Jobs and wealth in Manitoba's creative economy

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1. Executive summary

This report analyses job and wealth generation in the Arts and Creative Industries in Manitoba, Canada, and other provinces, comparing their workforce, gross domestic product, educational attainment levels and productivity with those of other main industries.

The report employs the international standard Creative Industries (CI) framework developed in the UK by the Department of Culture, Media and Sport (DCMS), used by the UK government for more than 20 years and currently employed in over 15 other countries, detailed in appendix A. The results in this report are strictly comparable with the equivalent figures for standard industries which appear in the national accounts, like manufacturing.

This work complements the Statistics Canada Cultural Satellite Account (CSA) whose focus is a *product* — culture. Our focus is on a *resource* — the creative workforce. This allows us to report on aspects of the creative sector that the CSA does not; such as labour productivity, educational attainment and the creative labour force, including that part which works outside the creative industries.

Both measurement tools have a purpose and together they provide compelling evidence that the Arts and Creative Industries are a significant driver of economic growth in Canada that is reflected in Manitoba.

The Creative Industries, in both Canada and Manitoba, have a high value-added per worker — that is, they give bang for buck. They are among the top three service industries, generating over twice as much per worker as Accommodation and Food services. At the same time they are creating, rather than losing, jobs, bucking the trend in traditional, declining, goods-producing industries. In short — the Creative Industries are growing both in labour productivity and number of jobs created.

This is important because automation is driving jobs out of the traditional production industries — the service industries now account for 79% of Canada's jobs.[1] These 'Sunset' production industries also have a high value-added per worker, because the jobs have been replaced by machines. And, unlike service industries, most notably the 'smart' high-end industries like the creative and science-based industries, they no longer create jobs, and their growth is slowing to a crawl — causing the 'rustbelt' phenomenon.[2]

A robust and stable growth strategy has to invest in high-value service industries to maintain employment without cutting into wealth generation.

1 Statistics Canada Table 14-10-0022-01 'Labour force characteristics by industry, monthly, unadjusted for seasonality'

2 Moretti 2013

2. Headline findings

- **The creative sector is one of Canada's largest industries** with over 1,500,000 Canadian jobs in 2017 including 35,000 in Manitoba. There are also an additional 12,000 Manitobans employed in creative occupations in non-creative sectors. In other words, Manitoba's economy as a whole relies on a strong contingent of creative labour.
- **Creative Industries are a significant generator of wealth.** The creative industries added $100 billion to Canada's economy in 2016, more than every main industry except Manufacturing, Finance, and Construction. They added $1.9 billion (at 2007 dollar values, equal to $2.2 billion in 2017 value) to Manitoba's economy, twice as much as Accommodation and Food Services.
- **It is a driver of growth.** Manitoba creative sector jobs grew by 44% from 1997 to 2017, making the creative industries the 4th fastest growing sector in Manitoba during this time, while productivity increased by 33% in the same period.
- **It is a high productivity industry** with Canadian value added of $67 per hour in 2017, ahead of all service sectors except Financial Services. Manitoba's Creative Industries generate $56 in value added per hour worked, ahead of all service sectors except Financial Services and Wholesale Trade. In both cases the Creative Industries are ahead of Construction, Manufacturing, Transportation and Agriculture.
- **The creative sector employs a well-educated workforce.** In Manitoba, 46% of the creative workforce possess a University certificate, diploma or degree at a bachelor level or above compared to 24% of the non-creative workforce.
- **Manitoba's creative workforce is employed across all sectors.** Creative workers are highly educated and contribute to productivity in both creative and non-creative sectors. Many individuals work in dual jobs moving between creative and non-creative industries — more often being employed in non-creative industries than not.
- **Manitoba's unique creative strengths are a competitive advantage** Manitoba growth was top in Canada between 2007 and 2017 in the Advertising and Marketing sector, in Architecture, in Crafts and in the Museums and Libraries sector. It was third in the Music, Performance and the Visual Arts sector and fifth in the Film, TV, Radio and Photography sector. In summary, its greatest strengths — measured in terms of commercial success — are in those sectors that specialise in creative content.

3. Introduction

This report is about the economic significance of Canada's Arts and Creative Industries. The method used is that of the UK's Department of Culture, Media and Sport (DCMS 2014),[3] the most authoritative world standard for the Creative Industries, which is in wide use throughout the world. The method allows us to cover a 20-year span using Statistic Canada's standard series for industrial data — the 'Productivity and Hours' series.[4] This combines data from a wide range of sources and is one of the most reliable bases for industrial comparisons.

The report also provides data on the detailed composition of the creative workforce, its source of employment, and its educational and skill attainments, made possible by the release of detailed data from the 2016 census.

The findings are provisional, based on classifications derived directly from their UK equivalents.[5] In future releases, this will be refined to account for differences between UK and North American industrial structures. Preliminary study suggests this is unlikely to change the main qualitative conclusions.

It offers comprehensive estimates of the number of jobs in the creative industries, the wealth they create, their productivity, and their growth rates. In parallel, it provides data on the creative workforce — the creative economy's principal asset: its size, educational levels and the way it is employed. It provides a robust comparison with other Canadian provinces and with the Canadian economy as a whole.

Where relevant, data is provided for other provinces to allow for comparisons that demonstrate the relative strengths and weaknesses of each province's creative economies.

The data confirms key findings that emerge from the Cultural Satellite Account (CSA) data, that the arts and creative industries are a significant employer and generate considerable wealth.

This report allows for robust comparisons with other industries, which is necessary when evaluating choices for investment. In particular it provides an evidence base for decisions that take into account the key criterion identified by Manitoba's Cultural Review, namely, value for money, showing that Manitoba's Creative Industries come out, by this criterion, with flying colours.

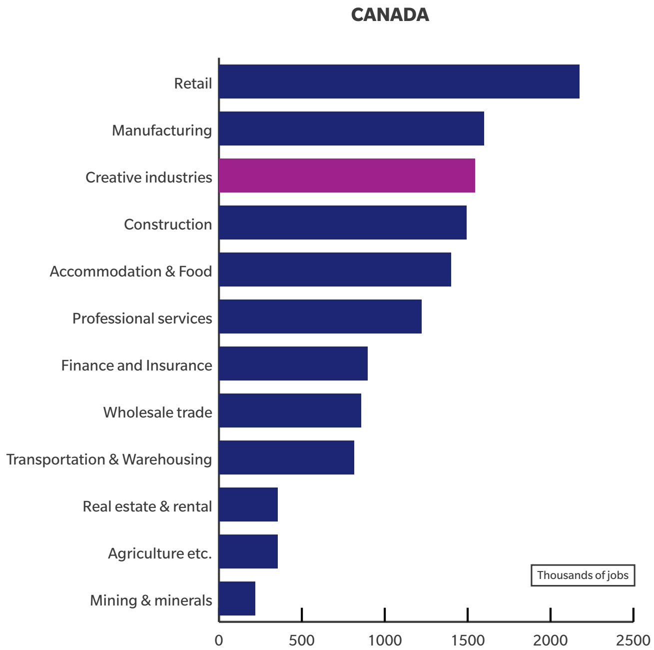
3 Sources of data are all described in Appendix A. Detailed data tables are supplied in Appendix B and cited works are listed in Appendix C

