in this report⁶ is very diverse, and comprises the following sub-sectors:⁷

- **design**, comprising advertising services, architectural services and graphic design
- **publishing**, including newspaper printing or publishing, other periodical publishing, book and other publishing, and authors
- **screen production and creative digital content and radio**, covering:
 - **film and video** production, exhibition and post production services (not distribution⁸)
 - **TV**, including television production and broadcasting and cable/satellite TV
 - **radio** broadcasting services
 - **digital media**, including software publishing, internet publishing and broadcasting and other web and internet related media and applications
- **performing arts**, including services to the arts, performing arts venues, music and theatre productions, and performers
- **visual arts** including jewellery and silverware manufacturing, photographic studios, and visual arts and crafts
- **music**, including composers, sound recording studios, and recorded media manufacturing and publishing.

The creative sector as defined in this report differs from, but overlaps with, the “design sector”, which has been defined as consisting of 264 ‘design processes’ in 29 industries including manufacturing, health and food and beverages.⁹

⁵ As described in UK Department for Culture, Media and Sports (DCMS), 2001. *Creative industries mapping document 2001*.

⁶ Sub-sector list (ANZSIC 2006 industry codes) from Auckland City Council, 2009. *Auckland’s creative industries: The numbers 2009*.

⁷ For the groupings of ANZSIC 2006 5-digit industry codes that correspond to the various sub-sectors, see Appendix A2: Sector definition.

⁸ Because the sector definition focuses on production, creation or performance rather than distribution or wholesaling.

⁹ Source: PwC, 2017. *The value of design to New Zealand*.

1.2 Creative workforce

The creative sector's definition is based on productive enterprises in creative industries, and forms a sub-set of the creative workforce which is based on occupations of workers. The creative workforce is often defined¹⁰ as having three components, (of which only two are part of the creative sector), as follows:

- creative workers in creative industries – part of the creative sector
- non-creative (“support”) workers, but in creative industries – part of the creative sector
- creative workers, but in non-creative industries – not part of the creative sector.

An analysis of 2006 census data¹¹ revealed that 34 per cent of Auckland's creative workforce was employed in non-creative industries. In other words, for every 100 workers (both creative and non-creative) in the creative sector, there were also 50 creative workers in non-creative industries, who are not counted in the creative sector. (For example, a graphic designer working for a caravan manufacturer.) However, suitably detailed data is available annually only for creative industries (and their sub-sectors) comprising the creative sector; suitable occupational data regarding creative workers in non-creative industries is available only from the census. To repeat the workforce analysis using 2013 census occupational data is outside the scope of this report.

1.3 Report structure

The next section compares the size of Auckland's creative sector to other sectors and the Zealand creative sector, in terms of employment and businesses. This is followed by the relative sizes of the various Auckland creative sub-sectors, by employment and business numbers. Section 4 examines employment growth trends over time for the creative sector in Auckland, compared to in New Zealand and to Auckland's total economy, followed by a similar analysis of each sub-sector, and then a more detailed analysis of the sub-sectors by their component activities. This is followed by comparisons of Simple Location Quotients showing the extent to which the sector and its sub-sectors are concentrated in Auckland rather than spread proportionally around the country, and then a look within Auckland at the relative levels of concentration in the Waitematā Local Board area. Next the report analyses the Auckland sector and sub-sectors by GDP and productivity (including a breakdown of the design and publishing sub-sectors into their component activities). The report concludes with some additional comments about the apparent impacts on the sector and various sub-sectors of technology and the global financial crisis (and recovery).

¹⁰ For example Auckland Regional Council, 2010. *Auckland's creative workforce report*.

¹¹ *Ibid.* Note that the ARC's definition of the creative sector includes various digital content and software sub-sectors that are not included (or only partially) in this report's definition of the creative sector.

2. Relative size of Auckland's creative sector¹²

This section compares the number of Auckland creative sector businesses and employees to New Zealand's, and to totals for all sectors, for the year to March 2016.

2.1 Relative size of Auckland's creative sector

Auckland's creative sector has 30,901 employees (including self-employed) in 9995 businesses (GUs), making it the largest concentration in New Zealand. In 2008, the former Auckland City Council area alone had a creative sector nearly three times larger than Wellington City, the next largest¹³.

The New Zealand creative sector is strongly over-represented in Auckland compared to other sectors, in terms of both employment and business numbers. Auckland is home to 50.2 per cent of the New Zealand creative sector's businesses, but only 36.6 per cent of New Zealand's total businesses for all sectors. Looked at another way, in Auckland 5.4 per cent of businesses are in the creative sector, which is substantially higher than the proportion for New Zealand as a whole (3.9%). (see Table 1).

Similarly, Auckland provides 49.9 per cent of New Zealand's creative sector employment, but only 34.9 per cent of its total employment for all sectors. Consequently, in Auckland 3.7 per cent of employment is in the creative sector, which is also substantially higher than the proportion for New Zealand as a whole (2.6%). For further analysis, see Section 7.1 Simple Location Quotients (SLQs) by industry.

Table 1: Auckland New Zealand creative sector businesses and employees, 2016

	Auckland	New Zealand	Auckland share of New Zealand
Creative sector businesses	9,995	19,917	50.2%
Total businesses all sectors	184,782	504,381	36.6%
Creative sector share of businesses	5.4%	3.9%	
Creative sector employees	30,901	61,983	49.9%
Total employees all sectors	824,190	2,363,429	34.9%
Creative sector share of total employment	3.7%	2.6%	
Creative sector employees/business	3.1	3.1	
Total employees/business all sectors	4.5	4.7	

Table 1 also shows that the average number of employees per business is even smaller for Auckland's creative sector (3.1) than for the total economy including all sectors (4.5). In this respect, Auckland is similar to New Zealand as a whole, where

¹² Year to March 2016.

¹³ Source: Auckland City Council, 2009. *Auckland's creative industries: The numbers 2009*.

creative sector businesses also have an average of 3.1 employees, as compared to the 4.7 average for New Zealand's total economy including all sectors. So, Auckland's tendency to slightly smaller businesses than New Zealand, does not apply to the creative sector.

Comparing Auckland's creative sector to other sectors, it is similar in size (by employees) to the Public Administration and Safety sector (which has employment of 31,711); it has a similar number of businesses to Wholesale Trade (which has 10,023 GUs). (See Table 2, which is ranked by employment but also shows number of businesses).

Table 2: Auckland sector sizes by employment and business numbers, 2016

Sector (ANZSIC 1-digit, Auckland)	Employment	Share of employment	Businesses (GUs)	Share of businesses
Professional, Scientific and Technical Services	102,039	12.4%	26,355	14.3%
Manufacturing	79,339	9.6%	8,031	4.3%
Retail Trade	73,915	9.0%	13,722	7.4%
Health Care and Social Assistance	72,474	8.8%	7,695	4.2%
Construction	68,169	8.3%	19,908	10.8%
Education and Training	62,294	7.6%	3,198	1.7%
Wholesale Trade	60,132	7.3%	10,023	5.4%
Accommodation and Food Services	51,910	6.3%	7,221	3.9%
Administrative and Support Services	50,414	6.1%	7,746	4.2%
Transport, Postal and Warehousing	39,398	4.8%	6,552	3.5%
Financial and Insurance Services	32,052	3.9%	15,372	8.3%
Public Administration and Safety	31,711	3.8%	837	0.5%
Creative	30,901	3.7%	9,995	5.4%
Other Services	29,497	3.6%	8,121	4.4%
Rental, Hiring and Real Estate Services	21,760	2.6%	38,559	20.9%
Information Media and Telecommunications	21,526	2.6%	3,036	1.6%
Arts and Recreation Services	14,345	1.7%	3,426	1.9%
Agriculture, Forestry and Fishing	8,719	1.1%	4,512	2.4%
Electricity, Gas, Water and Waste Services	4,203	0.5%	375	0.2%
Mining	303	0.0%	93	0.1%
Total all sectors^[1]	824,200	100.0%	184,782	100.0%

[1] Creative sector is also captured in other sectors, so total is net of double counting.

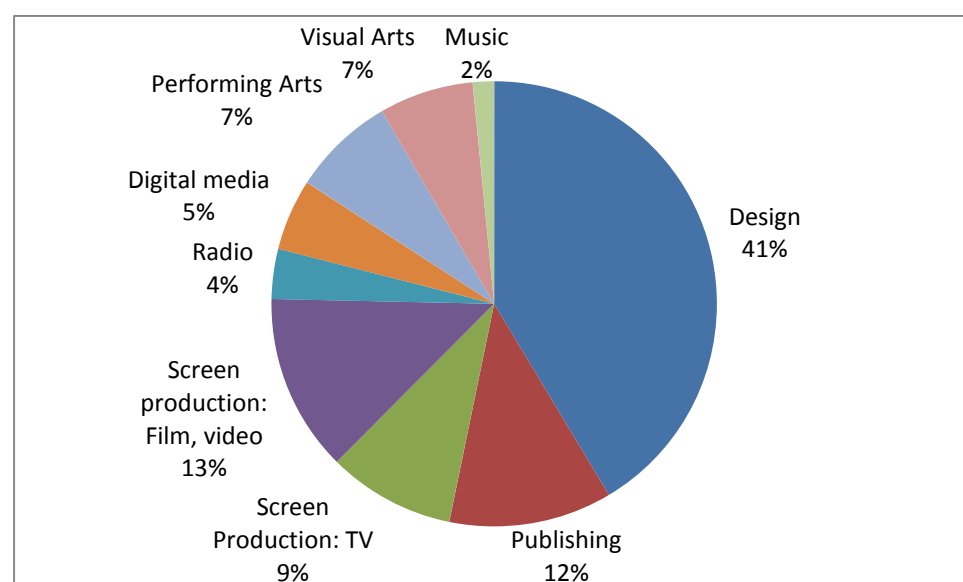
3. Employment and businesses by sub-sector¹⁴

This section compares the relative contributions of the different creative sub-sectors to the Auckland creative sector's employment and number of businesses in 2016. Further detail at the component activity level is provided in section 6, while section 7 compares creative sub-sector shares for Auckland to the corresponding shares for New Zealand.

3.1 Relative sizes of Auckland's creative sub-sectors

Auckland's largest creative sub-sector is design (comprising advertising, architecture and graphic design), which has 12,795 employees or 41 per cent of the sector's total employment. The two other major employers are publishing (12%, comprising newspaper, book and periodical publishing) and screen production, both television broadcasting (free to air and cable; 9%) and film and video (production, post-production and exhibition (but not distribution); 13%). Together these four sub-sectors provide 75 per cent of the sector's employment. At the other extreme is music, with only 2 per cent of the sector's employment (see Figure 1 and Table 3).

Figure 1: Creative employment shares by sub-sector, Auckland, 2016



The proportion of the Auckland sector's businesses that are in each sub-sector, in some cases is reasonably similar to the employment share, but in most cases they differ significantly. Publishing has only 7 per cent of the sector's businesses, and TV and radio practically zero, yet their employment shares are much higher, due to having a relatively higher proportion of larger businesses. Conversely, film and video (17%), performing arts (11%) and visual arts (12%) have much higher shares of the

¹⁴ Year to March 2016.

sector's businesses than of its employment, which suggests that these sub-sectors have primarily small businesses. (See Table 3 and Figure 2)

As a consequence, average business size varies hugely between sub-sectors, from 59 employees per business for TV and 25 for radio, to around 2 or less for film and video, performing arts and visual arts. (See Table 3).

Figure 2: Business versus employment shares by sub-sector, Auckland, 2016

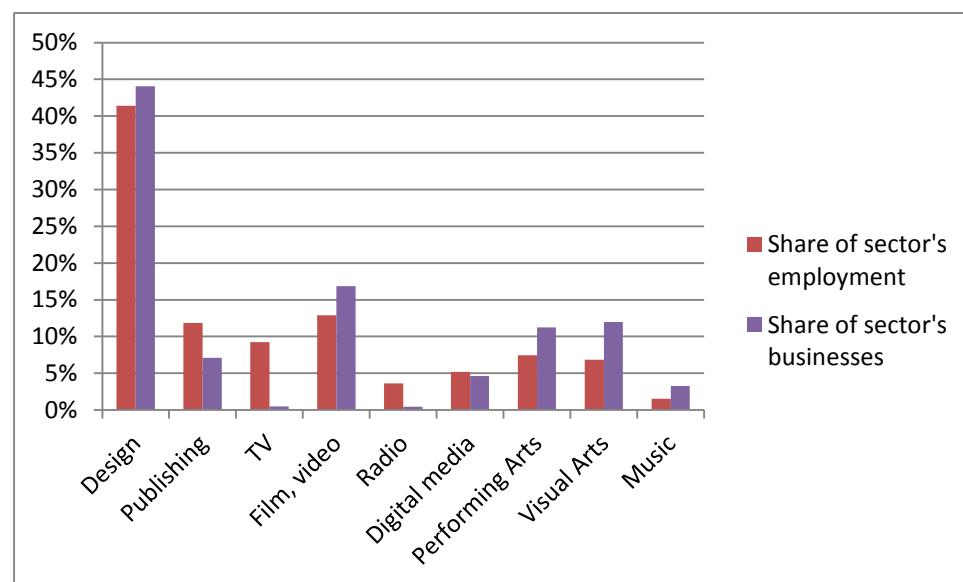


Table 3: Employment and business shares by creative sub-sectors, Auckland, 2016

Creative sub-sectors	Employment (jobs)	Share of sector's employment	Businesses (GUs)	Share of sector's businesses	Average business size (jobs/GU)
Design	12,795	41%	4,403	44%	2.9
Publishing	3,655	12%	710	7%	5.1
Screen Production: TV	2,853	9%	48	0%	59.4
Screen production: Film, video	3,978	13%	1,684	17%	2.4
Radio	1,122	4%	45	0%	24.9
Digital media	1,603	5%	460	5%	3.5
Performing Arts	2,303	7%	1,122	11%	2.1
Visual Arts	2,115	7%	1,196	12%	1.8
Music	477	2%	327	3%	1.5
Total Creative	30,901	100%	9,995	100%	3.1

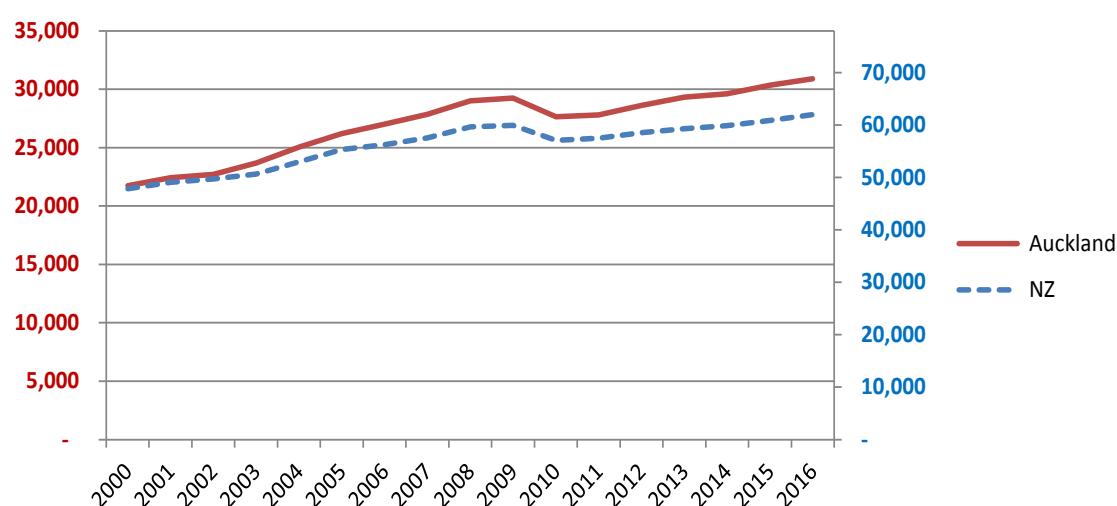
4. Employment growth of the sector¹⁵

This section looks at employment growth trends over time (2000 to 2016) for the creative sector in Auckland, compared to the sector in New Zealand and compared to Auckland's total economy.