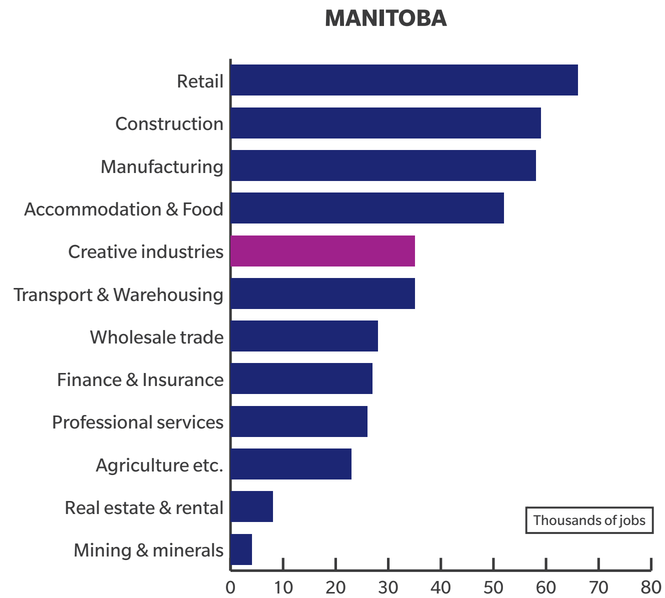
4 See Appendix A for sources

5 See Nathan et al. 2016.

4. The creative industries are a major employer

Figure 1: Jobs in main and creative industries 2017





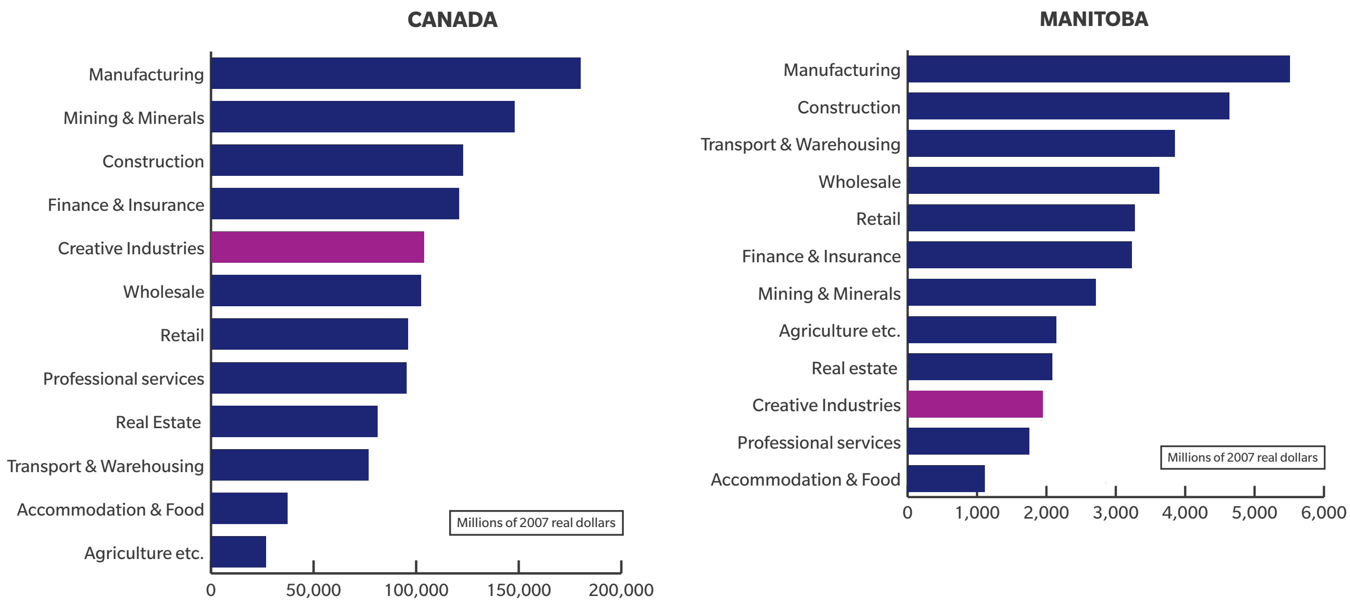
	Canada	Manitoba
Retail trade	2,175	66
Construction	1,493	59
Manufacturing	1,600	58
Accommodation and Food Services	1,401	52
Creative Industries	1,543	35
Transportation and Warehousing	814	35
Wholesale trade	856	28
Finance and Insurance	897	27
Professional, scientific and technical services	1,222	26
Agriculture, Forestry, Fishing and Hunting	353	23
Real estate and rental leasing	355	8
Mining, Quarrying, and Oil and Gas Extraction	217	4

Units: thousands of jobs
Source: Statistics Canada Productivity and Hours series

As of 2017, there are over 1,500,000 jobs in the Creative Industries across Canada. This is greater than any other main industry except Retail Trade. In Manitoba, there are 35,000 jobs in the Creative Industries, nearly twice as many as Agriculture, forestry, fishing and hunting, and more than in Finance or Wholesale Trade.

5. The creative industries are a major source of earnings

Figure 2: Value added (GDP) in millions of chained 2007 Canadian dollars



	Canada	Manitoba
Manufacturing	$180,192	$5,508
Construction	$122,735	$4,638
Transportation and Warehousing	$76,688	$3,852
Wholesale trade	$102,382	$3,626
Retail trade	$96,048	$3,272
Finance and Insurance	$120,926	$3,232
Mining, Quarrying, and Oil and Gas Extraction	$147,904	$2,714
Agriculture, Forestry, Fishing and Hunting	$26,885	$2,142
Real estate and rental leasing	$81,073	$2,082
Creative Industries	$103,844	$1,947
Professional, scientific and technical services	$95,398	$1,756
Accommodation and Food Services	$37,250	$1,115

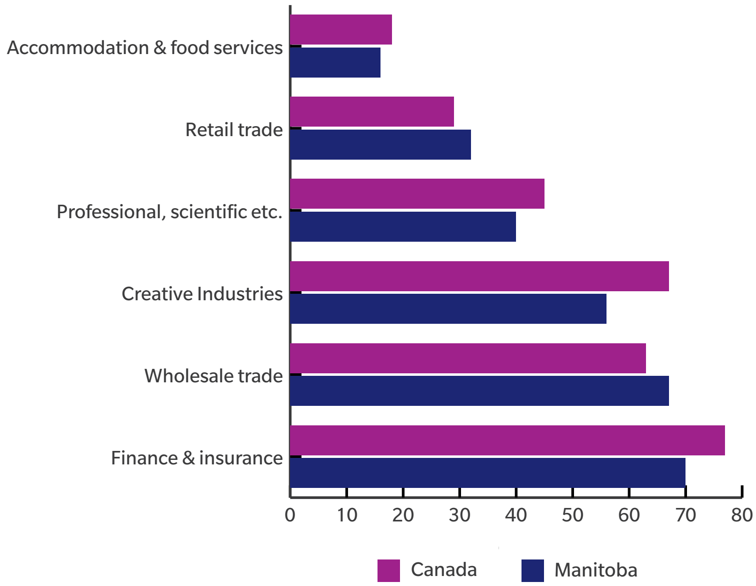
Units: Millions of 2007 dollars[6]
Source: Statistics Canada Productivity and Hours series

The creative industries added $100 billion to Canada's economy in 2016, more than every main industry except Manufacturing, Finance, and Construction. They added $1.9 billion to Manitoba's economy, nearly twice as much as Accommodation and Food Services.

6 '2007 dollars' throughout this report means 'what the dollar was worth in 2007'. See Appendix A for details

6. A highly productive service industry

Figure 3: Value added per hour in 2017



		Manitoba	Canada
Service Industries	Finance and insurance	$70	$77
	Wholesale trade	$67	$63
	Creative Industries	$56	$67
	Professional, scientific etc.	$40	$45
	Retail trade	$32	$29
	Accommodation and food services	$16	$18
Goods-producing Industries	Mining and minerals	$342	$308
	Utilities	$204	$203
	Transportation and warehousing	$54	$49
	Manufacturing	$49	$59
	Agriculture, forestry, fishing and hunting	$43	$37
	Construction	$38	$42

Units: 2007 dollars per hour
Source: Statistics Canada Productivity and Hours Series

The creative industries, in Canada and Manitoba, have a high value-added per job — they give bang for buck. They are among the top three service industries in Canada, generating over twice as much per worker as Accommodation and Food services.

The Creative Industries at $67 per hour are Canada's second most productive service industry, exceeded only by Finance and Insurance. They are Manitoba's third most productive service industry at $56 per hour. In both cases the Creative Industries are more productive than Manufacturing, Construction, Transportation and Agriculture.

But at the same time, the Creative Industries, unlike the high-productivity jobs in the goods sectors, are creating jobs, not shedding them. This is important because automation is driving jobs out of the production industries — the service industries now account for over 80% of Canada's jobs. These 'Sunset' industries have a high value-added per worker, because the jobs have been replaced by machines. The Sunrise 'smart' industries are absorbing skilled labour which cannot easily be replaced by machines, creating both jobs and wealth.

A robust and stable growth strategy has to invest in high-value service industries to maintain employment without cutting into wealth generation.

7. A driver of growth in both value added and jobs

Figure 4: Job growth 1997-2017

	Canada	Manitoba
Construction	91%	72%
Professional, scientific and technical services	83%	71%
Educational services	41%	53%
Creative Industries	72%	44%
Accommodation and food services	51%	42%
Finance and insurance	25%	38%
Retail trade	41%	20%
Mining, Quarrying, and Oil and Gas Extraction	52%	-1%
Wholesale trade	14%	-3%
Manufacturing	-19%	-11%
Transportation and warehousing	25%	-14%
Utilities	5%	-18%
Agriculture, forestry, fishing and hunting	-22%	-36%

Units: Percentage increase in jobs 1997-2017
Source: Statistics Canada Productivity and Hours Series

Figure 5: Output growth 1997-2016

	Canada	Manitoba
Construction	84%	115%
Retail trade	94%	102%
Wholesale trade	100%	76%
Finance and insurance	83%	73%
Agriculture, forestry, fishing and hunting	54%	70%
Professional, scientific and technical services	107%	69%
Transportation and warehousing	61%	50%
Accommodation and food services	44%	36%
Creative Industries	81%	33%
Manufacturing	10%	26%
Utilities	9%	6%
Mining, Quarrying, and Oil and Gas Extraction	0%	0%

Units: 2007 dollars
Source: Statistics Canada Productivity and Hours Series

Except for construction and mining, Canada's production industries are all shedding jobs. Manitoba is also shedding jobs in mining and in sectors like transportation and warehousing, where Canada is not. It is the service industries that buck this rustbelt trend. Among them, the Creative industries are the third fastest generator of jobs in the Canadian Economy — outstripping even finance. In Manitoba, they are the fourth fastest generator of new jobs. Because of the high productivity of creative jobs, these industries also lead growth in the production of wealth.