4.1 Auckland creative sector vs New Zealand creative sector

Growth in employment in the creative industries between 2000 and 2016 was positive on average in both Auckland (2.2% pa) and New Zealand (1.6% pa). Creative sector employment has been growing somewhat more strongly in Auckland than in New Zealand as a whole, especially before the GFC (2000 to 2008) but also after it (2010 to 2016). Employment for both was flat in 2009 and fell in 2010. (See Figure 3).

Figure 3: Creative sector employment Auckland (LHS) and New Zealand (RHS), 2000-2016



4.2 Auckland and New Zealand creative sector vs. total economy

From 2000 to 2016 in Auckland, the economy as a whole showed slightly stronger growth (+2.3% pa) than the creative sector(+2.2% pa), so the creative sector's share of total employment fell slightly, from 3.8 per cent of the total in 2000, down to 3.7 per cent by 2016. This was similar to changes in share at the New Zealand level, where the creative sector's share of total employment fell slightly from 2.7 per cent of the total, down to 2.6 per cent. (See Table 4).

The Auckland economy as a whole grew continuously (+2.9% pa annual average) from 2000 until the Global Financial Crisis ("GFC") in 2008, then employment fell but

¹⁵ Year to March 2000 to 2016.

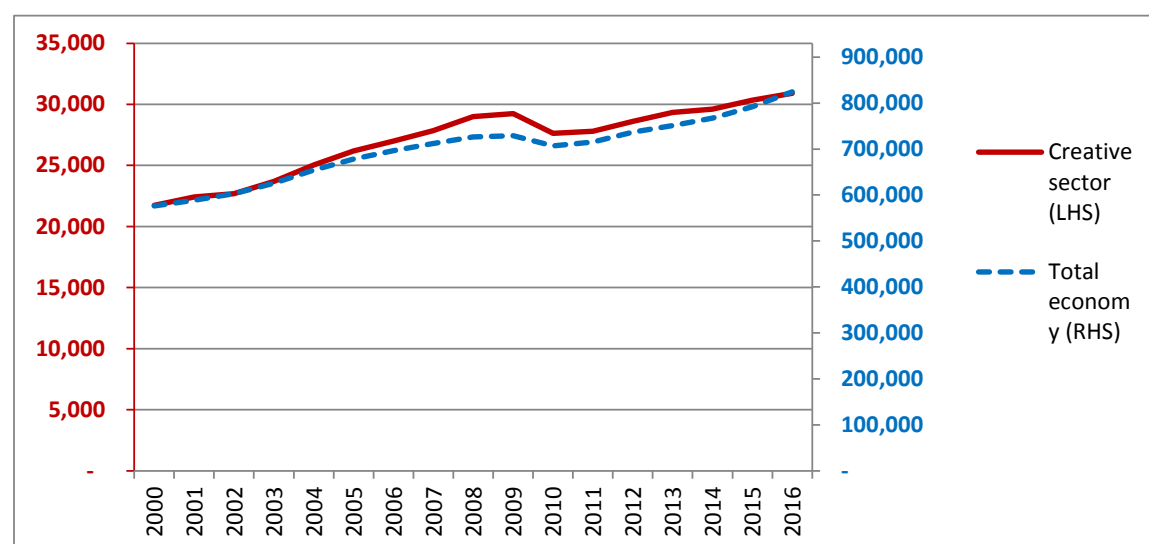
has since more than recovered (averaging +1.6% pa 2008-2016). Employment growth in Auckland's creative sector was particularly hard hit by the GFC, with the sector's annual growth rate being 0.8 percentage points higher than the total economy before the GFC, and 0.8 percentage points lower during/after the GFC. The sector showed a strong annual growth from 2000 to 2008 (+3.7% pa), then substantially lower growth on average from 2008 to 2016 (averaging 0.8% pa). (See Table 4 and Figure 4)

For the New Zealand creative sector as a whole, growth from 2000 to 2008 was less strong (+2.8% pa) than Auckland's creative sector, and similar to the growth rate of the other sectors of the national economy (+2.6% pa). Then from 2008 to 2016 the New Zealand creative sector was affected more strongly by the GFC, with employment managing an average of only 0.5 per cent pa, which is 0.5 percentage points worse than the country's total economy (1.0% pa). (See Table 4)

Table 4: Creative sector relative employment growth, 2000 to 2008 and 2016

	2000	2008	2016	Change 2000-16	Annual growth 2000-16	Annual growth 2000-08	Annual growth 2008-16
Auckland creative sector employment	21,745	29,004	30,901	9,156	2.2%	3.7%	0.8%
Auckland total employment	576,305	726,309	824,190	247,885	2.3%	2.9%	1.6%
Auckland creative sector share of total employment	3.8%	4.0%	3.7%	0.0%	0.0%	0.7%	-0.8%
NZ creative sector employment	47,841	59,695	61,983	14,142	1.6%	2.8%	0.5%
NZ total employment	1,776,411	2,185,598	2,363,429	587,018	1.8%	2.6%	1.0%
NZ creative sector share of total employment	2.7%	2.7%	2.6%	-0.1%	-0.2%	0.2%	-0.5%

Figure 4: Employment in creative sector (LHS) and total economy (RHS), Auckland, 2000-2016



5. Employment growth by sub-sector¹⁶

This section compares the employment growth of the various Auckland creative sub-sectors from 2000 to 2008 to 2016.

5.1 Employment growth of Auckland's creative sub-sectors

Over half (56%) of the rise in employment in Auckland's creative sector from 2000 to 2016 (+9156 jobs) was driven by a single sub-sector, Design (+5159), with substantial increases also from Screen Production: TV (+1223) and Digital Media (+1215). In contrast, there was a substantial reduction in employment in the Publishing sub-sector (-1467 employees). All of Auckland's other creative sub-sectors managed positive average growth over the 2000-2016 period, as follows. (See also Table 5 and Figure 5).

- **Design:** a healthy 3.3 per cent annual growth from a relatively high base resulting in 5159 extra jobs. This sub-sector strengthened its position as Auckland's largest creative sub-sector (and similarly at the New Zealand level). Auckland's design growth rate was above the creative sector average both pre-GFC (4.5%) and from 2008 to 2016 (2.0%).
- **Publishing:** an annual average fall of 2.1 per cent, with a weak uptrend from 2000 to 2008 (1.3% pa) more than offset by a sharp drop in the 2008 to 2016 period (-5.4% pa).
- **Screen production: TV:** a healthy 3.6 per cent annual growth from a fairly high base resulting in 1223 extra jobs; even post-GFC, TV managed positive growth (1.5% pa).
- **Screen production: film and video,** in contrast, grew by only 1.8 per cent per annum on average (2000-2016), due to a major reversal from 4.5 per cent annual growth pre-GFC to falling employment post-GFC (-1.0% pa).
- **Radio:** similar to TV, but from a lower employment base: a healthy 4.2 per cent annual growth from a relatively low base resulting in 539 extra jobs, pushing its total employment ahead of performing arts and visual arts; even post-GFC, radio managed positive average growth (2.1% pa);
- **Digital media:** very strong growth of 9.3 per cent overall, with post-GFC average annual growth rate of 9.0 per cent being not much lower than pre-GFC (9.5% pa); the sub-sector started from a low base, but these high rates still translate into 1215 net new jobs.

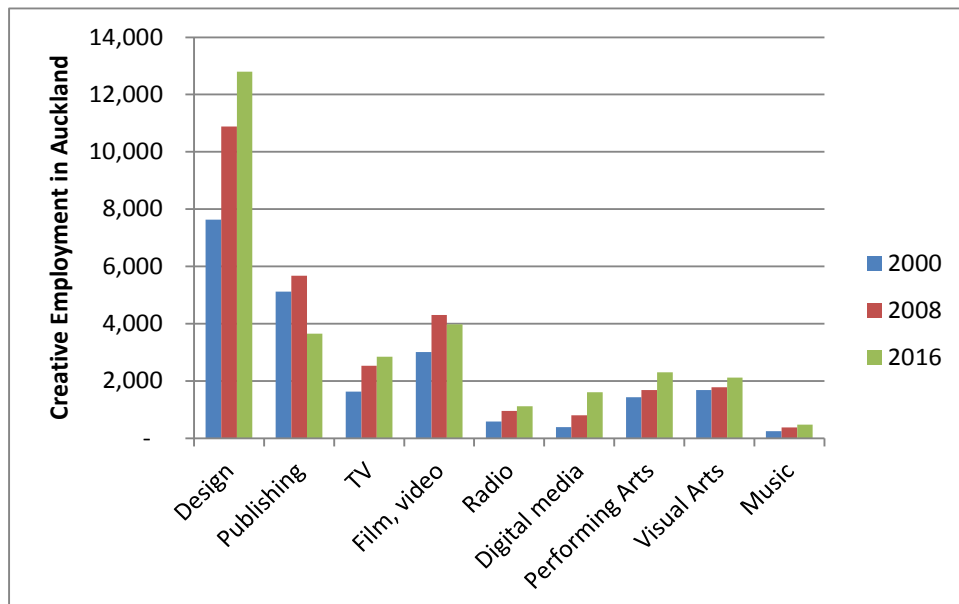
¹⁶ Year to March 2000, 2008 and 2016.

- **Performing arts:** a healthy 3.0 per cent annual growth for 864 extra jobs from 2000 to 2016; this sub-sector is one of only two to experience stronger growth post GFC (4.0%) than pre-GFC (1.9% pa).
- **Visual arts:** a modest 1.4 per cent annual growth for 427 extra jobs from 2000 to 2016; this sub-sector is one of only two to experience stronger growth post GFC (2.2%) than pre-GFC (0.7% pa).
- **Music:** a strong 5.8 per cent annual growth, but from a low base resulting in 233 extra jobs; the sub-sector was affected by the GFC (2.8% pa 2008-2016 following 5.8% pa 2000-2008) similarly to the rest of the sector, probably mainly among casual/self-employed musicians.

Table 5: Employment growth of Auckland creative sub-sectors, 2000 – 2008-2016

Creative sub-sector	2000	2008	2016	Change 2000-2016	Annual growth 2000-16	Annual growth 2000-08	Annual growth 2008-16
Design	7,636	10,885	12,795	5,159	3.3%	4.5%	2.0%
Publishing	5,122	5,680	3,655	- 1,467	-2.1%	1.3%	-5.4%
Screen Production: TV	1,630	2,538	2,853	1,223	3.6%	5.7%	1.5%
Screen production: Film, video	3,013	4,301	3,978	964	1.8%	4.5%	-1.0%
Radio	583	952	1,122	539	4.2%	6.3%	2.1%
Digital media	388	804	1,603	1,215	9.3%	9.5%	9.0%
Performing Arts	1,439	1,679	2,303	864	3.0%	1.9%	4.0%
Visual Arts	1,689	1,781	2,115	427	1.4%	0.7%	2.2%
Music	244	382	477	233	4.3%	5.8%	2.8%
Total creative	21,745	29,004	30,901	9,156	2.2%	3.7%	0.8%
Total economy	576,305	726,309	824,190	247,885	2.3%	2.9%	1.6%

Figure 5: Auckland employment in creative industry sub-sectors, 2000/2008/2016



6. Employment growth of component activities¹⁷

This section summarises employment growth patterns between 2000 and 2016 for each sub-sector for Auckland and New Zealand, and describes the major findings for each Auckland sub-sector split into its component activities. All graphs are to the same axis scale except design, publishing, film and video and music.

6.1 Design sub-sector

Design is the largest of the creative sub-sectors in Auckland (41% of the sector's employment) and is fairly evenly distributed (once self-employed and contractors are included) between the three major categories, namely: advertising services; related ("other") specialised commercial design services such as graphic design; and architectural services. The total annual employment growth in the design sub-sector in Auckland from 2000 to 2016 averaged 3.3 per cent, similar to the national rate (+3.1% pa). The Auckland share of the nation's design sub-sector (52%) is similar to the sector as a whole (50%). (see Figure 6 and Table 6).

Figure 6: Design employment Auckland and New Zealand, 2000-2016

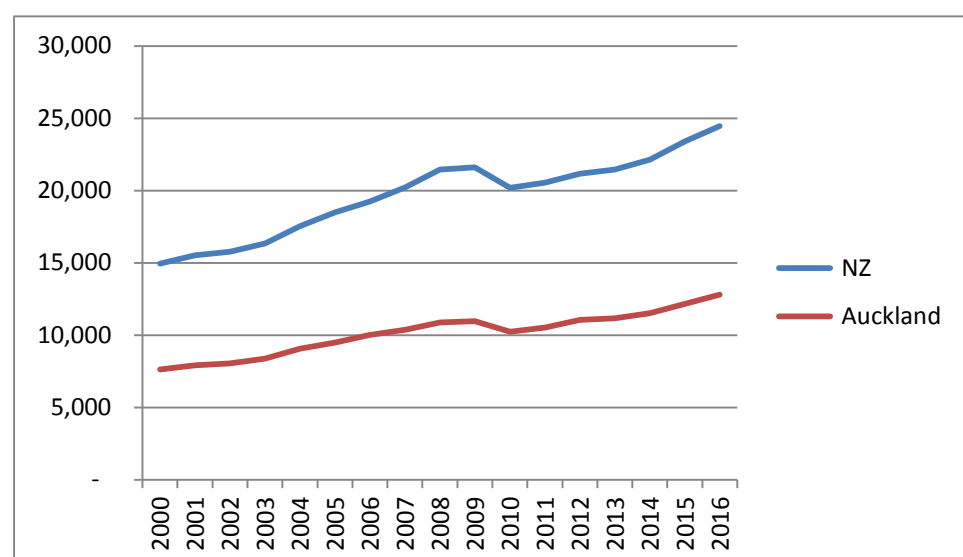


Table 6 also shows the following about design employment and its component activities' growth between 2000 and 2016.

- Advertising Services provided over a third (36%) of design sub-sector employment in Auckland in 2016. The majority (66%) of national employment in this activity is located in Auckland.

¹⁷ Year to March 2000 to 2016

- Nearly half (45%) of the employment growth experienced in design, has occurred within Advertising Services, in which Auckland is growing slightly more rapidly (+4.4% pa) than the rest of New Zealand (+4.1% pa).
- Employment growth in Architectural Services has also been fairly high, averaging 3.7 per cent per year over the past sixteen years. This is however slightly below the national rate (+4.0% pa).
- Other Specialised Design Services (which includes a 13% addition to allow for designers in other ANZSIC categories) have shown more modest growth at 1.9 per cent annually in keeping with the national growth picture (+1.8% pa).

Table 6: Design employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Architectural Services	2,224	3,985	46%	1,761	3.7%	4.0%
Other Specialised Design Services (plus 13%)	3,020	4,091	48%	1,070	1.9%	1.8%
Advertising Services	2,353	4,658	66%	2,305	4.4%	4.1%
Creative Artists, Musicians, Writers and Performers (partial: 4%)	39	62	44%	23	2.9%	2.8%
Total Design	7,636	12,795	52%	5,159	3.3%	3.1%
Total Creative	21,745	30,901	50%	9,156	2.2%	1.6%

6.2 Publishing sub-sector

Publishing employment in Auckland is declining but still significant: publishing makes up 12 per cent of creative sector employment in Auckland. It includes the publication of newspapers, periodicals and books, and authors. Newspaper printing/publishing and periodical publishing together make up three quarters (74%) of the publishing sub-sector in Auckland, and Auckland provides most (73%) of the country's periodical publishing employment. Publishing in New Zealand has been declining fairly steadily since 2000, particularly following the GFC, while at the Auckland level there was a slight uptrend from 2000 to 2005, and a decline only after 2009 (see Figure 7 and Table 7).