Manitoba performs poorly in comparison with Canada as a whole in both jobs and wealth creation. In part, this is because of the competitive advantage of the large metropolitan centres, especially Vancouver. Among the smaller provinces (leaving out Ontario, BC and Quebec) Manitoba is in a healthy position, but there are no grounds for complacency. The opportunities are there — provided they are taken.

8. Manitoba is a national leader in creative wealth growth

Figure 6: Growth of real GDP 1997-2017

	1997-2017	2007-2017	1997-2007
British Columbia	93%	30%	48%
Saskatchewan	39%	30%	7%
Manitoba	**50%**	**28%**	**18%**
Nova Scotia	55%	28%	21%
Ontario	9%	25%	-13%
Quebec	1%	25%	-20%
Prince Edward Island	78%	21%	47%
Alberta	70%	7%	58%
Newfoundland and Labrador	59%	5%	52%
New Brunswick	39%	-6%	49%
Northern Territories	-8%	-13%	6%
Canada	23%	22%	0%
Rank	**6**	**4**	**7**

Units: Percentage growth in GDP, measured in 2007 dollars
Source: Statistics Canada Productivity and Hours Series

Figure 7: Growth of real GDP 2007-2017 by province

	AB	BC	**MB**	NB	NL	North	NS	ON	PEI	QC	SK	**Rank**
Advertising & marketing	35%	32%	**59%**	-7%	-24%	-31%	35%	31%	40%	24%	18%	**1**
Architecture	-6%	38%	**132%**	0%	13%	1%	37%	33%	76%	24%	48%	**1**
Crafts	-9%	2%	**32%**	-42%	-18%	-22%	-29%	-23%	-53%	-19%	0%	**1**
Museums, galleries & libraries	11%	47%	**33%**	-31%	3%	-30%	10%	12%	-40%	1%	0%	**2**
Music, performing & visual arts	6%	6%	**7%**	-38%	11%	-32%	-3%	10%	-1%	4%	-12%	**3**
Film, TV, video, radio & photography	-12%	54%	**15%**	-15%	-10%	-54%	9%	34%	4%	25%	22%	**5**
Design	-24%	-12%	**-28%**	-49%	7%	-56%	-24%	-26%	-40%	-7%	-50%	**7**
Publishing	-6%	-7%	**-9%**	-15%	-3%	-15%	-2%	-19%	-8%	-13%	21%	**7**
IT, software & computer services	36%	59%	**10%**	43%	45%	-77%	73%	58%	54%	72%	73%	**10**

Units: Percentage growth in GDP, measured in 2007 dollars
Source: Statistics Canada Productivity and Hours Series

The output of Manitoba's Creative Industries grew by 50% between 1997 and 2017, twice that of Canada and above Saskatchewan, New Brunswick, Ontario, Quebec and the Northern Territories.[7] This ranks it 6th in Canada over these twenty years.

7 The term "Northern Territories combines Northwest Territories, Nunavut, and Yukon for this analysis. This allows for continuity since Nunavut was created in 1999 and for greater statistical accuracy since sample sizes in the provinces concerned are small. A more detailed study of the specifics of creative and cultural production in Canada's North is desirable but is not the main focus of this study.

In the second decade of this period — between 2007 and 2017 — Manitoba rose to joint third with Nova Scotia, exceeded only by British Columbia and Saskatchewan. While the economic slowdown after the 2008 crash adversely affected creative industry growth in other provinces, its creative growth rate held up, significantly improving its competitive position. Individual sectors bear out this competitive advantage and show where it is located. Manitoba growth was top in Canada between 2007 and 2017 in the Advertising and Marketing sector, in Architecture, in Crafts and in the Museums and Libraries sector. It was third in the Music, Performance and the Visual Arts sector and fifth in the Film, TV, Radio and Photography sector. Its poorest performance was in IT, software and computer services. In summary, its greatest strengths—measured in terms of commercial success—are in those sectors that specialise in creative content.

9. The creative workforce: a 21st Century resource

The 2016 census provided a unique resource for studying the creative industries and the creative workforce. This is because it provides information, not previously available in sufficient detail, on the creative workforce and the industries it works in.

The census also bears out the analysis we have made using Statcan's 'Productivity and Hours' series, from a completely different source, confirming the robustness of our findings.

Figure 8—the 'Creative Trident'—shows the composition of the workforce in Manitoba's creative and non-creative industries.

Figure 8: Creative Tridents for Canada and Manitoba

Manitoba	**Occupation**			
Industry	**Creative Occupation**	**Non-Creative Occupation**	**Total in Industry**	Intensity (the proportion of workers who are creative)
Creative Industry	9,840	23,420	33,260	30%
Non-Creative Industry	11,885	572,830	584,715	2%
Total of Occupation Type	**21,725**	**596,250**	**617,975**	

Canada	**Occupation**			
Industry	**Creative Occupation**	**Non-Creative Occupation**	**Total in Industry**	Intensity
Creative Industry	491,940	995,870	1,487,810	33%
Non-Creative Industry	430,130	15,316,565	15,746,695	3%
Total of Occupation Type	**922,070**	**15,316,565**	**17,234,505**	

Units: jobs
Source: 2016 Census, author calculations from special commissioned Table

Figures above are for 2016 and so lower than most others in this report, which are for 2017.

The table shows employment, broken down by industry and occupation. Reading across, we see that Manitoba's Creative Industries had 33,260 jobs in 2016, which strongly confirms the estimate of 34,964 jobs obtained from the Productivity and Hours series. Of these, 9,840 where in creative occupations and 23,420 were non-creative support workers. Thus, 30% of the workforce were employed in creative occupations. In comparison, as the next row shows, only 2% of the jobs outside the creative industries were creative. For Canada the picture is similar, with an even higher creative intensity at 33% for the creative industries.

Reading down, we can see where Manitoba's creative workers find employment. 9,840 of them— 45%—work in the creative industries, showing this is a major source of employment for them. But 11,885—a further 55%—are not creatively employed. Obviously, this constitutes an important but under-utilised resource. If creative industries were encouraged to grow in Manitoba, and attracted to Manitoba, the potential of this important resource—Manitoba's Creative workforce—could be more fully utilised.

10. Which sub-sectors employ creative workers?

Figure 9: Sector analysis of creative employment

Manitoba	**Occupations**			
Industries	**Creative Occupation**	**Not Creative Occupation**	**Total in Industry**	Intensity
Advertising and marketing	645	4,210	4,855	13%
Architecture	885	3,890	4,775	19%
Crafts	190	1830	2,020	9%
Design	785	360	1,145	69%
Film, TV, video, radio and photography	1,070	1,465	2,535	42%
IT, software and computer services	2,295	2,255	4,550	50%
Museums, galleries and libraries	85	1,145	1,230	7%
Music, performing and visual arts	2,550	2,810	5,360	48%
Publishing	1,335	5,455	6,790	20%
Total of Occupation Type	**9,840**	**23,420**	**33,260**	30%

Canada	**Occupations**			
Industries	**Creative Occupation**	**Not Creative Occupation**	**Total in Industry**	Intensity
Advertising and marketing	39,490	207,905	247,395	16%
Architecture	36,145	193,280	229,425	16%
Crafts	7,300	59,380	66,680	11%
Design	41,725	16,380	58,105	72%
Film, TV, video, radio and photography	61,410	56,825	118,235	52%
IT, software and computer services	166,390	155,215	321,605	52%
Museums, galleries and libraries	2,565	24,995	27,560	9%
Music, performing and visual arts	85,415	112,915	198,330	43%
Publishing	51,500	168,975	220,475	23%
Total of Occupation Type	**491,940**	**995,870**	**1,487,810**	33%

Source: 2016 Census, author calculations from special commissioned Table
Units: jobs

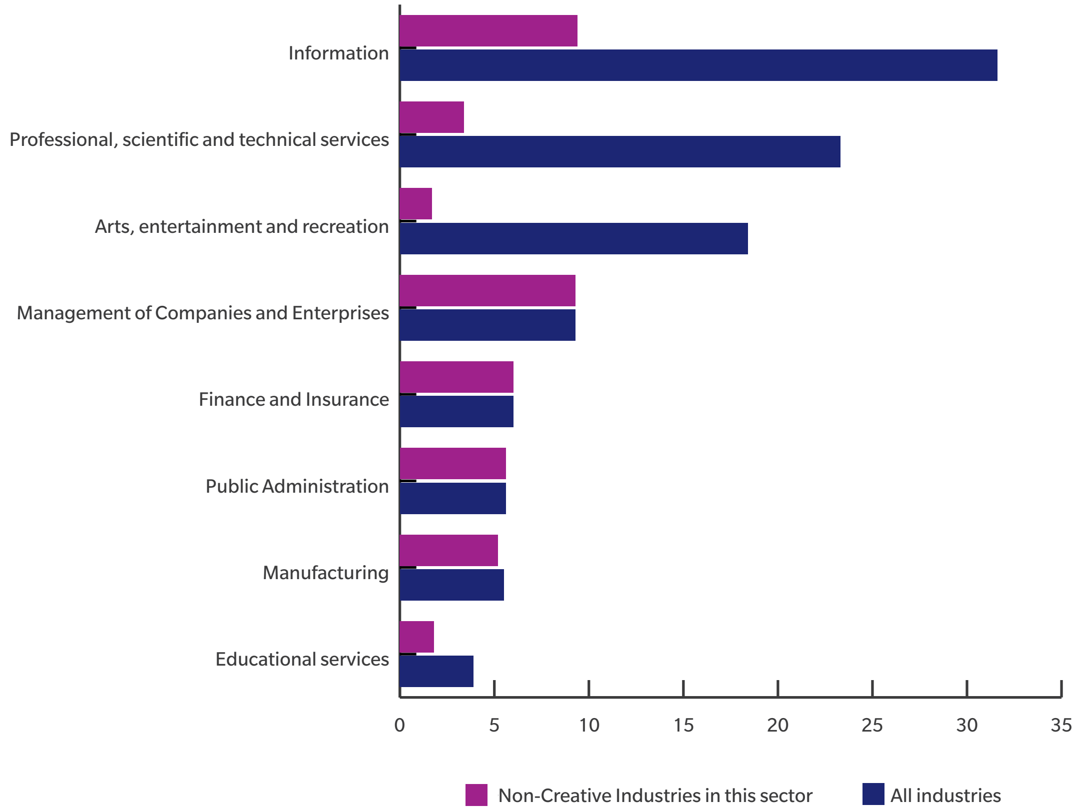
All sub-sectors in the creative industries are intense employers of creative labour. Intensities vary but even Museums, Galleries and Libraries, the sector that employs the proportionally fewest creative workers because of the large support workforce required, employs more than three times as many workers as the non-creative industries, while the IT, software and computer services sector, and the Film, TV, video, radio and photography sector both employ 17 times as many.

The apparently low figure for Crafts arises for two reasons. Some NAICS[8] industrial classification do not provide sufficiently fine-grained distinctions between creative activities and mass-production industries. For example code 3271 'Clay product and refractory manufacturing' includes both household ceramics and craft pottery. In other cases, NAICS makes the needed distinctions, but the census does not. Thus, for example code 3399 'Other miscellaneous manufacturing' includes six subsectors of which only one (33991 'Jewellery and silverware manufacturing') is clearly a craft industry. But the census only reports that a person works within 3399 and does not tell us whether this person makes silverware or 'sporting and athletic goods' (code 33992). In our next report we aim to improve on these inadequacies. However, the difficulty is less prominent in other sectors.

8 See Appendix A 'Sources and Methods' for an explanation of 'NAICS'

11. Non-creative industries use creative labour

Figure 10: Creative Intensity (proportion of the workforce that is creative) in Canada[9]



Main Industrial sector	All Industries	Non-Creative Industries in this sector	Creative Industries in this sector
Information	31.6%	9.4%	43.6%
Management of Companies and Enterprises	9.3%	9.3%	N/A
Finance and Insurance	6.0%	6.0%	N/A
Public Administration	5.6%	5.6%	N/A
Manufacturing	5.5%	5.2%	11.2%
Professional, scientific and technical services	23.3%	3.4%	31.5%
Educational services	3.9%	1.8%	27.5%
Arts, entertainment and recreation	18.4%	1.7%	48.9%

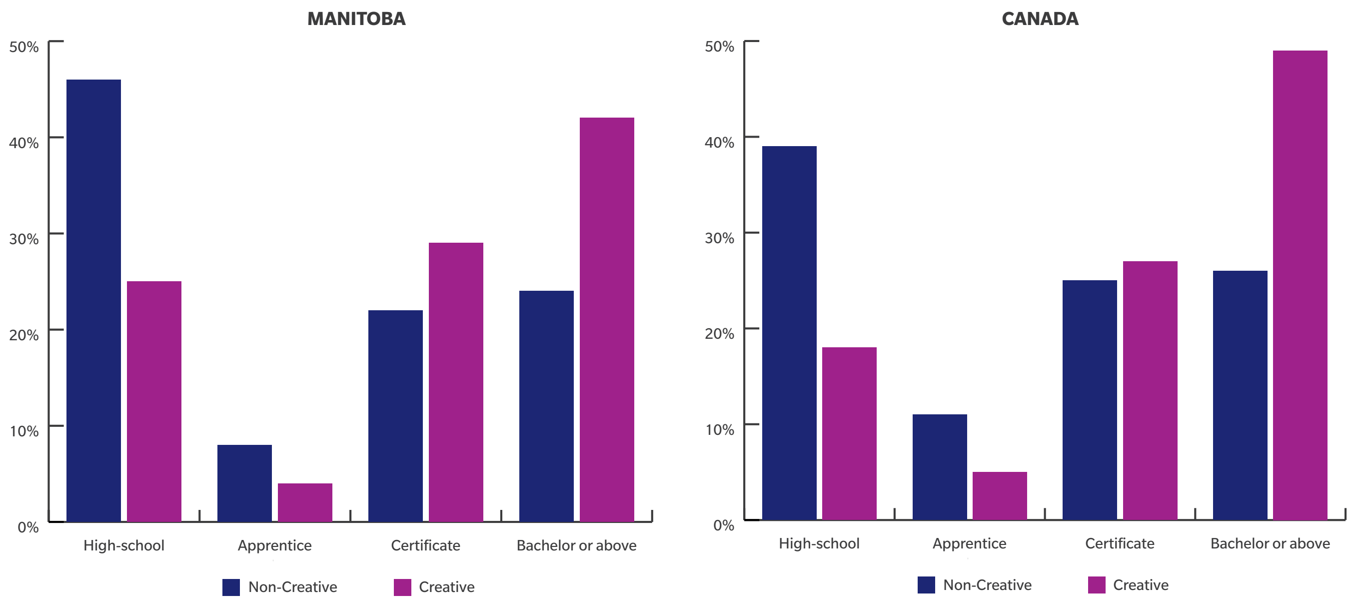
As noted above, creative workers are a resource for many sectors of the economy outside the creative industries; as the table shows, the most dynamic industries are those who need them most. Information and Management top the list with 9.4%, but these workers are clearly important in Finance and Manufacturing.

9 Creative intensity in Manitoba is not markedly different from in Canada, illustrating an important point: the technology of creative production is likely to be broadly similar across the nation.

12. The creative industries are an employer of skilled labour

Creative workers are typically talented and highly skilled. This section presents the educational attainment level of creative occupations using data from the 2016 Canadian Census. This highly educated creative workforce is scattered throughout a variety of industries and often individuals work dual-jobs moving between creative and non-creative industries. It constitutes an invaluable resource for all industries, but especially the creative industries who put this talent to work to create high value-added products.

Figure 11: Creative workforce by educational attainment



Category/Level of Education	High-school or lower	Apprenticeship	Diploma or Certificate below bachelor level	Bachelor or above
Manitoba				
Creative Occupations	25%	4%	29%	42%
Non-Creative Occupations	46%	8%	22%	24%
Difference	-21%	-4%	7%	18%
Canada				
Creative Occupations	18%	5%	27%	49%
Non-Creative Occupations	39%	11%	25%	26%
Difference	-21%	-6%	2%	23%

Units: percent of this row that has reached a given educational attainment
Source: Census 2016, Statcan special table, Author calculations.

The creative workforce is highly skilled and qualified in comparison with the non-creative workforce. It is thus a major resource in its own right, which on the basis of its educational classification will add higher-than-average value to the product of any industry it works in.

- 42% of Manitoba's creative workforce and 49% of Canada's possess a University certificate, diploma or degree above the bachelor level compared to 24% and 26% of the non-creative workforce.
- The proportion of Canada's non-creative occupations with no qualification above high school, at 39%, is over twice as great as for creative occupations. 46% of Manitoba's non-creative occupations have no qualification above high school, compared with 25% of its creative occupations.

Implications

Any province's educated and skilled workers are a resource which it has to cultivate. They are typically mobile and in demand. If they do not find satisfactory employment in Manitoba, they will move elsewhere. This can easily lead to the kind of vicious circle that plagues the USA's rustbelt cities (Moretti 2013), where the high-paying employers move out in search of top-notch workers, as the workers themselves migrate to locations that are both more suited to creative activity, and where employment is to be found.

On the other hand, if Manitoba's arts, cultural and industrial policies ensure that the province is an attractive place, a virtuous circle will be created in which employers from a wide range of industries, and the creative workers they increasingly need, are to be found.