Figure 7: Publishing employment Auckland and New Zealand, 2000-2016

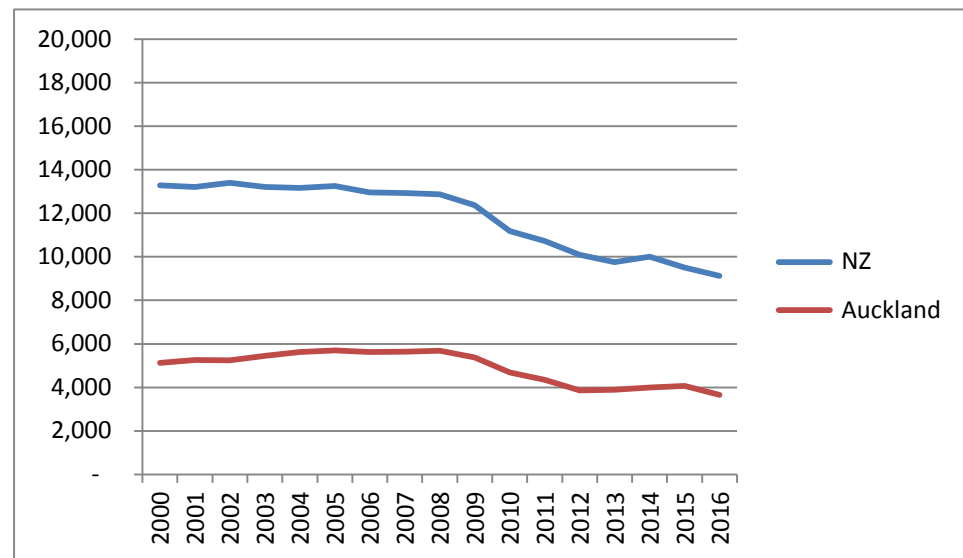


Table 7 also shows the following about publishing employment and its component activities' growth between 2000 and 2016.

- The publishing sub-sector in Auckland is heavily influenced by Newspaper Publishing at 1475 jobs, representing 40 per cent of the sub-sector's employment. From 2000 to 2016 employment in Newspaper Publishing declined by 929 jobs (-3.0% pa), in line with the national decline (-2.9% pa).
- Magazine And Other Periodical Publishing employment has remained more buoyant since 2000 although still falling by an average of 1.5 per cent per year, similar to the national growth rate (-1.4% pa). This has resulted in most (73%) of national employment in periodical publishing still being located in Auckland.
- Together, newspaper and periodical publishing make up 74 per cent of the publishing sub-sector in Auckland; Book Publishing is 13 per cent.
- Writers are the only component of the sub-sector to show growth from 2000 to 2016 (+2.9% pa) and now constitute 11 per cent of the sub-sector – although this might instead reflect growth in artists or musicians rather than actual writers.

Table 7: Publishing employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Newspaper Publishing	2,404	1,475	27%	-929	-3.0%	-2.9%
Magazine and Other Periodical Publishing	1,578	1,239	73%	-339	-1.5%	-1.4%
Book Publishing	716	487	60%	-229	-2.4%	-3.2%
Other Publishing (except Software, Music and Internet)	171	54	22%	-117	-7.0%	-4.0%
Creative Artists, Musicians, Writers and Performers (partial: 26%)	253	400	44%	147	2.9%	2.8%
Total Publishing	5,122	3,655	40%	-1,467	-2.1%	-2.3%
Total Creative	21,745	30,901	50%	9,156	2.2%	1.6%

Note: Newspaper Publishing's Auckland employment in 2000 as previously reported (TR 2013/028) may have included a major company subsequently reclassified as a wholesaler and therefore no longer part of the creative sector as defined in this report.

6.3 Screen production: TV sub-sector

Screen production – TV consists of free-to-air, cable and other subscription TV broadcasting. Collectively these industries account for 9 per cent of employment in the creative sector in Auckland. New Zealand's TV employment is concentrated in Auckland, which has most (86%) of the national workforce as a result of the national broadcasters TVNZ, TV3 and Sky having their head offices there. There has been significant employment growth in the TV sub-sector in Auckland since 2000, partly at the expense of the rest of New Zealand after 2003 (see Figure 8 and Table 8).

Figure 8: TV employment, Auckland and New Zealand, 2000-2016

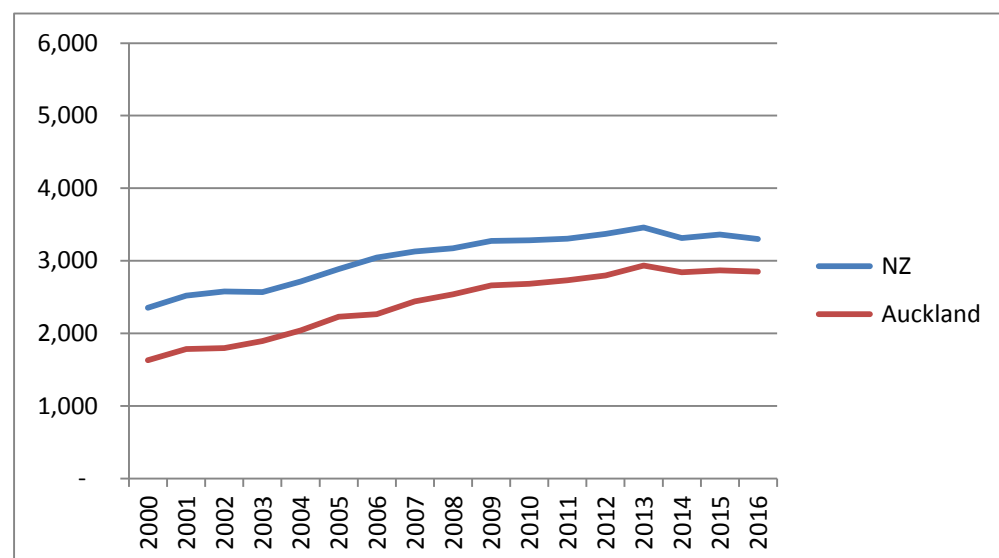


Table 8 also shows the following about TV employment and its component activities' growth between 2000 and 2016.

- Total growth in TV employment in Auckland from 2000 to 2016 was 3.6 per cent annually, higher than the national growth rate of 2.1 per cent annually.
- Cable and Other Subscription Programming employment (largely Sky satellite TV) (+8.2% pa) has grown six times faster than free-to-air employment (+1.4% pa), providing three quarters of total TV employment growth (905 out of 1225) and accounting for nearly half (44%) of total TV employment by 2016 (1261 out of 2853).
- Auckland's growth in the TV sub-sector has been partly at the expense of the rest of New Zealand, which had a fall in net employment of 275 jobs, due entirely to a 58 per cent fall (368 jobs) in free to air employment.

Table 8: TV employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Free-to-Air Television Broadcasting	1274	1592	86%	318	1.4%	-0.2%
Cable and Other Subscription Programming	356	1261	87%	905	8.2%	7.6%
Total TV	1630	2853	86%	1223	3.6%	2.1%
Total Creative	21745	30901	50%	9156	2.2%	1.6%

6.4 Screen production: film and video sub-sector

Screen production – film and video primarily comprises motion picture and video production, and motion picture exhibition. The subsector also includes ancillary post-production services and activities (but not ANZSIC J5512 Motion Picture and Video Distribution), plus Creative Artists, Musicians, Writers and Performers.

Half (49%) of New Zealand's film and video workforce is based in Auckland; Overall growth in film and video employment in Auckland averaged 1.8 per cent a year between 2000 and 2016, similar to the sector's national growth rate (+1.7% pa). Auckland has been slightly less volatile than the rest of New Zealand (see Figure 9 and Table 9).

Figure 9: Film and video employment, Auckland and New Zealand, 2000-2016

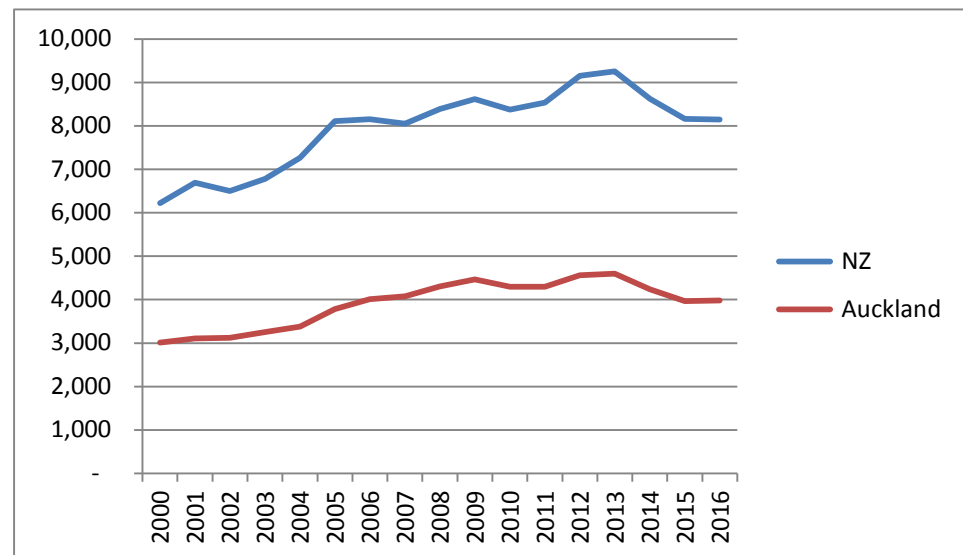


Table 9 also shows the following about film and video employment and its component activities' growth between 2000 and 2016:

- Collectively the film and video sub-sector accounts for 12.9 per cent of employment in the creative sector in Auckland.
- motion picture and video production accounts for the bulk (69%) of the sub-sector's employment in Auckland, much of it self-employed. Over half (61%) of New Zealand's motion picture and video production workforce is based in Auckland, and this share has increased since 2000; Auckland grew by 1.4 per cent per annum, while the rest of New Zealand lost 344 jobs.
- motion picture exhibition (19%) is the next largest component, and between 2000 and 2016 grew only moderately faster (at 1.7% pa) than New Zealand as a whole (1.0%)
- Post-production activities have seen strong growth with a 5.4 per cent annual average; however, this is lower than the extraordinary national growth rate of 14.0 per cent per annum. Auckland in 2000 accounted for the majority (69%) of national employment in these activities, but now its share is only a fifth (19%).

Table 9: Film and video employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Motion Picture and Video Production	2,204	2759	61%	555	1.4%	0.3%
Motion Picture Exhibition	583	768	43%	185	1.7%	1.0%
Creative Artists, Musicians, Writers and Performers (partial: 10%)	97	154	44%	56	2.9%	2.8%
Postproduction Services and Other Motion Picture and Video Activities	129	297	19%	168	5.4%	14.0%
Total Film and video	3,013	3978	49%	964	1.8%	1.7%
Total Creative	21,745	30901	50%	9156	2.2%	1.6%

6.5 Radio sub-sector

Radio employment in Auckland accounts for 46 per cent of national employment, slightly less than other creative industry sub-sectors (50%), but still above the rest of the Auckland economy (35%). Radio broadcasting provides 3.6 per cent of Auckland's creative sector employment.

Employment growth in this sub-sector continued (slowly) in Auckland even after the GFC (2008), despite a downtrend at the national level (see Figure 10 and Table 10).

Figure 10: Radio employment, Auckland and New Zealand, 2000-2012

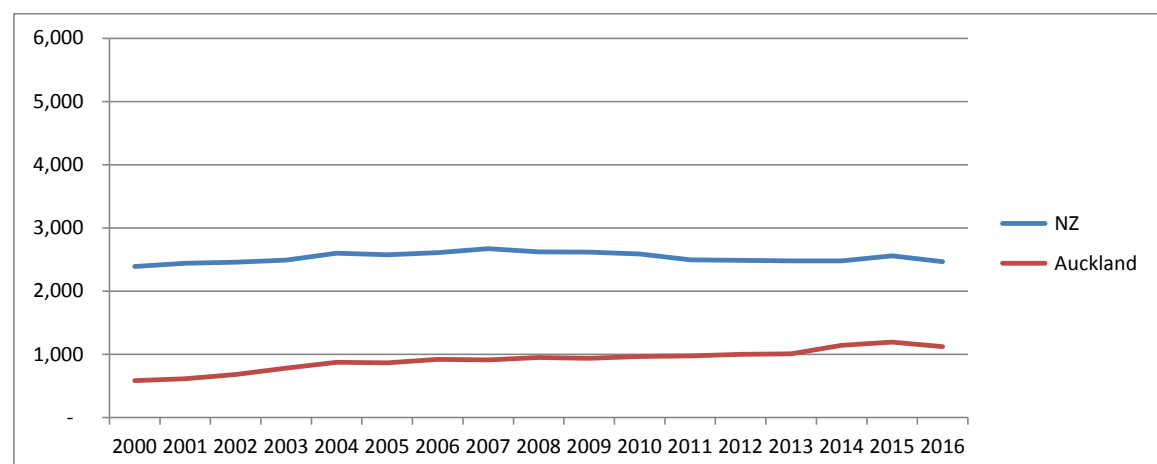


Table 10 also shows the following about radio employment and its component activities' growth between 2000 and 2016.

- Auckland's share of national employment is lower for radio (46%) than the creative sector as a whole (50%), but still well above the total Auckland economy's share (35%).
- Growth in employment in radio broadcasting in Auckland (+4.2% pa) has outpaced national growth, which has been minimal (+0.2% pa), which indicates that Auckland's growth has tended to be mostly at the expense of the rest of New Zealand.

Table 10: Radio employment in Auckland, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Radio Broadcasting	583	1122	46%	539	4.2%	0.2%
Total Creative	21745	30901	50%	9156	2.2%	1.6%

6.6 Digital media sub-sector

Digital media represents those industries primarily involved in computer systems design focused on the internet, plus software and internet publishing and broadcasting¹⁸ (but does not otherwise include telecommunications providers as such). This creative sub-sector accounts for 5.2 per cent of employment in the creative sector in Auckland. Auckland accounts for 55 per cent of the national employment in digital media, slightly more than the creative sector as a whole (50%).

Growth in Auckland has mostly been similar to the national average, but slower just after the GFC (2009 and 2010) and faster in 2016. Overall, growth in the sub-sector in Auckland averaged 9.3 per cent a year since 2000, slightly faster than the national growth (+8.7% pa) but much faster than Auckland's creative sector in total (+2.2% pa) (see Figure 11 and Table 11).

¹⁸ Businesses mainly engaged in the publishing and/or broadcasting of content on the internet in the form of text, audio and video of general or specific interest. These businesses do provide traditional (non-internet) versions of their content.

Figure 11: Digital media employment, Auckland and New Zealand, 2000-2016

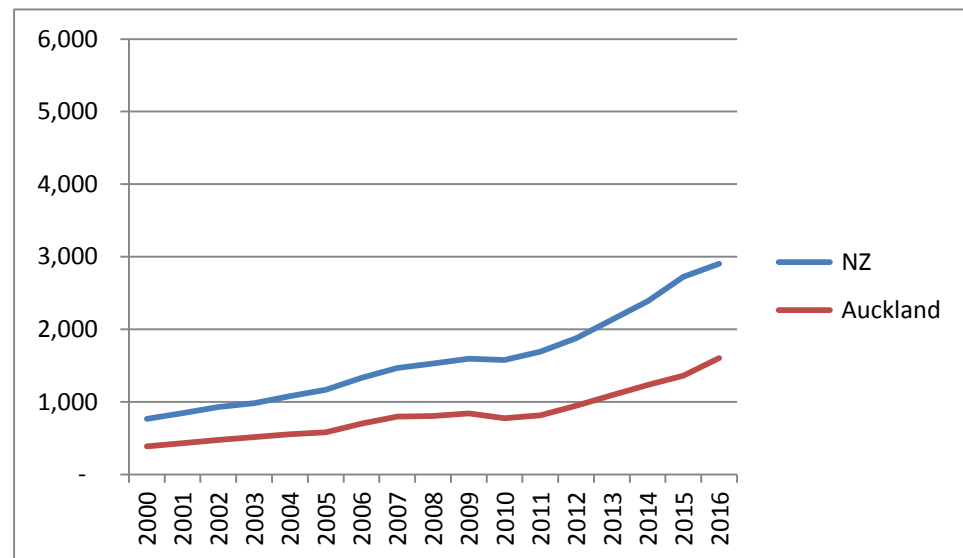


Table 11 also shows the following about digital media employment and its component activities' growth between 2000 and 2016.

- Internet publishing and broadcasting is an emerging sector in Auckland, having grown from an almost zero base in 2000 to 302 jobs in 2016, and accounts for the bulk (79%) of total New Zealand employment in the industry.
- Software publishing is also an emerging sector, but Auckland's share of national employment (54%) is only slightly higher than for the creative sector as a whole (50%)
- Employment in Auckland in computer systems and design related to the production and dissemination of digital media¹⁹ has grown on average by 6.6 per cent per year since 2000 and accounts for half (51%) of the nation's employment in that activity.

Table 11: Digital media employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Software Publishing	11	263	54%	252	21.9%	26.7%
Internet Publishing and Broadcasting	5	302	79%	297	29.2%	20.3%
Computer Systems Design and Related Services (partial: 5% included)	372	1,038	51%	666	6.6%	6.6%
Total Digital media	388	1,603	55%	1,215	9.3%	8.7%
Total Creative	21,745	30,901	50%	9,156	2.2%	1.6%

¹⁹ Calculated as 5 per cent of the total Computer Systems Design and Related Services activity (ANZSIC M70000), as per Auckland City Council, 2009. *Auckland's creative industries: The numbers 2009* which used that ratio based on occupational employment data.

6.7 Performing arts sub-sector

Performing arts includes music and theatre production, performing arts venues, performers and services to the arts. Performing arts makes up 7.5 per cent of employment in the creative sector in Auckland, so employment is relatively small, and growth is concentrated in performing art venues. Employment levels in the sub-sector from 2000 to 2006 were stable or falling, in contrast to the moderate growth trend seen in New Zealand as a whole, but since then Auckland has grown similarly to the national rate (see Figure 12 and Table 12).

However, this sub-sector is particularly problematic for using employment as a proxy for total activity (as described in Appendix 4: Estimating employment); for more details on the difficulties in measuring employment numbers in this specific sub-sector, see Appendix 5: Difficulties with R900200.

Figure 12: Performing arts employment, Auckland and New Zealand, 2000-2016

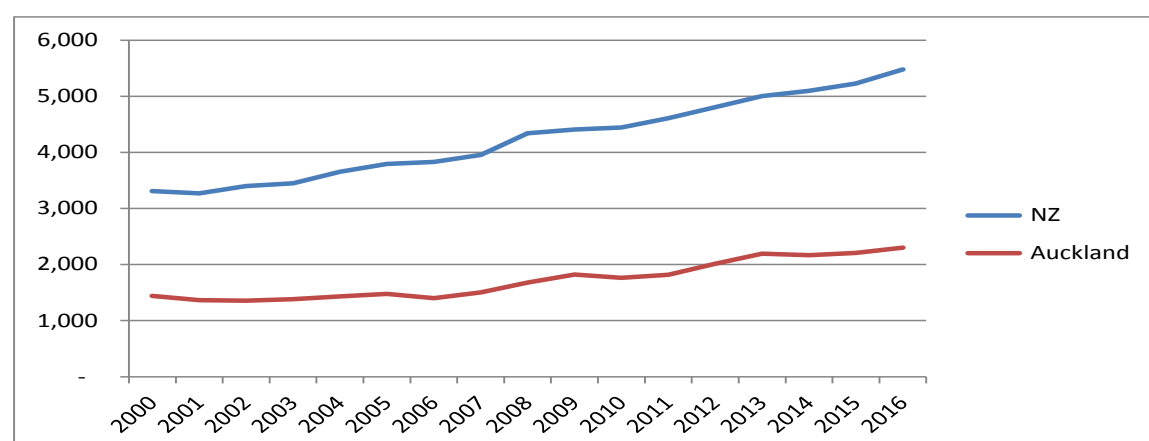


Table 12 also shows the following about performing arts employment and its component activities' growth between 2000 and 2016.

- Employment in the Auckland performing arts sub-sector is split reasonably evenly between venue operations (i.e. theatres, concert halls, entertainment centres), performing arts operation (i.e. the production of theatrical, dance and musical performances etc.) and services to the arts (e.g. casting agencies) plus artists, musicians, writers and performers.
- Overall, employment in the performing arts in Auckland has grown moderately (+3.0% pa) since 2000, similar to the 3.2 per cent annual increase over the same period nationally, and slightly above the rest of Auckland's creative sector (+2.2% pa).
- From 2000 to 2016 performing arts venue operations had stronger annual growth of 3.7 per cent, although the national growth rate for this component was even stronger (5.1% pa).

Table 12: Performing arts employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Performing Arts Operation	468	695	38%	227	2.5%	2.3%
Creative Artists, Musicians, Writers and Performers (partial: 11%)	107	169	44%	62	2.9%	2.8%
Services to the arts (50% of total Creative Artists, Musicians, Writers and Performers)	487	769	44%	282	2.9%	2.8%
Performing Arts Venue Operation	377	670	44%	293	3.7%	5.1%
Total Performing arts	1,439	2,303	42%	864	3.0%	3.2%
Total Creative	21,745	30,901	50%	9156	2.2%	1.6%

6.8 Visual arts sub-sector

The visual arts sub-sector covers photographic studios, visual arts and crafts. It makes up 6.8 per cent of employment in the creative sector in Auckland. Auckland's share of the national sub-sector (40%) more than matches its population share.

Employment in this sub-sector was largely flat from 2004 to 2007 in both Auckland and New Zealand, but Auckland missed out on the modest national growth from 2007 to 2010, following which both Auckland and New Zealand had modest growth. Overall, employment in this sub-sector in Auckland increased by 427 employees (+1.4% pa) between 2000 and 2016, similar to the New Zealand average (+1.6% pa) (see Figure 13 and Table 13).

Figure 13: Visual arts employment Auckland and New Zealand, 2000-2016

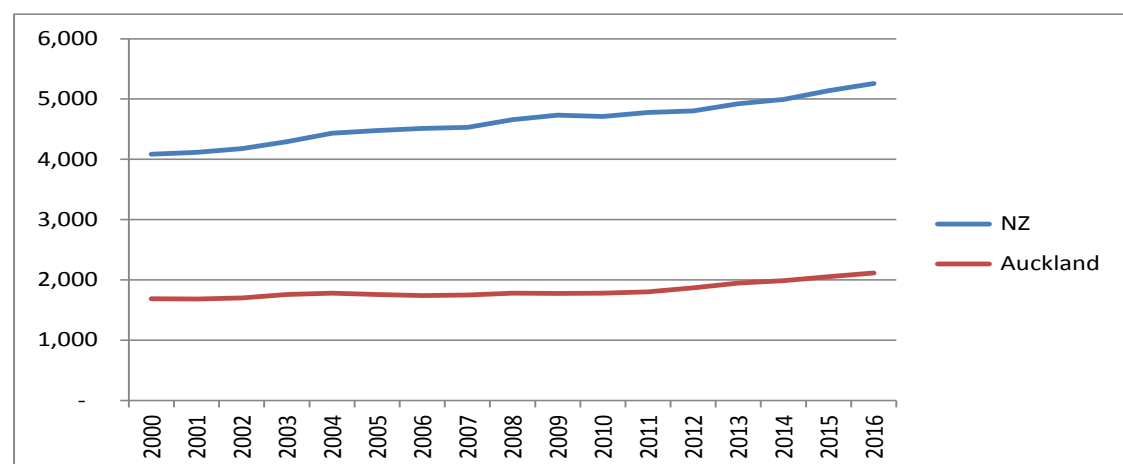


Table 13 also shows the following about visual arts employment and its component activities' growth between 2000 and 2016.

- Employment in the visual arts sub-sector is predominantly in photographic studios and in creative artists, followed by jewellery and silver manufacturing, and museums/galleries.

- Ceramic product manufacturing has a higher share of national employment in Auckland (46%) than most other visual arts activities. However, employment in this activity has been declining on average by 0.3 per cent annually since 2000 in Auckland, although not quite as bad as the national employment situation (-1.8% pa).
- Photographic services also have a relatively high share of national employment located in Auckland (48%), and grew at a slightly higher rate than the creative sector in both Auckland (+2.6% pa) and nationally (+2.4% pa). Much of photographic employment is likely to be self-employed.
- Jewellery and silver manufacturing has declined in Auckland (-2.1% pa) but grew slightly in the rest of New Zealand, resulting in a slight fall nationally (-0.8% pa).
- Museum/gallery employment in Auckland is the only visual arts activity to show strong net growth: on average 4.2 per cent per year, a growth rate somewhat higher than the national rate of 2.8 per cent.

Table 13: Visual arts employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Other Ceramic Product Manufacturing (partial: 33%)	93	88	46%	-5	-0.3%	-1.8%
Jewellery and Silverware Manufacturing	526	345	33%	-181	-2.6%	-0.8%
Professional Photographic Services	597	894	48%	297	2.6%	2.4%
Museum Operation (partial: 32%)	113	219	26%	107	4.2%	2.8%
Creative Artists, Musicians, Writers and Performers (partial: 37%)	360	569	44%	209	2.9%	2.8%
Total Visual arts	1,689	2,115	40%	427	1.4%	1.6%
Total Creative	21,745	30,901	50%	9,156	2.2%	1.6%

6.9 Music sub-sector

Music includes sound recording studios, recorded media and publishing, and composers. Music provides 1.5 per cent of employment in Auckland's creative sector. However, it is likely that some musicians may be classified under the performing arts sub-sector. From a very small base, music in Auckland has experienced even higher employment growth rates than the rest of New Zealand between 2000 and 2016 – but has been flat or declining since 2012 (see Figure 14 – note that scale differs from preceding sub-sectors – and Table 14).

Figure 14: Music employment, Auckland and New Zealand, 2000-2016

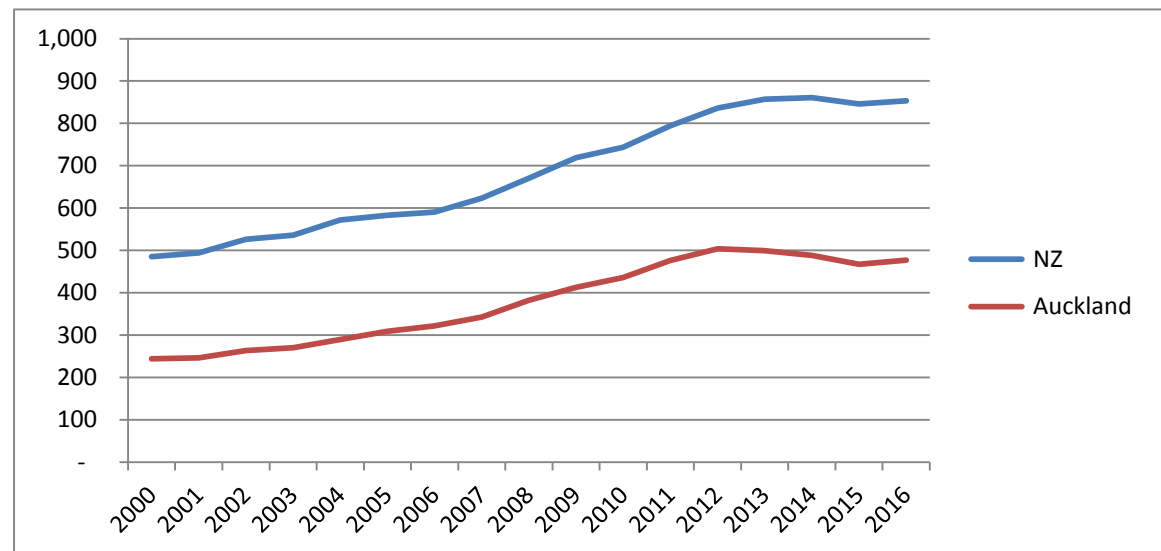


Table 14 also shows the following about music employment and its component activities' growth between 2000 and 2016.

- Music has a greater share of its national employment in Auckland (56%) than the rest of the creative sector. Music in Auckland has also experienced higher employment growth rates (+4.3% pa) than the rest of New Zealand (with the national rate being 3.6%) between 2000 and 2016.
- Nearly half of the sector's growth comes from the reproduction of recorded media such as CD, DVD and tape (+18.9% pa – but from a very small baseline). A quarter (24%) of employment in the music sub-sector is now in the reproduction of recorded media.
- The largest component of the music sector's employment is musicians and performers (39%), which had a solid annual growth of 2.9 per cent.
- The other sizable share of the Auckland music sub-sector is music and other sound recording activities, in which Auckland has nearly three quarters (71%) of the nation's employment. Almost all of New Zealand's growth from 2000 to 2016 (+1.8%) was due to Auckland's growth (2.6%).

Table 14: Music employment in Auckland by activity, 2000-2016

	2000	2016	Share of NZ 2016	Growth 2000-16	Annual growth 2000-16	NZ annual growth 2000-16
Reproduction of Recorded Media	7	112	64%	105	18.9%	13.0%
Music and Other Sound Recording Activities	120	180	71%	60	2.6%	1.8%
Creative Artists, Musicians, Writers and Performers (partial: 12%)	117	185	44%	68	2.9%	2.8%
Total Music	244	477	56%	233	4.3%	3.6%
Total Creative	21,745	30,901	50%	9,156	2.2%	1.6%

7. Simple Location Quotients (SLQs)²⁰

This section compares Auckland's shares of New Zealand's creative sub-sector employment to the total Auckland economy's share of New Zealand's total employment, using data for 2016 and also for changes since 2000.

7.1 Creative sector SLQ compared to 54-industries

The Auckland creative sector in 2016 has a Simple Location Quotient (SLQ)²¹ of 1.43. This signifies that Auckland's share of New Zealand's employment is 1.43 times as much (43% higher) for the creative sector, as for the total economy (all sectors combined). Put another way, the creative sector's contribution to the total economy's employment, is 1.43 times as much (40% higher) in Auckland, as it is in New Zealand as a whole.

By way of comparison, the highest Auckland SLQ among the standard ANZSIC 2-digit (54 industries) is 1.70 for Insurance; the creative sector would be between Rail, Water, Air and Other Transport (1.42), which is the seventh highest, and Primary Metal and Metal Product Manufacturing (eighth with 1.37).

The highest possible SLQ, namely for an industry based solely in Auckland, would in 2016 be 2.9, and the lowest is always zero).

7.2 SLQs by 1-digit industry and creative sector

Relative to the 19 ANZSIC 1-digit industries A to S, the creative sector SLQ (1.43) is third highest, after J: Information Media and Telecommunications (1.51) and F: Wholesale Trade (1.46), but ahead (slightly) of K: Financial and Insurance Services (1.41) and of M: Professional, Scientific and Technical Services (1.31). (See Table 15).

The creative sector SLQ is so high, partly because large portions of it are from the high-SLQ industries J: Information Media and Telecommunications, and M: Professional, Scientific and Technical Services. However, the sector's average is brought down by also including components from C: Manufacturing and R: Arts and Recreation Services, whose SLQs are substantially lower (0.98 and 0.92 respectively).