This has taxpayer implications that are often concealed. Training qualified workers is a cost to the public, because they stay out of employment longer whilst acquiring their skills or developing their talent. But when in employment, they generate higher value. A province suffering from outward creative migration is therefore subsidising other provinces which get the benefits of the talent, without paying for it. On the other hand, a province which is a magnet for inward skilled and creative migrants will reap the benefits of the high value added — and the higher taxes — with which they reward it.

A creative workforce also brings many 'external' benefits, as economists call it, which benefit non-creative industries. They are the driving force behind tourism, creating the events, the performances and even the bar culture which makes the province a go-to destination. Not for nothing, for example, is Winnipeg the top folk festival location of North America, the biggest exporter of Aboriginal films, or home to the biggest collection of Inuit art in the world. These attractions are an integral part of a total economy in which Manitoba's creative workforce is an indispensable asset.

Appendix A: Sources and methods

This appendix outlines and explains the data sources used and the methods used to convert these data into the tables and figures in this report.

The Creative Industry approach

The Creative Industry approach is a World-wide standard. Pioneered in Australia, it formed the statistical basis for that country's *Creative Nation* policy,[10] and was adopted in 1998[11] by the UK's Department of Culture, Media and Sport (DCMS) where it formed the basis of the government's Creative Industry policy. Since then, undergoing successive refinements and improvements,[12] it has remained the basis of UK policy[13] for the past 20 years. It has since secured recognition as an international[14] and European[15] standard, providing an evidence base used by policy-makers at national, metropolitan[16] and provincial level in France,[17] Germany,[18] Austria,[19] Italy, Spain,[20] South Korea,[21] Singapore,[22] China,[23] and many others.

In 2014 the UK's Department of Culture, Media and Sport commissioned a thorough and rigorous revision of its statistical methods from the UK think tank NESTA (National Endowment for Science, Technology and the Arts) and, following a comprehensive consultation, adopted the standard on which this report is based.[24] A wide range of scholarly research material supports it.[25]

The approach has been explored in Canada and the US,[26] but has yet to be adopted as a standard by a recognised statistical authority.

The method complements approaches such as Canada's Cultural Statistical Framework[27] and the equivalent satellite account in the USA,[28] whose primary concern is with a *product*—cultural outputs. The creative industry approach's primary concern is a *resource*—creative labour. This permits us to define an *industry*—the creative industries—which makes intensive use of this resource.

The resource approach allows decision-makers to focus on the two most critical issues in economic development, namely jobs and wealth. It provides rigorous answers to the two key questions:

- Who does this industry employ?
- How much wealth do they create?

The resulting measures are therefore strictly comparable with the standard indicators of economic performance that are applied to all other industries such as Manufacturing, Agriculture, Mining, Retail or Finance. They provide the answers to two questions:

- What return will this industry provide for an investor?
- What economic value does it give to the public?

In devising and revising this approach, researchers were fully aware that public decision-makers, in deciding the support to give an industry, must assess both the economic value it creates, and the usefulness of its product. Its focus is on the first of

10 DCA 1994
11 DCMS 1998,2014, CIC 2014.
12 DCMS 2001, 2002, 2014, 2016
13 CIC 2014
14 UNCTAD 2004, UN 2010, Gordon and Beilby-Orrin 2006
15 Power and Nielsen 2010 provides a comprehensive list of European studies and applications.
16 For example Freeman 2002, Ratzenboek and Demel 2004
17 Camors et al. 2010
18 Sönderman et al. 2009.
19 Ratzenboek et al. 2004.
20 Boix et al. 2010.
21 Mundy 2015.
22 Heng et al. 2003.
23 Wu 2005, Hartley and Keane 2006.
24 DCMS 2014.
25 A selection includes Bakhshi et al. 2013. Freeman 2012, 2014, Jones et al. 2015, Caves 2000, Towse and Handke 2013, Bakhshi et al. 2015, Higgs and Cunningham 2008.
26 Conference Board 2008, NCN 2016.
27 Statistics Canada 2017.
28 NEA 2015.

these questions, placing it on a level playing field with all other potential recipients of funding whose purpose is economic development.

The product approach, and the resource approach, are not counterposed but focus on two different aspects of an economic activity, both of which are necessary.

Consider for example the owner of a hockey team. It matters how many goals the team score and let in, how many games they win, where they stand in the league and whether they make the playoffs. These are product measures: they are indicators of how well the team is performing. But it also matters how much money is taken at the gate, how much the players cost, and whether the team is making a profit or a loss. These are industry measures. Of course, they affect each other. A team that scores no goals will lose custom, and a team that has no money will find it hard to pay goal-scorers. But a complete picture requires both sets of measures. The creative industry approach, and the numbers in this report, provide measures of industry performance which complement, and complete, the picture provided by measures of cultural output such as the CSF.

The data come from four sources, abbreviated in the text as described below. Appendix B provides the data tables that we extracted from these sources.

Productivity and hours

Statistics Canada publishes a definitive data series covering two decades and recording numbers of jobs, hours of work, real and nominal output, and compensation (wages). This draws on a range of data sources including employer surveys, the labour force survey and detail tax records. It should therefore be considered the definitive source of information for industrial purposes. Most, but not all, the data in this report are drawn from this source.

Access: *Statistics Canada series 36-10-0480-01, Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts.*
Source www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3610048001 accessed September 2018

Labour Force Survey

The Labour Force Survey, which is augmented by Census data in Census years, is as its name implies a survey of households in which people are asked about their work. Being a standard source of information in most countries in the world, it provides a high degree of comparability between countries. We consulted it extensively. However it is not the only source of information on employment, being in most countries supplemented by surveys of businesses in which enterprises are asked about the people they employ. Moreover, since the sample size is small, very detailed enquiries about who works in a particular industry, in a particular location, and in a particular occupation, can produce unreliable results and are subject to redaction.[29]

Source: special series giving breakdown of the labour force by province and four-digit industry (NAICS) code, commissioned from Statcan in February 2018.

See also http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5103 accessed September 2018

Census 2016

2016 was the first year since 2006 that a full long census was conducted. The census of 2011 provided valuable information but since it was not mandatory has to be regarded as a very large survey. The 2016 census provided us with two critical sets of data.

First, it provides employment by both industry and occupation, for the four-digit NAICS and NOC codes that are the basis of the creative industry classification we used. This allowed us to construct the trident and sector breakdowns in sections 8 and 9. Second, it provided the information on educational attainment that lie behind the data in section 10.

The census can be accessed at https://www12.statcan.gc.ca/census-recensement/index-eng.cfm. For this report, we commissioned a special report covering Canada and Manitoba.

Data on educational attainment, Catalogue number: 98-400-X2016289, are available at https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016289

29 Data from surveys supplied by statistical agencies is redacted — removed from the data supplied to the public — when the sample concerned is so small that the confidentiality of the individuals who supplied the information is at risk, or simply because the results are not statistically reliable.

NESTA (National Endowment for Science, Technology and the Arts)

NESTA commissioned the report on which the current UK classification system is based (Bakhshi et al 2014). It subsequently produced a further report on the creative industries in Canada and the USA (Pratt et al. 2016), which is the source for the NAICS and NOC codes used as the basis of this report.

The Cultural Statistical Account (CSA)

As noted above, the data in this report are complementary to the data provided in the Cultural Satellite Account (CSA) and so we have not repeated or compared our data with that of the CSA. It is noteworthy however that the two datasets yield broadly similar conclusions. CSA data can be accessed at https://www.canada.ca/en/canadian-heritage/corporate/publications/general-publications/culture-satellite-account.html

NAICS, NACE, and SIC: industrial classification systems and the creative industry definition

The North American Industrial Classification System, or NAICS for short, is the standard system for classifying industries in the USA, Canada and Mexico. It differs in several respects from Europe's NACE (Nomenclature Générale des Activités Économiques dans les Communautés Européenne) system and the UK's NACE-based Standard Industrial Classification (SIC). The creative industry definition in this report is derived from a study by the British think tank NESTA (Nathan et al. 2014) which mapped SIC codes to their equivalent NAICS codes. The data in this report are provisional, pending research which we are undertaking into a refinement of this definition, based on Canadian and US data alone. Early results suggest the qualitative conclusions will not be affected.