²⁰ Year to March 2000, 2008 and 2016

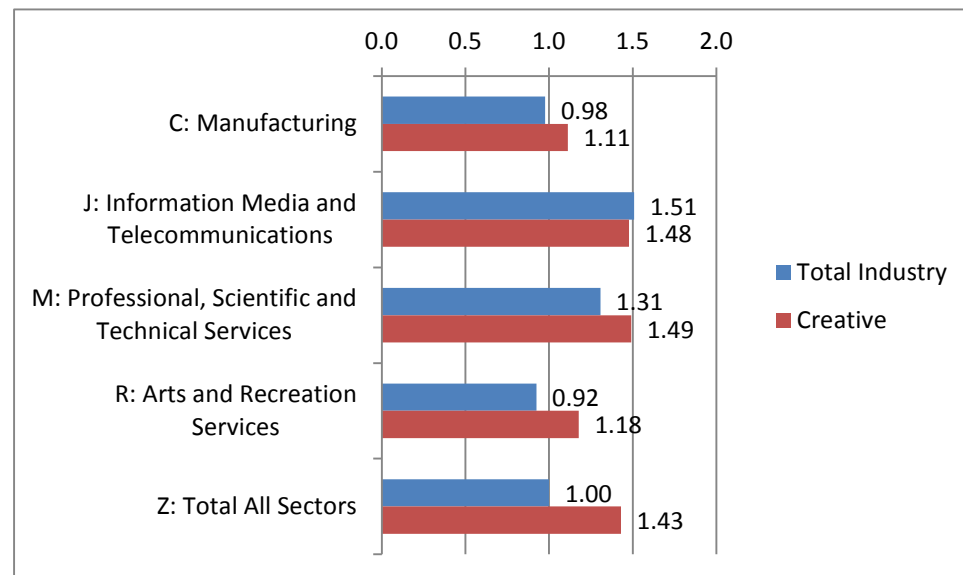
²¹ See Appendix 1: Glossary for further explanation of SLQs

Table 15: Simple Location Quotients (SLQ) by industry, Auckland, 2016

	Industry	Auckland	New Zealand	Share	SLQ
J	Information Media and Telecommunications	21,526	40,929	52.6%	1.51
F	Wholesale Trade	60,132	117,974	51.0%	1.46
	<i>Creative Sector</i>	30,901	61,983	49.9%	1.43
K	Financial and Insurance Services	32,052	65,093	49.2%	1.41
M	Professional, Scientific and Technical Services	102,039	223,950	45.6%	1.31
N	Administrative and Support Services	50,414	118,732	42.5%	1.22
I	Transport, Postal and Warehousing	39,398	98,676	39.9%	1.14
L	Rental, Hiring and Real Estate Services	21,760	55,532	39.2%	1.12
Z	Total all industries	824,200	2,363,428	34.9%	1.00
H	Accommodation and Food Services	51,910	151,807	34.2%	0.98
G	Retail Trade	73,915	216,652	34.1%	0.98
C	Manufacturing	79,339	232,854	34.1%	0.98
P	Education and Training	62,294	184,124	33.8%	0.97
S	Other Services	29,497	88,390	33.4%	0.96
R	Arts and Recreation Services	14,345	44,519	32.2%	0.92
E	Construction	68,169	211,736	32.2%	0.92
Q	Health Care and Social Assistance	72,474	233,191	31.1%	0.89
O	Public Administration and Safety	31,711	111,039	28.6%	0.82
D	Electricity, Gas, Water and Waste Services	4,203	15,119	27.8%	0.80
A	Agriculture, Forestry and Fishing	8,719	147,492	5.9%	0.17
B	Mining	303	5,617	5.4%	0.15

Further boosting the sector's SLQ is the fact that the creative sector components of the four relevant ANZSIC 1 digit industries tend to have higher SLQs than those industries as a whole. The exception is J: Information Media and Telecommunications, which has a total SLQ of 1.51, slightly more than its creative component's SLQ of 1.48. In other words, Auckland has a strong advantage for the creative component of Information Media and Telecommunications, but an even higher comparative advantage for the non-creative component. (See Figure 15).

Figure 15: SLQs of industries and their creative components, Auckland, 2016



7.3 Creative sector SLQ changes by sub-sector

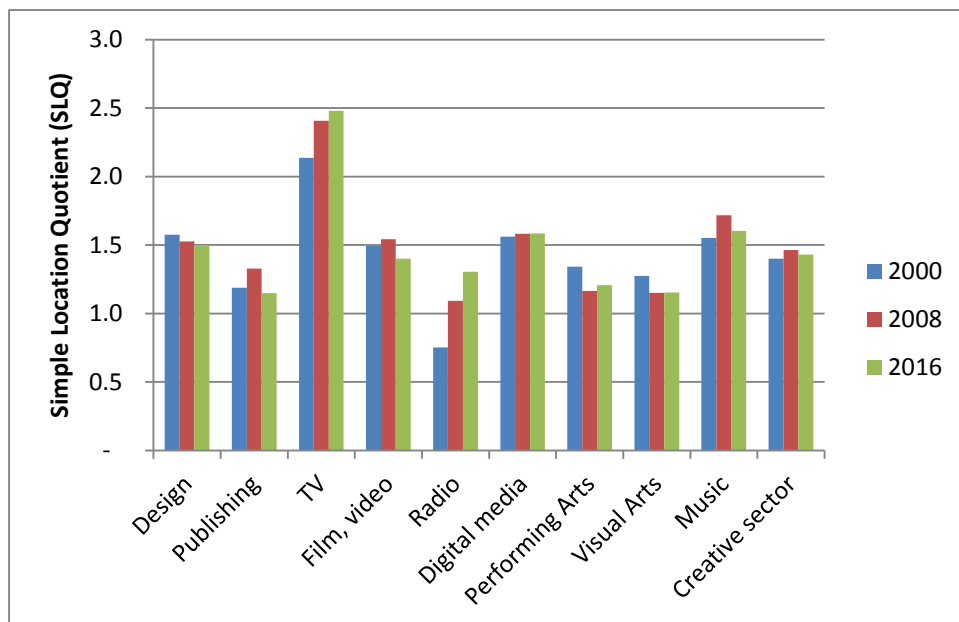
The Auckland creative sector SLQ is similar in 2016 to 2000, due to the Auckland and New Zealand creative sectors growing at similar rates to the rest of the Auckland and New Zealand economies respectively. Or put another way, the Auckland and New Zealand creative sectors maintained roughly constant (but different) shares of the Auckland and New Zealand economies respectively. This is also broadly true for most but not all of the creative sub-sectors.

The SLQs of the creative sub-sectors in Auckland in 2016 are all between 1.2 and 1.6, apart from Publishing (1.1) and TV (2.5), and had the following main changes from 2000 to 2016 (see Figure 16):

- Design SLQ has seen a marginal decline in SLQ, but still near or above the rest of the sector (except TV); Auckland's employment growth was high for design, but so was New Zealand's.
- Publishing SLQ now is similar to 2000 (significantly below the creative sector average), following a small increase between 2000 and 2008 that was subsequently reversed.
- TV has an even higher SLQ now than in 2000, due to its employment having grown while the rest of New Zealand shrank.
- Film and video SLQ has stayed close to the sector average – both Auckland and New Zealand had mediocre employment growth.

- Radio SLQ has jumped from being only half the creative sector average, to nearly catching up to the creative sector average, due to radio employment in Auckland having grown quite quickly (in percentage terms) – and primarily at the expense of the rest of New Zealand.
- Digital media SLQ has stayed slightly above the sector average – both Auckland and New Zealand had very strong employment growth
- Performing arts SLQ has fallen a bit below the sector average
- Visual arts SLQ has fallen further below the sector average
- Music SLQ had by 2016 lost most of the (small) gains to 2008, but still leaving it slightly above the sector average.

Figure 16: Simple Location Quotients (SLQ) by sub-sector, 2000 – 2008-2016



8. Sub-sector employment by location²²

This section contains an analysis of the distribution and concentration of creative sector employment in Auckland in 2016, at both the sector and sub-sector levels (plus selected component activities within sub-sectors). It divides Auckland into the Waitematā Local Board (LB) area and all other LB areas combined.

8.1 Concentration of creative sector employment

The location of creative sector employment in Auckland is concentrated primarily in Waitematā Local Board (52.8% of Auckland's total), which is even greater than its employment share of Auckland for all sectors as a whole (23.8%).

As a consequence, Waitematā is not only a major employment area for all sectors of the economy (including creative), but also has a relatively high proportion of its employment devoted to the creative sector (8.3%) compared to the Auckland region as a whole (3.7% of whose employment is in the creative sector).

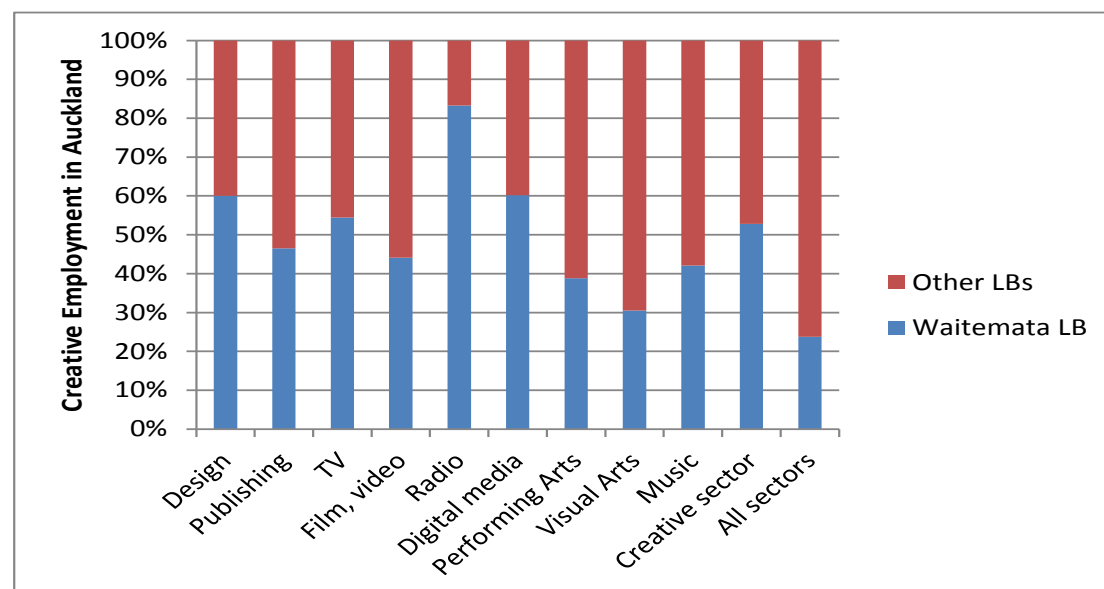
Table 16: Creative sub-sectors employment by location, 2016

	Waitematā Local Board	Auckland region	Waitematā LB share of Auckland	Sub- sector share of Waitematā	Sub- sector share of Auckland
Design	7,680	12,795	60.0%	47.0%	41.4%
Publishing	1,701	3,655	46.5%	10.4%	11.8%
Screen Production: TV	1,554	2,853	54.5%	9.5%	9.2%
Screen production: Film, video	1,754	3,978	44.1%	10.7%	12.9%
Radio	934	1,122	83.2%	5.7%	3.6%
Digital media	965	1,603	60.2%	5.9%	5.2%
Performing Arts	895	2,303	38.8%	5.5%	7.5%
Visual Arts	646	2,115	30.5%	4.0%	6.8%
Music	201	477	42.1%	1.2%	1.5%
Total Creative	16,329	30,901	52.8%	100.0%	100.0%
Total Economy	195,873	824,190	23.8%	n/a	n/a

²² Year to March 2016. Source: Auckland Council calculations from Infometrics, 2017. *Waitematā Local Board regional economic profile 2016*.

Waitematā's share of Auckland's creative sector employment varies between sub-sectors, but even the lowest (visual arts: 31% and performing arts 39%) are substantially higher than Waitematā's average for all sectors (23.8%). The highest sub-sector is radio, where Waitematā has over four fifths (83%) of Auckland's employment, followed by design and digital media (both 60%). Waitematā is also home to half of Auckland's screen production employment, with the share being even higher for TV (54%) and a bit lower for film and video (44%) (see Table 16 and Figure 17).

Figure 17: Employment concentrations of creative sub-sectors by location, 2016



Within the various creative sub-sectors, some component activities are concentrated in Waitematā more than others. Both the highest and the lowest employment concentrations are in the TV sub-sector, where Waitematā has nearly all (94.2%) of Auckland's Free-to-Air Television jobs, but almost none (4.3%) of its Cable and Other Subscription Programming jobs. Next highest (i.e. apart from free to air TV) are Waitematā's shares of Auckland's employment in:

- Postproduction Services and Other Motion Picture and Video Activities (92.6%) (in the film and video sub-sector)
- Museum Operation (92.3%) (visual arts sub-sector)
- Radio Broadcasting (83.2%) (radio)
- Reproduction of Recorded Media (82.1%) (music)
- Performing Arts Venue Operation (81.8%) (performing arts).

Conversely, Waitematā's share of Auckland's employment is below even its all-sectors average (23.8%), in the following component activities (as well as cable TV):

- Creative Artists, Musicians, Writers and Performers (9.6%) (various sub-sectors)
- Motion Picture Exhibition (15.0%) (film and video sub-sector)
- Book Publishing (19.3%) (publishing).

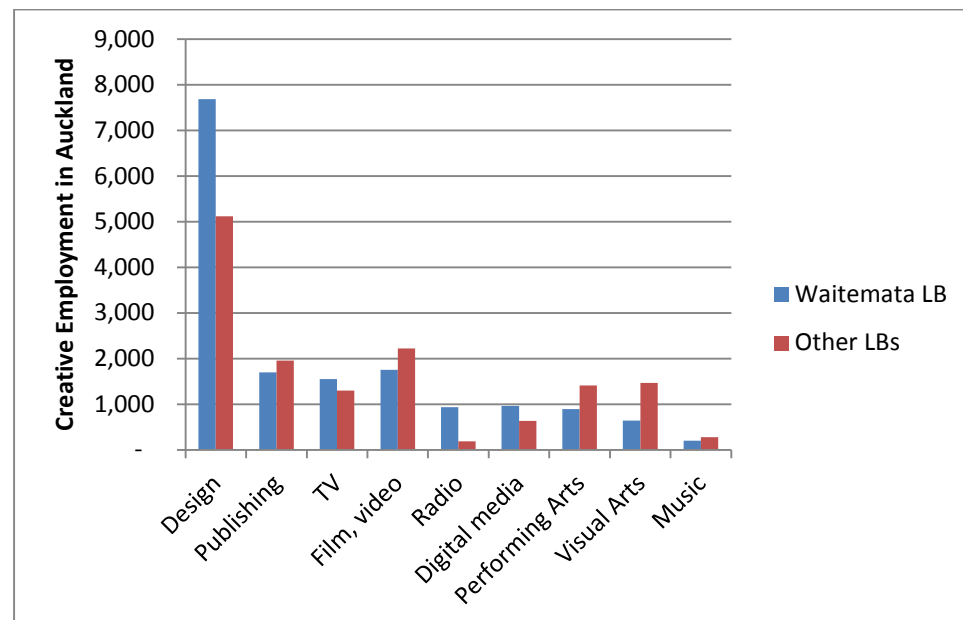
In all other component activities of the various creative sub-sectors, Waitematā's share of Auckland employment is greater than for its all-sectors average, ranging from Professional Photographic Services (24.4%) (visual arts) to Advertising Services (75.4%) (design).

8.2 Shares of creative sub-sectors in Waitematā

The combined effect of design being the largest creative sub-sector in Auckland, and design having an above average concentration in Waitematā Local Board, results in the design sub-sector constituting nearly half (47.0%) of Waitematā's creative sector employment. (In fact, Waitematā's design sub-sector (7,680) accounts for a quarter of Auckland's entire creative sector employment (30,901)). (See Table 15 and Figure 18.)

The share of Waitematā's creative sector employment accounted for by publishing (10.4%) and film and video (10.7%) are only slightly less than those sub-sectors' shares of the sector for Auckland, and for TV is slightly more (9.5%), so these three sub-sectors plus design together comprise more than three quarters (77.7%) of the Waitematā creative sector.

Figure 18: Employment concentrations of creative sub-sectors by location, 2016



9. GDP and productivity²³

This section describes the GDP²⁴ directly generated in Auckland by the creative sector and each creative sub-sector in 2016, how it has changed over time and the resulting productivity (GDP per employee), in absolute terms and relative to the sector and the total economy.

The creative sector's stand-alone contribution to Auckland's GDP is estimated at \$2.8 billion for 2016, which is 3.3 per cent of Auckland's total GDP – a modest increase from 3.0 per cent in 2000. The creative sector is also an enabler of economic activity in other sectors.

9.1 GDP and productivity – sector compared to other industries

Compared to the standard ANZSIC “1-digit” list of 19 industries²⁵, GDP in 2016 in Auckland's creative sector (\$2.80 billion) is less than Education and Training (eleventh highest at \$3.53 billion) but more than Public Administration and Safety (twelfth at \$2.39 billion). (See Table 17), which includes GDP but is ranked in order of productivity as measured by GDP per employee).

The creative sector in 2016 contributes a lower share of the region's GDP (3.3%) than its share of employment (3.7%). Consequently, people working in Auckland's creative sector generate on average 11 per cent less annual GDP per worker (\$90,708) than workers in Auckland's other sectors (\$101,733). However, workers include part-timers, so the productivity figures on a per-hour worked basis could look different (but are not available at this level of detail).

Productivity (GDP per employee) in the creative sector ranks below the top seven ANZSIC 1-digit industries, but above the bottom twelve – midway between Transport, Postal and Warehousing (seventh at \$102,317) and Professional, Scientific and Technical Services (eighth at \$83,419).

²³ Year to March 2016, and 2000 to 2016.

²⁴ GDP (Gross Domestic Product) is the value added to the economy by all the goods and services provided in one year, and is a standard measure of the economic contribution of an industry sector. For further definition of GDP see Appendix 1: Glossary.

²⁵ Plus Owner-Occupied Property Operation.

Table 17: Auckland industries and creative sector, GDP and productivity, 2016

Sector (ANZSIC 1-digit, Auckland)	GDP \$2010 million	Employment	GDP/Employee
Rental, Hiring and Real Estate Services	6,905	21,760	317,320
Electricity, Gas, Water and Waste Services	1,001	4,203	238,101
Financial and Insurance Services	7,386	32,052	230,444
Information Media and Telecommunications	4,523	21,526	210,110
Wholesale Trade	6,511	60,132	108,279
Manufacturing	8,267	79,339	104,194
Transport, Postal and Warehousing	4,031	39,398	102,317
<i>Creative sector</i>	2,803	30,901	90,708
Professional, Scientific and Technical Services	8,512	102,039	83,419
Mining	25	303	83,280
Arts and Recreation Services	1,163	14,345	81,098
Public Administration and Safety	2,390	31,711	75,371
Health Care and Social Assistance	4,582	72,474	63,225
Construction	4,194	68,169	61,525
Education and Training	3,529	62,294	56,649
Retail Trade	4,114	73,915	55,658
Other Services	1,631	29,497	55,303
Administrative and Support Services	2,055	50,414	40,769
Accommodation and Food Services	1,721	51,910	33,156
Agriculture, Forestry and Fishing	269	8,719	30,904
Owner-Occupied Property Operation	4,726	0	n/a
Unallocated	6,312	0	n/a
Total all sectors[1]	83,848	824,200	101,732

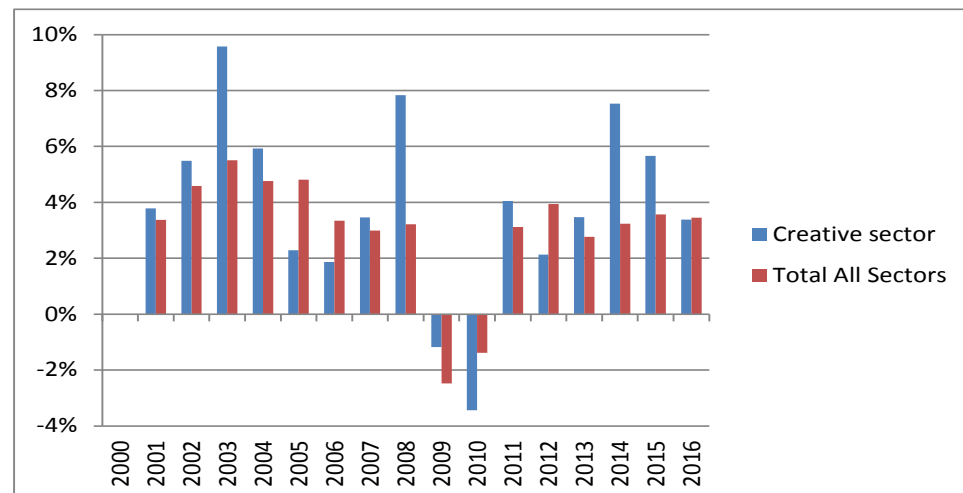
[1] Creative sector is also captured in other sectors, so total is net of double counting.

9.2 Sector GDP growth over time

Between 2000 and 2016, the GDP contributed by Auckland's creative sector grew by 82 per cent, which is an average compound annual growth rate (CAGR) of 3.8 per cent. This was moderately higher than the GDP growth of the total Auckland economy including all sectors, over the same period (61%, with CAGR 3.0%). In some years the sector grew by much more, and in others much less²⁶ (see Figure 19).

²⁶ although this may also include fluctuations arising from Infometrics' GDP estimation methodology at this fine-grained level of detail

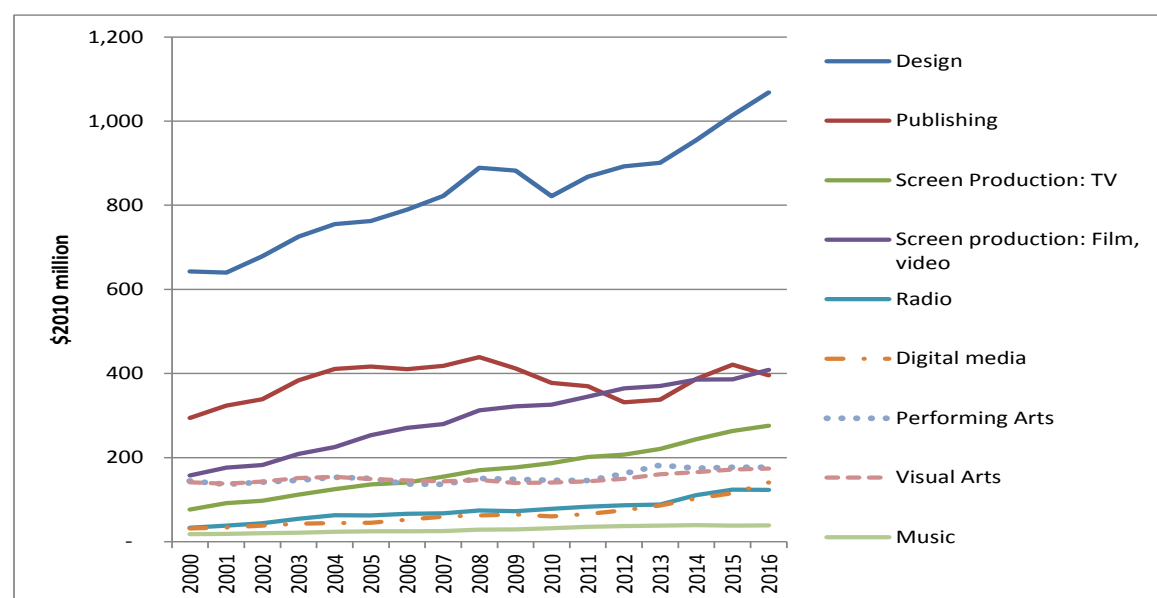
Figure 19: GDP growth rates creative versus all sectors, Auckland 2000-2016



9.3 GDP growth over time by sub-sector

The past and present contributions to GDP vary markedly across the creative sub-sectors, with design, publishing and screen production (TV and also film and video) providing much greater shares than the others. GDP growth from 2000 to 2016 was strong for screen production (TV and also film and video) in both dollar and annual percentage terms, while design had a more moderate growth rate but from a higher base. Publishing's moderate GDP growth up to 2008 was followed by a major drop from which it has barely recovered, leaving only a modest net growth in both dollars and average annual percentage terms. Radio, digital media and to a lesser extent music had high rates of GDP growth, but made only modest contributions to the sector's growth in dollar terms due to their low starting points. (See Figure 20).

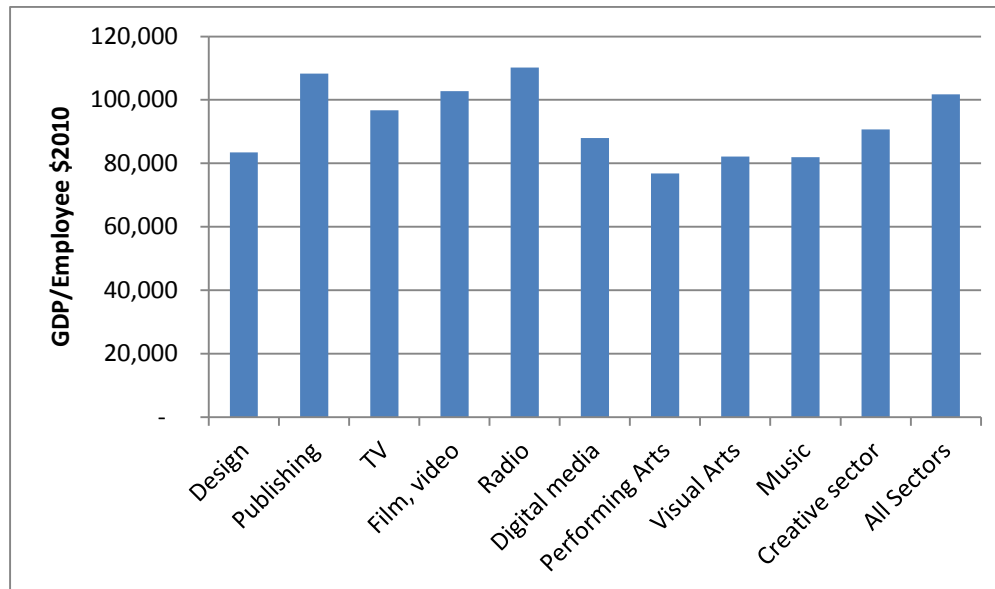
Figure 20: Contribution to Auckland's GDP by creative sub-sector, 2000-2016



9.4 GDP and productivity by sub-sector

Productivity (GDP per employee) in the creative sector in Auckland in 2016 varies significantly between sub-sectors, from \$77,000 for performing arts, to \$110,000 for radio. Most creative sub-sectors are below the all-sectors (total economy) average of \$102,000. (see Figure 21)

Figure 21: Productivity of Auckland's creative sub-sectors, 2016



The GDP contribution share of each creative sub-sector can be compared to its employment share for Auckland in 2016, relative to the sector as a whole. A ratio above one means a sub-sector has a higher share of GDP than employment, relative to the region's total creative sector; therefore, each worker on average generate a higher GDP in that sub-sector, than for the region's creative sector as a whole. This is mathematically equivalent to the ratio of the sub-sector's productivity (GDP/Employee) to the productivity of the sector as a whole. (see Table 18).

Table 18: Auckland creative sub-sectors employment and GDP contributions, 2016

Creative sub-sector	GDP \$2010 million	Employment	GDP/Emp	Emp. share	GDP share	GDP/Emp Ratio
Design	1,068	12,795	83,476	41.4%	38.1%	0.92
Publishing	396	3,655	108,279	11.8%	14.1%	1.19
Screen Production: TV	276	2,853	96,775	9.2%	9.9%	1.07
Screen production: Film, video	409	3,978	102,740	12.9%	14.6%	1.13
Radio	124	1,122	110,160	3.6%	4.4%	1.21
Digital media	141	1,603	87,962	5.2%	5.0%	0.97
Performing Arts	177	2,303	76,797	7.5%	6.3%	0.85
Visual Arts	174	2,115	82,155	6.8%	6.2%	0.91
Music	39	477	81,996	1.5%	1.4%	0.90
Total Creative	2,803	30,901	90,708	100.0%	100.0%	1.00
Total All Sectors	83,848	824,190	101,733	3.7%	3.3%	1.12

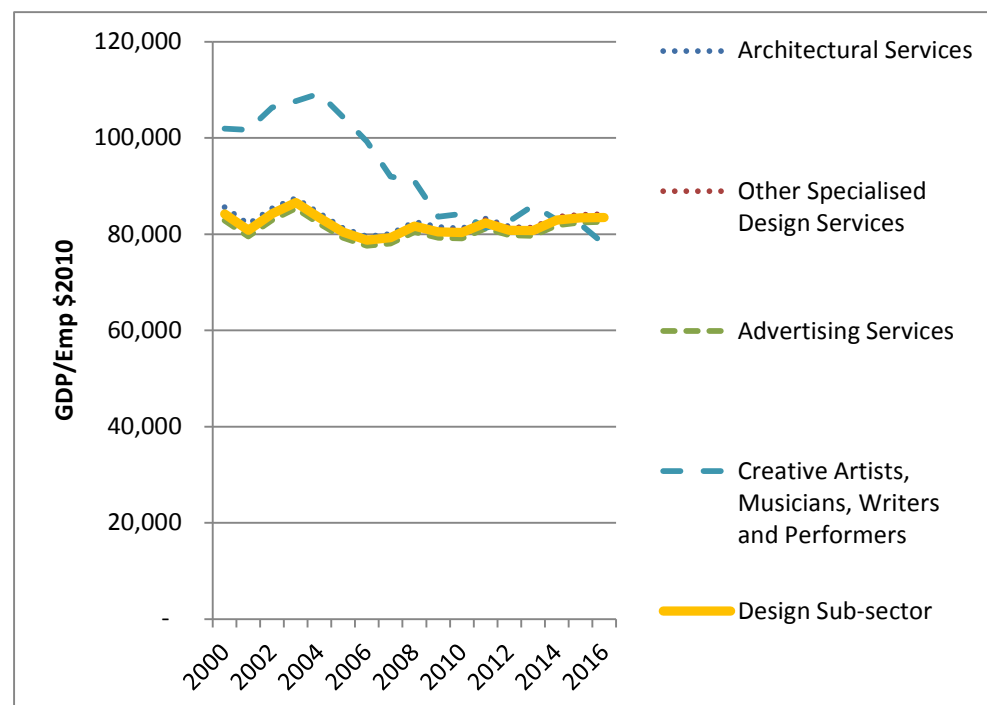
Table 18 reflects the following.

- Auckland's total economy is 1.12 times more productive (annual GDP per worker, including part-timers) than the creative sector. Therefore the creative sector is 11 per cent less productive (annual GDP per worker, including part-timers) than the rest of Auckland's economy.
- Collectively the media industries of screen production TV, film and video, radio and digital media account for 34 per cent of the creative sector's GDP in Auckland, which is slightly higher than their employment share, 31 per cent.
- TV has slightly above average labour productivity (\$97,000 GDP per worker), while film and video is slightly higher still (\$103,000). Film and video has a high proportion of workers (per Infometrics, including self-employed) who are not ECs (per Statistics New Zealand, excluding self-employed) – see Appendix 4: Estimating employment for further details.
- Design at \$1,068 million makes the single greatest contribution to the creative sector's GDP, representing 38.1 per cent of Auckland's creative sector GDP. However, this is lower than design's share of employment (41.4%), and reflects an 8 per cent lower output per employee (\$83,000) than the overall creative sector (\$91,000).
- Music (i.e. sound recording studios, recorded media manufacturing and composers) makes the smallest contribution to GDP, accounting for only 1.4 per cent of the creative sector's GDP (\$39m).

9.5 Spotlight on Design sub-sector GDP and productivity

The design sub-sector's below-average productivity is due to ongoing below average productivity from all of the component services: Advertising Services, Architectural Services and Other Specialised Design Services (plus also creative artists and writers). (see Figure 22).

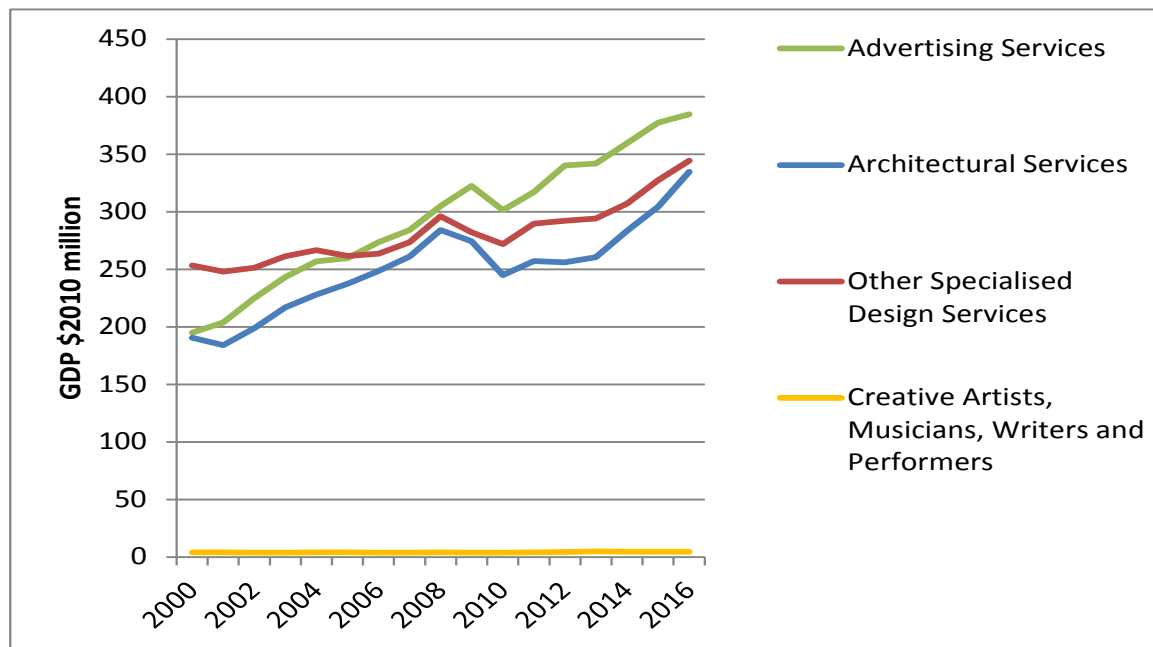
Figure 22: Auckland design sub-sector productivity by component, 2000-2016



GDP growth for the component activities of design reflects the following:

- Advertising Services provides over a third of the design sub-sector's GDP, and maintains a very strong GDP growth trend (driven by rising employment and fairly stable productivity)
- Architectural Services had strong GDP growth pre-GFC, then fell and plateaued, but resumed strong growth after 2013.
- Other Specialised Design Services has averaged more modest GDP growth, to be overtaken by Advertising Services, and almost caught by Architectural Services.
- Creative artists etc generate minimal design GDP, due to low proportions being employed in the design sub-sector. (see Figure 23).