Educational attainment

Statistics Canada provides a special table based on the census which reports on the relation between occupation and educational attainment. The catalogue number is 98-400-X2016289 and the data may be accessed at https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016289

Appendix B: Data tables

Data

Table B1a: Total jobs (thousands) Canada

Canada	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	14,408	14,748	15,144	15,490	15,648	16,045	16,404	16,662	16,912	17,185	17,547
Accommodation & Food Services	926	962	976	991	1,020	1,065	1,037	1,046	1,067	1,085	1,108
Agriculture, Forestry, Fishing & Hunting	454	444	425	391	346	356	347	343	347	330	326
Arts, entertainment & recreation	192	209	222	229	232	255	261	280	273	271	277
Construction	780	786	814	819	825	875	891	913	977	1,044	1,105
Educational services	918	935	961	973	998	1,046	1,061	1,074	1,089	1,105	1,130
Finance & Insurance	719	700	720	757	760	760	769	795	816	835	828
Health Care & Social Assistance	1,115	1,123	1,118	1,131	1,153	1,186	1,212	1,226	1,241	1,269	1,306
Information	245	268	296	304	309	308	313	317	309	312	323
Management of Companies & Enterprises	96	100	104	120	128	125	130	131	132	126	148
Manufacturing	1,979	1,990	2,039	2,103	2,049	2,026	2,030	2,044	2,020	1,939	1,894
Mining, Quarrying, & Oil & Gas Extraction	142	135	127	136	145	141	148	159	184	215	220
Other Services (except Public Administration)	1,262	1,334	1,388	1,401	1,451	1,508	1,559	1,549	1,557	1,595	1,627
Professional, scientific & technical services	669	745	775	813	838	843	896	915	936	968	1,013
Public Administration	1,093	1,083	1,094	1,124	1,160	1,176	1,209	1,213	1,233	1,261	1,296
Real estate & rental leasing	221	234	245	258	261	269	286	294	308	321	336
Retail trade	1,545	1,587	1,596	1,641	1,658	1,725	1,815	1,862	1,878	1,927	1,985
Transportation & Warehousing	653	667	690	702	704	712	714	733	725	756	769
Utilities	93	95	92	93	96	91	96	100	101	101	100
Waste Management	553	608	687	701	700	759	800	817	856	887	896
Wholesale trade	751	744	774	802	813	818	829	850	863	838	858
Creative Industries	896	995	1,048	1,087	1,107	1,148	1,201	1,216	1,233	1,260	1,289

(Table B1a—continued from previous page)

Canada	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total	17,547	17,804	17,508	17,837	18,126	18,327	18,587	18,702	18,888	19,094	19,438
Accommodation & Food Services	1,108	1,130	1,118	1,146	1,159	1,192	1,240	1,260	1,308	1,337	1,401
Agriculture, Forestry, Fishing & Hunting	326	311	298	291	300	286	364	343	334	346	353
Arts, entertainment & recreation	277	283	283	274	276	274	298	299	304	324	335
Construction	1,105	1,195	1,133	1,215	1,253	1,354	1,479	1,511	1,489	1,472	1,493
Educational services	1,130	1,151	1,171	1,184	1,187	1,203	1,222	1,232	1,247	1,272	1,296
Finance & Insurance	828	877	856	889	913	873	889	909	901	915	897
Health Care & Social Assistance	1,306	1,331	1,368	1,394	1,413	1,427	1,537	1,552	1,615	1,641	1,677
Information	323	332	318	328	331	333	341	344	333	331	325
Management of Companies & Enterprises	148	162	148	142	150	154	153	142	139	139	133
Manufacturing	1,894	1,773	1,634	1,634	1,643	1,637	1,610	1,601	1,568	1,561	1,600
Mining, Quarrying, & Oil & Gas Extraction	220	230	215	220	242	259	248	246	224	205	217
Other Services (except Public Administration)	1,627	1,661	1,683	1,729	1,758	1,783	1,802	1,805	1,863	1,889	1,879
Professional, scientific & technical services	1,013	1,054	1,028	1,054	1,086	1,084	1,112	1,129	1,152	1,179	1,222
Public Administration	1,296	1,348	1,412	1,431	1,440	1,421	1,296	1,292	1,287	1,305	1,325
Real estate & rental leasing	336	338	328	331	339	343	330	327	343	350	355
Retail trade	1,985	1,974	1,980	1,996	2,023	2,045	2,029	2,043	2,100	2,133	2,175
Transportation & Warehousing	769	761	748	776	794	810	781	785	793	781	814
Utilities	100	103	99	104	109	104	100	94	93	96	98
Waste Management	896	927	880	894	891	911	940	964	963	981	989
Wholesale trade	858	863	806	807	819	834	817	825	833	835	856
Creative Industries	1,289	1,338	1,327	1,352	1,391	1,399	1,440	1,455	1,466	1,494	1,543

Table B1b: Total jobs (thousands) Manitoba

Manitoba	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Total	575	582	591	600	598	614	618	624	629	637	644
Accommodation & Food Services	36	36	38	38	40	40	38	38	38	40	40
Agriculture, Forestry, Fishing & Hunting	36	34	31	29	24	25	25	26	26	26	25
Arts, entertainment & recreation	8	8	7	7	7	8	8	8	8	8	8
Construction	34	33	31	30	29	30	29	31	31	36	40
Educational services	33	34	36	38	37	39	42	43	44	43	43
Finance & Insurance	19	19	20	21	22	22	22	22	22	23	22
Health Care & Social Assistance	52	52	54	55	55	58	60	61	59	59	59
Information	7	8	8	8	9	9	9	9	10	10	9
Management of Companies & Enterprises	4	4	4	4	3	3	4	4	4	4	5
Manufacturing	65	67	69	72	69	67	66	69	69	68	69
Mining, Quarrying, & Oil and Gas Extraction	4	3	3	3	3	3	2	2	2	3	3
Other Services (except Public Administration)	52	53	56	57	61	68	69	64	64	65	66
Professional, scientific & technical services	15	16	17	16	16	17	18	18	19	20	19
Public Administration	59	58	55	60	61	64	63	63	65	63	64
Real estate & rental leasing	8	9	9	9	8	8	8	8	9	9	9
Retail trade	55	55	57	59	60	61	64	66	67	66	67
Transportation & Warehousing	40	42	42	41	41	41	39	39	40	41	40
Utilities	5	6	6	6	7	7	7	7	7	7	7
Waste Management	14	17	19	18	17	18	19	19	19	20	20
Wholesale trade	29	28	29	29	29	28	26	26	26	26	27
Creative Industries	24	25	27	26	27	29	30	29	30	31	31

(Table B1b—continued from previous page)

Manitoba	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total	644	657	656	664	670	679	687	688	697	700	707
Accommodation & Food Services	40	42	43	43	44	45	47	45	47	49	52
Agriculture, Forestry, Fishing & Hunting	25	25	23	23	22	20	25	24	24	23	23
Arts, entertainment & recreation	8	8	9	9	9	9	10	12	11	11	11
Construction	40	43	45	44	45	47	51	54	55	57	59
Educational services	43	45	47	46	48	50	50	50	51	50	50
Finance & Insurance	22	24	25	28	26	26	26	25	25	26	27
Health Care & Social Assistance	59	61	61	62	62	62	67	69	71	72	73
Information	9	10	9	9	9	9	9	9	9	9	7
Management of Companies & Enterprises	5	6	6	6	6	7	7	8	8	9	8
Manufacturing	69	68	66	64	65	66	61	64	60	57	58
Mining, Quarrying, & Oil & Gas Extraction	3	3	3	3	3	4	5	5	4	3	4
Other Services (except Public Administration)	66	68	68	71	73	75	80	77	80	82	80
Professional, scientific & technical services	19	20	21	22	22	22	23	24	25	25	26
Public Administration	64	65	68	71	71	70	69	68	67	67	66
Real estate & rental leasing	9	8	9	9	9	9	8	8	9	8	8
Retail trade	67	66	67	65	66	68	66	62	63	65	66
Transportation & Warehousing	40	39	36	37	37	37	34	34	34	34	35
Utilities	7	8	7	7	7	7	5	5	5	5	4
Waste Management	20	21	19	19	20	20	21	21	23	23	23
Wholesale trade	27	28	26	26	26	26	24	26	27	27	28
Creative Industries	31	31	32	32	32	33	34	32	35	34	35

Table B2a: Value added per year, billions of chained 2007 Canadian dollars, Canada

Canada	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	1,160	1,202	1,261	1,325	1,348	1,387	1,418	1,462	1,507	1,552	1,589
Accommodation & Food Services	24	26	27	28	28	29	28	29	29	30	30
Agriculture, Forestry, Fishing & Hunting	18	19	20	20	19	18	20	21	22	22	21
Arts, entertainment & recreation	8	8	8	9	9	9	9	10	10	10	10
Construction	64	66	69	73	78	81	84	90	94	98	102
Educational services	60	60	61	62	62	64	65	67	69	71	73
Finance & Insurance	64	67	69	73	75	77	78	82	85	91	95
Health Care & Social Assistance	67	67	69	71	72	73	75	76	77	78	80
Information	26	28	32	34	37	40	40	43	45	46	46
Management of Companies & Enterprises	7	7	7	8	9	9	10	10	10	10	11
Manufacturing	158	166	179	197	189	191	190	193	196	193	188
Mining, Quarrying, & Oil & Gas Extraction	104	106	106	109	109	113	117	118	119	122	123
Other Services (except Public Administration)	185	190	197	204	210	219	225	233	242	251	261
Professional, scientific & technical services	44	49	54	61	62	63	66	67	70	74	77
Public Administration	89	90	94	96	98	100	103	105	106	110	114
Real estate & rental leasing	46	47	51	53	57	59	60	61	63	64	65
Retail trade	48	51	53	57	59	63	65	67	70	74	77
Transportation & Warehousing	45	46	49	52	53	53	53	55	59	60	61
Utilities	31	31	31	31	29	31	31	31	33	32	33
Waste Management	23	24	27	28	30	32	34	36	37	39	40
Wholesale trade	49	53	56	60	61	63	66	68	72	76	80
Creative Industries	52	57	61	68	70	71	73	75	78	82	85

(Table B2a—continued from previous page)

Canada	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total	1,589	1,605	1,560	1,615	1,668	1,701	1,746	1,797	1,818	1,845	1,906
Accommodation & Food Services	30	30	30	30	31	32	33	35	35	36	37
Agriculture, Forestry, Fishing & Hunting	21	23	22	22	23	23	27	25	26	27	27
Arts, entertainment & recreation	10	10	10	10	10	10	10	10	10	11	11
Construction	102	105	98	106	111	119	125	128	122	118	123
Educational services	73	76	77	79	79	81	82	83	85	86	87
Finance & Insurance	95	94	93	95	98	100	104	107	112	118	121
Health Care & Social Assistance	80	82	83	84	86	87	88	89	91	93	95
Information	46	47	46	47	48	48	48	50	50	50	51
Management of Companies & Enterprises	11	12	12	11	11	11	12	11	11	11	11
Manufacturing	188	178	153	161	166	169	168	173	173	174	180
Mining, Quarrying, & Oil & Gas Extraction	123	121	108	118	127	124	131	141	138	137	148
Other Services (except Public Administration)	261	271	278	286	295	304	314	324	334	342	351
Professional, scientific & technical services	77	79	77	77	81	83	85	90	91	92	95
Public Administration	114	118	125	128	130	129	128	129	129	131	133
Real estate & rental leasing	65	65	66	68	70	71	73	74	77	79	81
Retail trade	77	80	78	80	81	81	85	86	89	92	96
Transportation & Warehousing	61	61	59	61	63	64	65	69	71	73	77
Utilities	33	35	33	33	35	34	34	35	35	35	37
Waste Management	40	40	38	39	39	41	41	43	43	43	43
Wholesale trade	80	79	74	79	85	88	92	94	95	95	102
Creative Industries	85	87	84	83	87	89	92	98	99	100	104

Table B2b: Value added per year, millions of chained 2007 Canadian dollars, Manitoba

Manitoba (millions)	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	38,833	40,361	40,863	42,852	43,337	44,038	44,718	45,563	46,983	48,850	50,385
Accommodation & Food Services	781	812	785	914	1,004	830	834	859	857	841	850
Agriculture, Forestry, Fishing & Hunting	1,219	1,419	1,444	1,635	1,347	1,383	1,516	1,412	1,345	1,509	1,544
Arts, entertainment & recreation	192	236	274	280	295	294	279	282	283	269	279
Construction	2,182	2,273	2,178	2,024	2,265	2,222	2,244	2,290	2,391	2,715	2,813
Educational services	1,917	1,930	1,995	2,035	2,056	2,106	2,155	2,260	2,321	2,361	2,420
Finance & Insurance	1,883	1,929	2,117	2,132	2,258	2,361	2,380	2,414	2,480	2,590	2,683
Health Care & Social Assistanc e	2,435	2,518	2,554	2,589	2,672	2,762	2,886	2,967	2,951	2,932	2,940
Information	840	908	896	997	1,154	1,303	1,289	1,360	1,369	1,407	1,445
Management of Companies & Enterprises	237	276	242	244	269	284	273	263	252	262	273
Manufacturing	4,355	4,508	4,206	4,618	4,509	4,634	4,646	4,737	4,916	4,882	5,262
Mining, Quarrying, & Oil & Gas Extraction	2,312	2,353	2,084	2,532	2,319	2,102	2,300	2,248	2,234	2,465	2,390
Other Services (except Public Administration)	5,804	5,938	6,186	6,623	6,949	7,488	7,667	7,780	8,140	8,535	9,085
Professional, scientific & technical services	988	1,079	1,228	1,131	1,131	1,165	1,193	1,196	1,228	1,317	1,313
Public Administration	3,920	3,993	4,162	4,371	4,303	4,330	4,381	4,394	4,420	4,496	4,648
Real estate & rental leasing	1,980	2,049	1,994	1,977	1,906	1,711	1,705	1,729	1,677	1,687	1,573
Retail trade	1,615	1,697	1,842	1,933	2,050	2,151	2,236	2,339	2,420	2,529	2,692
Transportation & Warehousing	2,363	2,390	2,547	2,661	2,665	2,605	2,600	2,673	2,859	2,998	3,002
Utilities	1,543	1,450	1,368	1,416	1,391	1,380	1,226	1,368	1,708	1,675	1,681
Waste Management	429	546	630	569	612	670	695	736	736	756	772
Wholesale trade	1,839	2,058	2,132	2,172	2,180	2,257	2,214	2,256	2,395	2,625	2,722
Creative Industries	1,296	1,392	1,504	1,364	1,363	1,390	1,352	1,377	1,416	1,462	1,526

(Table B2b—continued from previous page)

Manitoba (millions)	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Total	50,385	52,034	52,027	53,471	54,753	56,425	57,707	58,903	59,747	60,916	62,605
Accommodation & Food Services	850	869	896	885	931	950	974	1,026	1,045	1,086	1,115
Agriculture, Forestry, Fishing & Hunting	1,544	1,893	1,735	1,526	1,271	1,577	2,139	1,768	1,923	1,969	2,142
Arts, entertainment & recreation	279	282	287	290	298	309	291	314	324	339	345
Construction	2,813	3,190	3,310	3,692	3,586	3,649	3,697	4,044	4,067	4,299	4,638
Educational services	2,420	2,518	2,562	2,611	2,672	2,753	2,771	2,847	2,882	2,930	2,990
Finance & Insurance	2,683	2,623	2,612	2,715	2,776	2,826	2,929	2,937	3,075	3,195	3,232
Health Care & Social Assistance	2,940	2,989	3,084	3,202	3,224	3,255	3,477	3,511	3,558	3,619	3,696
Information	1,445	1,445	1,440	1,484	1,514	1,524	1,475	1,470	1,460	1,462	1,457
Management of Companies & Enterprises	273	302	300	278	296	318	336	305	316	334	334
Manufacturing	5,262	5,319	4,938	4,882	5,181	5,382	5,442	5,517	5,357	5,411	5,508
Mining, Quarrying, & Oil & Gas Extraction	2,390	2,424	2,492	2,740	3,027	3,334	3,120	3,030	2,935	2,774	2,714
Other Services (except Public Administration)	9,085	9,394	9,626	9,908	10,232	10,589	10,764	11,197	11,586	11,895	12,168
Professional, scientific & technical services	1,313	1,360	1,347	1,400	1,477	1,515	1,617	1,652	1,711	1,717	1,756
Public Administration	4,648	4,798	5,030	5,134	5,266	5,333	5,111	5,036	5,030	5,095	5,162
Real estate & rental leasing	1,573	1,610	1,693	1,722	1,770	1,842	1,859	1,911	1,976	2,023	2,082
Retail trade	2,692	2,748	2,769	2,809	2,875	2,879	3,002	2,986	3,035	3,135	3,272
Transportation & Warehousing	3,002	2,968	2,881	3,007	3,124	3,185	3,306	3,531	3,587	3,677	3,852
Utilities	1,681	1,720	1,554	1,559	1,574	1,528	1,551	1,577	1,600	1,645	1,650
Waste Management	772	787	750	767	789	842	839	858	870	866	866
Wholesale trade	2,722	2,794	2,721	2,859	2,867	2,835	3,006	3,386	3,410	3,445	3,626
Creative Industries	1,526	1,595	1,614	1,625	1,756	1,787	1,912	1,903	1,919	1,953	1,947