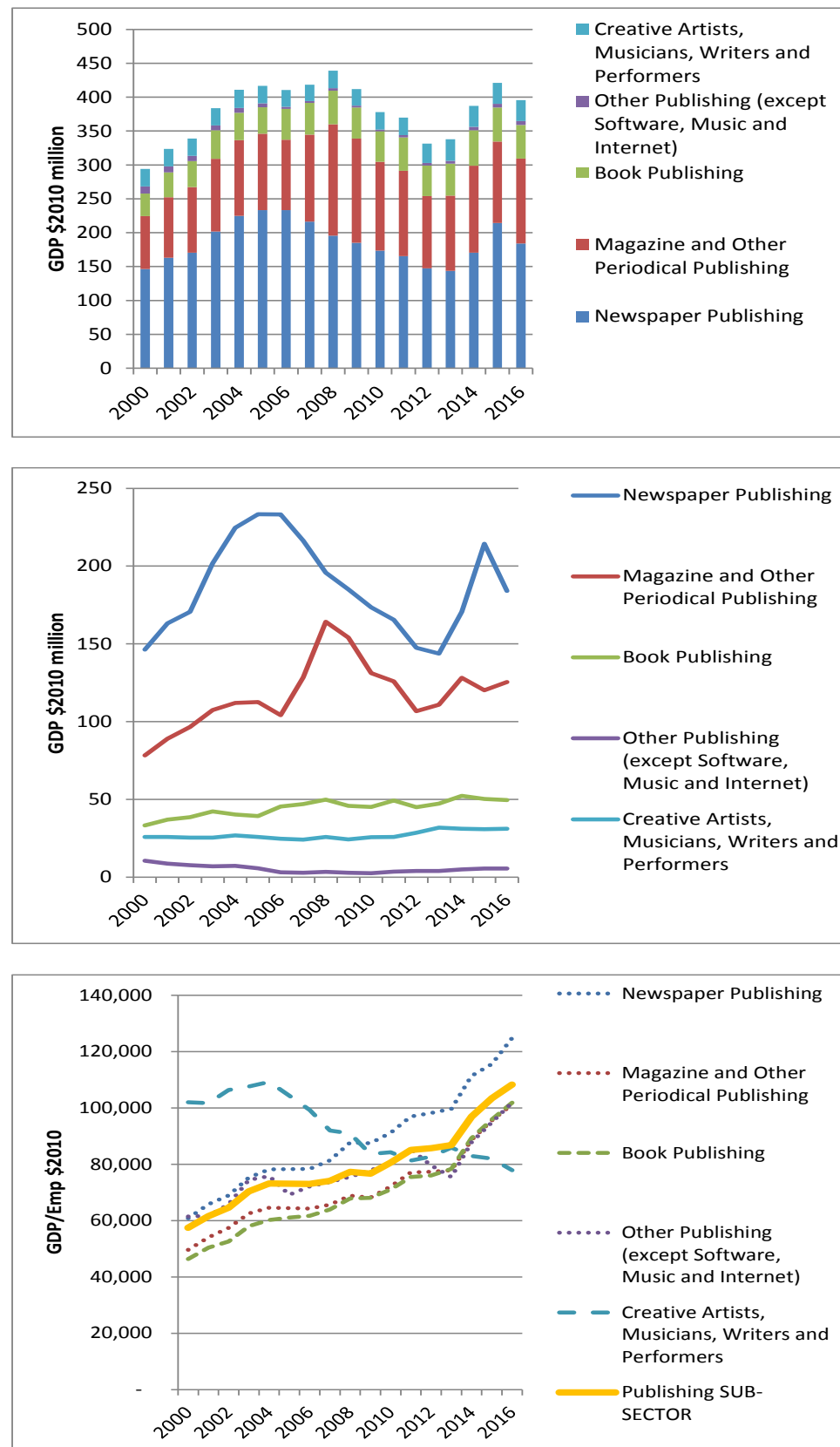
Figure 23: Auckland design sub-sector GDP by component, 2000-2016



9.6 Spotlight on Publishing sub-sector GDP and productivity

The dramatic decline in publishing employment (2000 to 2016) has been more than offset by productivity improvements; GDP grew from 2000 to 2005, and the fall after 2008 was largely reversed by 2015. Since 2008 the strong GDP declines for newspapers and to a lesser extent magazines, has been partially offset by growth in creative writers and relative stability in book publishing. (see Figure 24).

Figure 24: Auckland publishing GDP by component, 2000-2016



9.7 Changes in sub-sector GDP and productivity

The Auckland creative sector's productivity (GDP per employee) improved between 2000 and 2016 (1.6% pa) by more than the economy as a whole (0.8% pa). However some sub-sectors improved by more (TV: 4.6% pa) and others by less or even had declining productivity (performing arts -1.7% pa). Productivity improvements are the difference between GDP growth and the associated increase in employment (but can arise from a number of causes, including changes in the proportion of part-time employees and of average hours worked) (see Table 19).

The significant changes in GDP, employment and productivity from 2000 to 2016 for the various creative sub-sectors can be summarised as follows:

- Design services, especially architectural and advertising, have had increasing demand; they have significantly expanded their sales (GDP) but not their productivity, and consequently raised their employment to reinforce their position as the largest creative sub-sector by employment.
- Traditional publishing is in a sense the opposite: productivity per employee has been improving strongly, but demand (GDP) has had only a modest net up-trend, so the sub-sector has seen major job losses – mostly just after the GFC, between 2008 and 2012.
- TV has seen a prolonged boom in demand (GDP), thanks to the growth of “subscription programming” (SKY). Productivity improvements have not kept pace, so there has also been moderate growth in employment. The ultimate impact of online media remains to be seen, but a possible indicator is that TV employment has plateaued since it peaked in 2013, despite continuing growth in demand (GDP)
- Film and video production has had consistently strong demand growth (GDP), but from 2009 onwards this has mostly been generated by productivity improvements, so the demand for labour has peaked or even begun to decline. An alternative interpretation is that post GFC productivity improvements have been associated with expanded output (GDP) rather than job cuts. (Apart from 2014 and 2015). There also appears to have been a major shift towards non-employee workers including self-employed, but verification is beyond the scope of this report. Film and video is often a substantial generator of exports, but it is not clear to what extent its rapid export growth pre-GFC can be sustained into the future.
- Radio employment has doubled (but remains a minor share of the sector); productivity also improved, with the net result that GDP more than tripled. In the last few years the rate of GDP growth has been more modest, and employment growth has been even more muted
- Digital media is hard to measure accurately, but appears to have grown strongly from a small base (presumably partly at the expense of traditional publishing). Increased demand appears to have been met primarily by more employees rather than productivity improvements (0.6% pa); however, this sub-sector may be particularly sensitive to technology-driven cost reductions leading to price cuts that lower the measured value over time of a given volume of output.
- Performing arts, visual arts and music are all minor in terms of employment and contribution to GDP, but all have the potential to stimulate increased tourism,

which benefits the rest of the economy. Music has had quite strong output growth (GDP), but remains an insignificant share of the sector. Performing arts and visual arts have had moderate increases in employment but lower GDP growth and an actual fall in productivity – possible indicating an increase in part-time workers. Visual arts are also a substantial export²⁷ (jewellery), but the local content is a relatively low proportion (due to the cost of materials (silver)) so the benefit is less.

Table 19: Auckland creative sub-sectors GDP and productivity, 2016 vs 2000

Creative sub-sector	GDP 2000	GDP 2016	GDP CAGR	Employment CAGR	Productivity CAGR
Design	643	1,068	3.2%	3.3%	-0.1%
Publishing	294	396	1.9%	-2.1%	4.0%
Screen Production: TV	76	276	8.4%	3.6%	4.6%
Screen production: Film, video	158	409	6.1%	1.8%	4.3%
Radio	34	124	8.5%	4.2%	4.2%
Digital media	31	141	9.9%	9.3%	0.5%
Performing Arts	145	177	1.3%	3.0%	-1.7%
Visual Arts	141	174	1.3%	1.4%	-0.1%
Music	18	39	5.0%	4.3%	0.7%
Total Creative	1,540	2,803	3.8%	2.2%	1.6%
Total All Sectors	51,998	83,848	3.0%	2.3%	0.8%

²⁷ \$101 million in 2012; Source: Auckland Council, 2013. *Industry snapshot for Auckland: creative sector*.

10. Conclusion

Although Auckland is home to a disproportionately large proportion of the country's creative sector, the Auckland creative sector is modest in size, has grown its employment at the same rate as the rest of the economy, and has below-average productivity per employee (but not necessarily per hour worked, given that the sector is believed to employ a higher proportion of part-timers). However, the sector has important linkages to much of the rest of Auckland's economy, especially ICT, professional services, manufacturing and construction. Also, some sub-sectors are more promising than others, due to different GDP and employment impacts of the various drivers affecting them.

One of the main drivers of the creative sector is technology; the shifts to digital and online activity in particular have had major impacts on many aspects of the creative sector, including how it is delivered. Technological change affects the sector's costs and prices and therefore its competitiveness and the demand for its outputs, as well as its productivity and demand for labour. The direct effect of improved labour productivity is typically to reduce the need for labour, and in many cases there is a switch from labour to capital (people being to some extent replaced by machines). However, the passing on of these cost savings as lower prices (and/or improved quality) can then lead to increased demand for the sector's outputs, which tends to reverse the fall in demand for labour. The overall net result for demand for labour by the sector (and each of its sub-sectors), can be a smaller decrease or no net decrease at all, or even a net increase.

Another important and related driver is the global economy, which affects both the New Zealand economy and the demand for exports. Auckland has been affected by the 2001-2007 boom, 2008 global financial crisis and subsequent recovery, coupled with the long term trends of globalisation and increasing wealth and population as well as changing technology.

The overall net impacts on the Auckland creative sector (2000 to 2016) have been largely in keeping with changes to the economy as a whole in terms of employment, but the sector's productivity per employee has improved by more than the rest of the economy, and so there has been a modest increase in the sector's share of the region's GDP. (Alternatively, the sector's productivity per employee has improved by more than the rest of the economy, but there has been a similar increase in the sector's share of the region's GDP, with the two effects netting out to no change in the sector's share of the region's employment)

Employment changes have varied between the different creative sub-sectors, leading to changes in each sub-sector's employment share of the creative sector. Those employment share changes (percentage points) from 2000 to 2016 include the following: publishing's share has halved, a fall of 11 percentage points, while design's share has increased by nearly a fifth (+6%), digital media has more than doubled (+3%) and TV and radio risen by a third (+2% and 1%) – possibly partly at the expense of film and video's share (-1%).

Arguably, the most promising sub-sectors of the Auckland creative sector appear to be design, digital media and film and video production (including post-production). The design and digital media sub-sectors in particular have strengthened their positions as potential enablers for Auckland's future economic development in terms of knowledge and innovation. (The growth in digital media has presumably benefitted from telecommunications companies shifting their emphasis from voice to data, but apart from "internet broadcasting", the network operators themselves are primarily classified as ICT (information communications and technology) rather than being in the creative sector.) Film and video production has the potential to be a substantial export earner, which could also support growth in visual and performing arts and music.

11. Appendices

Appendix 1: Glossary and abbreviations

ANZSIC: Australian and New Zealand Standard Industrial Classification, as re-defined in 2006, except where explicitly stated to be the 1996 version. The usual level of detail is 1-, 2-, 3- and 4- or 5-digit categories; 4-digit is currently the same as 5- and 6-digit.

ATEED: Auckland Tourism, Events and Economic Development Limited, a council-controlled organisation.

Auckland: The Auckland region, corresponding to the current Auckland Council territory, which includes the areas covered by the various former councils of the Auckland region (not just Auckland City Council).

Business: here used mainly to denote a single geographic business unit (“GU”), but in some contexts means a “firm”.

CAGR compound annual growth rate: the annual growth rate required to generate a given total growth over a period of time, allowing for compounding each year.

Category: category refers here to standard ANZSIC groupings at the 1-, 2-, 3- or 4-digit (or 5 or 6 digit) level.

Components: the various ANZSIC categories that combine to form a particular sub-sector.

Employees/Employment: various measures can be used, including EC and jobs (see below). See also Appendix 4: Estimating employment.

EC Employee Count: The total number of employees in a sector; includes both full and part-time employees but not self-employed or working proprietors. See also Appendix 4: Estimating employment.

Enterprise: a business entity that owns and manages one or more business units

FDI Foreign Direct Investment: direct investment into production or business in a country by an individual or company in another country, involving a measure of ownership and control (as opposed to passive or portfolio investment in shares or financial assets).

Filled jobs: see Jobs

Firm: here used mainly to denote one or more businesses owned and managed together as a single entity.

GDP Gross Domestic Product: (often referred to as “Net Output” or “value added”) the total market value of all final goods and services produced within a country in a given period of time (usually a year). This is also equal to the sum of the value added at every stage of production (the intermediate stages) of all final goods and services produced within a country in a given period of time. The term is also applied to particular sectors of the economy and also at the regional level. See also GDP generated and GRP. For specific details of how it is calculated by Infometrics (in \$2010 million), see Appendix 3: Data definitions and limitations.

GDP generated: here refers only to direct value added by the sector itself, so does not include indirect or induced effects on other sectors (unless otherwise stated).

GFC: global financial crisis of 2007-2008, which triggered a global recession.

GRP Gross Regional Product: the net output or value added in a particular region, i.e. the portion of national GDP attributable to that region. See also GDP.

GU: geographic business unit: a separate operating unit engaged predominantly in one kind of economic activity from a single physical location or base (as used in Statistics New Zealand’s Business Demography data).

HS10: 10-digit level Harmonised System to classify export commodities.

Jobs/Filled jobs: a measure of employment (see above) See also Appendix 4: Estimating employment.

Labour Productivity: (average) labour productivity is used here to denote output per employee, calculated as total value added divided by total number of employees (both from ANZSIC 2006). It is affected by various things, including availability and quality of other factors of production (e.g. capital goods).

LQ Location Quotient: see SLQ.

MBIE: Ministry of Business, Innovation and Employment – incorporates some or all of several previous ministries.

MSI: Ministry of Science and Innovation (now part of MBIE).

n.e.c: not elsewhere classified.

Output: Gross output is the value of goods and services produced. It consists of net output, or value added (see “GDP”), plus the cost of intermediate inputs.

Pa (per annum): annual or per year.

Productivity: see Labour Productivity.

RCA Revealed Comparative Advantage: RCA of a product is New Zealand exporters’ share of world exports of that product, compared to New Zealand

exporters' average share of world exports of all products. RCA can also be calculated as that product's share of total New Zealand exports, compared to that product's share of total world exports.

Sector: The creative sector, unless otherwise indicated.

SLQ Simple Location Quotient: a statistical measurement of the relative concentration of a given industry in a given place. It is calculated by dividing the proportion of the area's economic activity in an industry, by the proportion of the nation's economic activity in that same industry. Calculated another way, it is a region's share of national activity in an industry, divided by the total regional economy's share of the total national economy. If the region was a scaled down version of the nation, then all its SLQs would equal 1. Instead, in most regions in most countries, some sectors are relatively larger than others and have a higher SLQ, and others are relatively smaller and have a lower SLQ (but the weighted average for all sectors in a given region is always 1). If the SLQ index for a sector is greater than 1, then the sector is deemed to be strong there (i.e. the industry is of high importance to the regional economy, compared to that sector's importance to the national economy). or put another way, the region is relatively strong in that sector The highest possible SLQ is if a sector is based entirely in a single region: in the case of Auckland, which in 2016 had 34.9% of New Zealand's employment, then if an entire sector were there and none in the rest of New Zealand, then the SLQ in 2016 would be 100%/34.9% which is 2.87. The lowest possible SLQ is always zero.

SNZ: Statistics New Zealand (government department).

Sqm: square metres.

Sub-sector: Part of the sector; here, usually a grouping of ANZSIC 4- or 5-digit categories.

Subdivision(s): ANZSIC 2-digit category(s).

SWOT analysis: strengths, weaknesses, opportunities and threats.

Value added: see GDP.

Vs: versus

Appendix 2: Sector definition

This report uses the creative sector and sub-sectors definition from the Auckland City Council report *Auckland's creative industries: The numbers 2009*, as follows:

Sub-sector	ANZSIC 2006	ANZSIC06 Description	% deemed creative
Design	M69210	Architectural Services	100%
	M69240	Other Specialised Design Services	113%
	M69400	Advertising Services	100%
	R90020	Creative Artists, Musicians, Writers and Performers	4%
Publishing	J54110	Newspaper Publishing	100%
	J54120	Magazine and Other Periodical Publishing	100%
	J54130	Book Publishing	100%
	J54190	Other Publishing (except Software, Music and Internet)	100%
	R90020	Creative Artists, Musicians, Writers and Performers	26%
Screen Production: TV	J56210	Free-to-Air Television Broadcasting	100%
	J56220	Cable and Other Subscription Programming	100%
Screen production: Film, video	J55110	Motion Picture and Video Production	100%
	J55130	Motion Picture Exhibition	100%
	R90020	Creative Artists, Musicians, Writers and Performers	10%
	J55140	Postproduction Services and Other Motion Picture and Video Activities	100%
Radio	J56100	Radio Broadcasting	100%
Digital media	J54200	Software Publishing	100%
	J57000	Internet Publishing and Broadcasting	100%
	M70000	Computer Systems Design and Related Services	5%
Performing Arts	R90010	Performing Arts Operation	100%
	R90020	Creative Artists, Musicians, Writers and Performers	11%
	R90020	Services to the arts =R90020*50%	50%
	R90030	Performing Arts Venue Operation	100%
Visual Arts	C20290	Other Ceramic Product Manufacturing	33%
	C25910	Jewellery and Silverware Manufacturing	100%
	M69910	Professional Photographic Services	100%
	R89100	Museum Operation	32%
	R90020	Creative Artists, Musicians, Writers and Performers	37%
Music	C16200	Reproduction of Recorded Media	100%
	J55220	Music and Other Sound Recording Activities	100%
	R90020	Creative Artists, Musicians, Writers and Performers	12%

Note the following:

- Percentages highlighted in yellow denote partial inclusion in the creative sector:
- (R90020 is spread amongst several sub-sectors, but sums to 100%)
- M69240 is scaled up by 13% to allow for other designers in excluded categories.
- M70000 includes only the 5% who are assumed to be engaged in web-related (creative) activities.
- C20290 and R89100 are assumed to be partially creative.
- Services to the arts (in excluded categories) is assumed to be half the size of R90020.

Comparison to Martin Jenkins report for ATEED

The creative sector definition used in this report differs from Martin Jenkins' 2012 Auckland Tourism, Events and Economic Development Ltd (ATEED) Sector Engagement Framework, which includes a "screen and creative (digital) content" sector that overlaps the definition in this report but has major differences as follows:

- "while broader creative firms are included in the sector, the [Martin Jenkins/ATEED] focus is on digital content businesses"
- they exclude some (minor) ANZSIC categories that are in the creative sector
- they include only part of many creative sub-sectors, notably publishing and design
- they include three additional ANZSIC categories: motion picture distribution, music publishing and video rental
- they include small portions of 22 other additional ANZSIC categories, ranging from 0.4 per cent of Surveying and Mapping Services to 33 per cent of Libraries
- they divide the sector into 12 "segments", but do not list or describe which ANZSIC categories are aggregated into which segments.

While useful for some purposes, their approach of including numerous fractions of many ANZSIC categories has the disadvantage that there is no way to distinguish whether growth in activity in a fractional category is due to growth in the creative portion or the non-creative portion (or both).

Appendix 3: Data definitions and limitations

This section describes the data used for this report, its sources and limitations, followed by detailed definitions of the main items. Other data items (eg SLQs), that have been calculated using the original data, are described in Appendix 1: Glossary. For more details on employment data limitations, see also Appendix 4: Estimating employment.

Data availability: Statistics New Zealand does not directly provide calculations or estimates of regional GDP (i.e. “value added” or “output”) for the sector and its components, so Infometrics GDP estimates have been used. For consistency, employment and business data has also been sourced from Infometrics.

Overview of data used: Except where otherwise stated, this report is based entirely on data on employment, GDP and business numbers published (via Auckland Council subscription) by Infometrics, a leading New Zealand economic consultancy. To generate creative sector and sub-sector level figures, this report has extracted and aggregated the relevant detailed ANZSIC 6-digit data (which provides a perfect match to the sector definition used in this report). The time period covered is 2000 to 2016 (March years). The geographic level is the Auckland region, plus comparisons to New Zealand; Infometrics also publish detailed data for each of the 21 local board areas, but only the largest (Waitematā LB) is included in this report (extracting and aggregating the relevant 6-digit data into creative sub-sectors).

Employment data: Employment data is also available from Statistics NZ, notably Business Demographics Employee Counts (“ECs”), but has not been used in this report as it excludes self-employed and is as at a single month (February). Infometrics’ employment data is based on their analyses of Statistics NZ’s quarterly and annual LEED²⁸ database; it includes self-employed and is an average over the whole year. The proportion of self-employment for the creative sector is not known, but for the Auckland economy as a whole it is estimated at 18 per cent, and for the Arts and Recreation Services level 1 industry, it is 24 per cent.

Gross Domestic Product (“GDP”)²⁹ and labour productivity – This is taken from Infometrics’ national and regional GDP series 2000 to 2016, which is in constant 2010 dollars to remove the effects of inflation. The GDP and productivity estimates are based on Infometrics’ estimates of employment, which tend to be higher than Statistics New Zealand’s Business Demographics ECs (eg 28,204 vs 17,896, in 2012) due mainly to the former including an estimate of working proprietors and other self-employed.

²⁸ Linked Employer Employee Data

²⁹ See Appendix 1: Glossary and abbreviations for definition of GDP.

Data limitations:

- Infometrics' employment data is based on filled jobs and includes part-time as well as full time employment, so if a person has two jobs they will be counted twice, and a 1-day-a-week job counts the same as a 40-hour job. Data on hours worked is not available at the sector and region level of detail.
- The creative sector is likely to have a particularly high proportion of participants who are not well captured by official statistics, for example because they do not have regular paid work or income. By definition, this data is hard to capture or even estimate.
- The definition of the creative sector includes creative and non-creative employees in creative industries, and leaves out creative occupations in non-creative industries as included in the ARC's CCI 2010 *Auckland's Creative Workforce Report*. This was based on 2006 census data and has not been replicated from the 2013 census, and to do so is outside the scope of this report. The CCI report calculated that in 2006 the creative workforce was 50 per cent larger than the creative sector.
- GDP statistics at the regional level from Infometrics and Statistics New Zealand are necessarily based on numerous assumptions and so are subject to substantial error margins. Also, price changes are assumed to reflect "value", but may include changing market conditions or improved availability (e.g. cheaper production methods). Labour productivity comparison calculations are then particularly problematic.

Exports: This report does not cover exports. Consistent authoritative detailed time series data on exports by the Auckland creative sector is not available, particularly of services.

This report is based on data from Infometrics, who publish the following definitions:

"Business Units: Data on the number of businesses is sourced from the Business Demography statistics from Statistics New Zealand. Businesses are measured by geographic units ["GUs"], which represent a business location engaged in one, or predominantly one, kind of economic activity at a single physical site or base (eg. a factory, a farm, a shop, an office, etc). All non-trading or dormant enterprises, as well as enterprises outside of New Zealand, are excluded from business demography statistics.

A significant number of enterprises are recorded as having zero employment. Enterprises in the zero employee count size category may have:

- working owners who don't draw a wage from their business
- labour provided by other businesses or contractors
- business activity that requires no labour (eg. holding company).

Only business units that are economically significant enterprises are included. To be regarded as economically significant they must meet at least one of the following criteria:

- annual expenses or sales subject to GST of more than \$30,000

- 12-month rolling mean employee count of greater than three
- part of a group of enterprises
- registered for GST and involved in agriculture or forestry
- over \$40,000 of income recorded in the IR10 annual tax return (this includes some units in residential property leasing and rental).

“Employment by industry: Employment is measured as an average of the four quarters making up each year [to March]. The unit of measurement is filled jobs.

Regional employment numbers are from Infometrics’ Regional Industry Employment Model (RIEM). The model draws heavily on quarterly and annual Linked Employer Employee Data (LEED) published by Statistics New Zealand. RIEM differs from data from Business Demography in that it is a quarterly series (BD is annual) and it includes both employees and self-employed, whereas BD only includes employees.”³⁰

“Gross Domestic Product: Gross Domestic Product (GDP) measures the value economic units add to their inputs. It should not be confused with revenue or turnover. A company’s value adding is broadly equivalent to its sales revenue less the cost of materials (eg steel for making motor cars) and services (eg telecommunications) purchased from other firms.

Total GDP is calculated by summing the value added to all goods and services for final consumption – i.e. it does not include the value added to goods and services used as intermediate inputs for the production of other goods as this would result in double counting. As a result, GDP estimates should not be confused with revenue/turnover/gross output.

In this profile Gross Domestic Product for each region and territorial authority (TA) is estimated by Infometrics. A top down approach breaks national production-based GDP (published by Statistics New Zealand) down to territorial authority level by applying TA shares to the national total. Each TA’s share of industry output is based on the share of earnings measured in the Linked Employer Employee Data (LEED), which is, in turn, based on taxation data. This approach captures differences in productivity between TAs and changes in productivity over time. Our estimates are benchmarked on regional GDP published by Statistics New Zealand.

GDP is measured in constant 2010 prices.

“[GDP] Prices: In this profile, we present all GDP estimates in constant 2010 prices. GDP presented in constant prices is sometimes referred to as real GDP. By using constant prices we remove the distractionary effect of inflation. It enables us to meaningfully compare GDP from one year to the next.

³⁰ See Appendix 4: Estimating employment for further discussion

“Productivity: Productivity measures the efficiency of production. In this profile³¹, we measure productivity as GDP per employed person (ie. The amount of economic activity generated on average by each employee). One needs to be aware that labour is only one input into production. The output of each employee may differ across industries in a region due to differing access to machinery, technology, and land. Therefore, productivity comparisons should only be made in circumstances where it is reasonable to assume that capital intensity will be broadly the same – for example, when looking at productivity within an industry over a limited-time period, or when comparing productivity of a particular industry with that same industry in another region.”

³¹ In fact, the profile did not include productivity for the creative sector and its sub-sectors, so this report calculated them using the Infometrics data and methodology.

Appendix 4: Estimating employment

Employment in Statistics New Zealand's Business Demographics is based on employee counts ("ECs"), which includes both full and part-time employees but not working proprietors, whereas Infometrics include an estimate of workers who are not EC employees. The difference between ECs from Statistics New Zealand and the Infometrics estimates of employment, gives an indication of the potential significance of Business Demographics' not counting working proprietors.

For the Auckland economy overall in 2012³², the Infometrics estimate is slightly higher (+14%), but for the creative sector it is substantially higher (+58%). The difference varies greatly by creative sub-sector and so can affect their relative sizes, from nothing for radio (+0%), to a much more than doubling for film and video (+173%) to make it the second largest creative sub-sector (4413 workers), ahead of publishing (3877) and TV (2791). (See Table A4)

The table also shows the proportion of workers (per Infometrics) that are not EC employees. The proportions for the more structured sub-sectors (with the largest average business sizes), namely radio (0%), TV (9%) and publishing (17%), are relatively minor, similar to the rest of the economy (12%). The proportions are much higher for the most flexible and decentralised sub-sectors (with the smallest average business sizes), namely film and video (63%), music (56%) and both visual (55%) and performing (52%) arts. Design (37%) and digital media (23%) are in between, comparable to the average for the creative sector (37%) but still much higher than the rest of the economy.

Table A4: Statistics NZ ECs versus Infometrics employment, Auckland, 2012

	Stats NZ EC_2012	Infometrics workers	Difference	Difference % vs. ECs	Non-EC as % of workers
Design	6,840	10,907	4,067	59%	37%
Publishing	3,200	3,877	678	21%	17%
Screen Production: TV	2,530	2,791	261	10%	9%
Screen production: Film, video	1,616	4,413	2,797	173%	63%
Radio	1,000	999	-1	0%	0%
Digital media	718	927	209	29%	23%
Performing Arts	948	1,989	1,042	110%	52%
Visual Arts	811	1,794	983	121%	55%
Music	234	507	273	116%	56%
Total Creative	17,896	28,204	10,308	58%	37%
Total All Sectors	642,940	731,774	88,834	14%	12%

³² The comparison analysis was undertaken in 2013; it could be repeated with 2016 data, but the results are unlikely to be significantly different.

Appendix 5: Difficulties with R900200

Difficulties in counting creative artists, musicians, writers and performers

In this analysis the ANZSIC06 group R900200 (Creative artists, musicians, writers and performers) has been split across the nine creative sub-sectors based on occupational profiles from the 2006 Census. For example, 11 per cent of R900200 employment was allocated to the performing arts i.e. 60 Employee Counts nationally and 18 Employee Counts in Auckland.

Analysis of Census data has shown that many of the occupations associated with R900200 are also present in other codes, in particular R900100 – Performing arts operation and R900300 – Performing arts venue operation.

Over time the employment figures recorded against the four component activities in Performing arts may vary significantly as performers and artists are coded to different ANZSICs. As a result caution should be taken when assessing individual activity trends and it is recommended that for accuracy the Performing arts sector be viewed as a whole.

Furthermore, services to the arts was previously a category in ANZSIC1996, but is now calculated as being the same size as 50 per cent of the whole of R900200.

In addition, R900200 has an unusually high relative number of businesses that have no employees (1170 GUs) relative to the total number of employees (160), which suggests that the category is likely to have an unusually high proportion of working proprietors who are not captured in the official employment statistics.

Additionally, many of the occupations within the Performing arts sector are unlikely to be fully represented in official employment statistics. For example, a film maker may conduct their film making activities as a self-funded project or with the help of friends and associates in a skills-bartering arrangement.

It is therefore important to note that many of the more freelance and non-institutionalised creative activities (particularly performers and artists) are likely to be under-represented compared to more corporate activities (e.g. architecture).

Details of primary activities

R900100 – Performing arts operation: circus operation, dance and ballet company operation, musical comedy company operation, musical productions, opera company operation, orchestra operation, performing arts operation n.e.c., theatre restaurant operation (mainly entertainment facility), theatrical company operation.

R900200 – Creative artists, musicians, writers and performers: artists, cartooning, choreography service, composing (including musical composition), costume designing, creative arts service, journalistic service, musicians, playwriting and screenwriting, producing or directing original or artistic work, sculpting, set design service, speaking service, theatre lighting design service, writing (including poetry and comedy).

R900300 – Performing arts venue operation: concert hall operation, entertainment centre operation, music bowl operation, opera house operation, performing arts venue operation n.e.c., playhouse operation, theatre operation (except motion picture theatre).

Find out more: phone 09 301 0101, email
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