Table B3a: Productivity: output per hour, chained 2007 Dollars, Canada

Canada	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total	45.2	45.8	46.8	48.2	48.8	49.4	49.6	50.0	51.1	51.9	52.1
Accommodation & Food Services	16.4	16.4	17.0	17.5	17.4	17.3	17.2	17.6	17.7	17.4	17.2
Agriculture, Forestry, Fishing & Hunting	18.3	19.8	22.2	24.0	25.1	23.5	26.0	28.5	29.0	29.7	30.1
Arts, entertainment & recreation	25.2	24.0	23.3	23.6	24.5	23.0	22.5	21.7	22.7	23.3	23.5
Construction	41.5	42.5	42.9	45.1	47.9	47.3	48.5	49.3	48.9	47.9	46.8
Creative Industries	57.8	57.6	58.5	62.5	63.0	61.8	60.9	61.9	63.1	65.0	65.6
Educational services	41.8	41.0	40.9	40.9	40.1	39.5	40.1	41.0	41.7	42.5	42.7
Finance & Insurance	50.8	54.2	55.7	55.2	57.6	58.6	59.6	60.3	60.8	63.2	67.6
Health Care & Social Assistance	37.8	37.5	37.9	38.4	38.5	38.5	38.6	38.4	39.0	38.8	38.3
Information	59.6	59.5	59.2	63.5	67.7	73.7	73.6	75.9	80.9	84.3	81.7
Management of Companies & Enterprises	37.2	37.4	36.1	34.2	35.8	40.9	40.4	41.5	40.1	44.5	40.1
Manufacturing	40.6	42.6	45.0	48.3	47.5	48.7	48.3	48.4	50.2	51.6	51.6
Mining, Quarrying, & Oil & Gas Extraction	332.9	373.5	391.8	365.6	337.7	369.6	353.5	331.8	284.7	254.3	255.0
Other Services (except Public Administration)	85.8	84.2	83.1	85.5	85.9	86.4	87.0	90.3	93.7	95.3	97.3
Professional, scientific & technical services	34.9	35.0	36.5	39.6	39.8	40.4	40.3	39.9	40.5	41.5	41.3
Public Administration	48.0	49.2	50.6	50.5	50.2	50.9	51.6	51.9	52.7	53.2	53.1
Real estate & rental leasing	117.5	112.4	116.1	113.9	122.3	123.3	118.0	117.6	117.1	113.8	111.4
Retail trade	18.9	19.5	20.7	21.3	22.3	22.9	22.8	22.8	23.5	24.4	24.9
Transportation & Warehousing	35.3	34.9	35.6	37.3	38.2	37.9	37.8	37.7	41.0	40.4	40.7
Utilities	182.9	175.4	177.8	184.9	160.6	184.9	168.1	160.7	167.1	169.3	179.1
Waste Management	24.9	24.3	24.1	24.4	25.4	25.6	24.9	25.9	25.9	25.7	26.3
Wholesale trade	32.6	36.0	37.0	37.9	38.3	39.5	41.2	41.2	43.4	47.1	48.3

(Table B3a—continued from previous page)

Canada	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total	52.1	52.1	52.5	53.3	54.3	54.3	55.1	56.5	56.4	56.8	58.0
Accommodation & Food Services	17.2	17.4	18.0	17.7	17.9	17.6	17.8	18.6	18.1	18.3	18.0
Agriculture, Forestry, Fishing & Hunting	30.1	34.6	33.4	35.2	36.1	37.7	35.2	34.5	36.7	37.3	36.8
Arts, entertainment & recreation	23.5	22.9	23.4	23.2	23.5	23.8	24.2	24.8	25.1	25.2	25.8
Construction	46.8	44.5	45.2	45.3	45.5	45.0	42.4	42.5	41.1	40.6	41.7
Creative Industries	65.6	64.7	63.1	61.7	62.5	63.7	64.1	67.2	67.5	67.1	67.3
Educational services	42.7	43.4	44.3	44.2	44.9	44.6	45.5	46.1	45.9	45.8	46.2
Finance & Insurance	67.6	62.5	64.1	63.5	64.1	67.0	66.8	67.3	70.6	72.0	76.9
Health Care & Social Assistance	38.3	38.5	38.1	38.2	38.5	38.4	36.5	36.7	35.8	35.9	35.8
Information	81.7	80.0	83.6	82.6	82.2	83.2	83.8	84.8	86.6	87.0	90.8
Management of Companies & Enterprises	40.1	39.1	43.9	44.6	42.7	41.1	43.0	43.2	44.6	43.7	44.5
Manufacturing	51.6	52.3	50.4	52.0	53.6	54.3	54.0	56.1	57.0	57.7	58.6
Mining, Quarrying, & Oil & Gas Extraction	255.0	237.5	237.1	245.3	236.2	216.0	235.8	255.4	283.7	309.9	308.1
Other Services (except Public Administration)	97.3	99.3	102.1	102.6	103.6	104.9	108.7	112.1	112.7	113.9	118.0
Professional, scientific & technical services	41.3	41.4	42.1	41.6	42.1	43.0	44.1	46.2	45.5	45.4	45.3
Public Administration	53.1	53.1	53.4	54.1	54.9	55.6	60.2	60.3	60.7	60.5	60.9
Real estate & rental leasing	111.4	111.2	117.0	117.8	121.4	117.5	125.5	131.0	128.2	129.7	132.4
Retail trade	24.9	25.9	25.7	26.3	26.4	26.2	27.3	27.5	27.4	27.7	28.7
Transportation & Warehousing	40.7	41.0	41.1	40.7	41.8	41.5	43.5	45.3	45.7	48.1	48.6
Utilities	179.1	175.5	175.6	172.4	169.4	175.7	183.5	204.1	202.2	199.5	203.0
Waste Management	26.3	25.4	25.9	26.0	26.7	27.2	27.3	27.9	27.5	27.1	26.9
Wholesale trade	48.3	47.6	48.3	51.9	54.7	55.3	58.0	59.4	59.2	59.1	62.7

Table B3b: Productivity: output per hour, chained 2007 Dollars, Manitoba

Manitoba	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Total	38.2	39.1	39.3	40.6	41.5	41.6	41.7	42.3	43.6	44.7	45.1
Accommodation & Food Services	13.8	14.3	13.2	15.4	16.4	13.8	14.7	15.1	15.2	14.1	14.4
Agriculture, Forestry, Fishing & Hunting	15.6	18.9	20.7	25.4	24.8	24.3	25.9	24.5	22.9	26.1	26.9
Arts, entertainment & recreation	15.7	19.5	25.3	23.9	26.6	23.1	22.3	22.2	22.0	20.6	21.9
Construction	32.7	34.9	36.1	33.7	40.3	40.1	39.8	38.8	40.7	39.0	35.9
Creative Industries	53.5	55.7	56.5	52.4	51.0	48.1	44.9	46.8	46.9	46.5	48.8
Educational services	37.0	34.8	35.7	34.3	34.8	35.6	33.4	34.9	34.5	36.4	36.6
Finance & Insurance	57.7	61.2	61.2	59.8	62.6	64.6	64.8	65.5	66.9	68.6	73.7
Health Care & Social Assistance	30.0	30.8	30.2	29.2	30.0	29.3	31.0	31.3	31.8	32.2	31.3
Information	70.3	64.4	62.9	75.5	80.5	90.2	87.4	84.2	86.2	81.6	91.3
Management of Companies & Enterprises	33.8	37.4	35.2	35.9	46.4	46.9	40.4	34.5	37.2	35.0	33.4
Manufacturing	34.6	34.8	32.2	33.8	34.2	37.1	36.6	35.8	38.0	38.0	40.2
Mining, Quarrying, & Oil & Gas Extraction	311.4	347.1	327.4	416.7	420.1	406.1	420.1	443.1	486.4	462.8	404.5
Other Services (except Public Administration)	68.1	66.8	65.8	68.8	69.3	69.7	67.4	75.2	79.1	82.6	84.7
Professional, scientific & technical services	34.9	36.8	39.6	36.4	37.8	39.3	37.8	36.5	37.6	37.4	38.6
Public Administration	38.9	41.1	44.9	43.5	41.5	40.2	41.0	41.1	41.6	42.5	41.8
Real estate & rental leasing	131.5	131.2	121.1	129.2	139.7	132.0	116.6	117.9	112.4	106.1 100.7	
Retail trade	18.5	19.5	20.6	20.5	21.5	22.2	22.0	22.9	23.1	25.2	26.2
Transportation & Warehousing	28.8	27.5	30.6	32.7	33.0	31.5	32.6	33.1	34.4	35.3	36.2
Utilities	155.1	138.4	121.5	122.8	109.5	117.4	88.8	99.1	131.2	129.2	125.3
Waste Management	19.8	19.7	20.7	20.2	22.1	23.1	24.0	24.4	24.7	23.5	23.8
Wholesale trade	33.0	37.9	37.7	38.7	38.9	41.8	44.3	45.3	47.6	52.5	52.5

(Table B3b—continued from previous page)

Manitoba	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total	45.1	46.0	46.5	47.6	48.6	49.0	49.7	50.5	50.2	51.6	52.3
Accommodation & Food Services	14.4	14.2	14.0	14.2	15.0	14.9	14.7	16.1	15.4	15.8	15.5
Agriculture, Forestry, Fishing & Hunting	26.9	35.5	34.7	31.4	27.5	36.6	39.0	34.3	39.1	39.3	42.7
Arts, entertainment & recreation	21.9	22.5	21.7	21.3	21.8	21.8	21.8	19.4	22.9	23.2	23.3
Construction	35.9	38.3	39.0	43.2	40.3	39.4	36.3	36.9	36.1	37.3	38.4
Creative Industries	48.8	51.7	51.2	50.9	54.1	54.5	56.2	58.7	55.3	56.8	55.7
Educational services	36.6	37.0	36.2	37.8	37.8	36.5	37.3	38.8	37.3	40.0	41.4
Finance & Insurance	73.7	65.0	60.4	58.8	65.5	67.4	66.8	69.2	71.3	72.9	69.7
Health Care & Social Assistance	31.3	31.1	31.9	32.9	34.0	33.8	34.0	32.2	31.9	32.4	32.9
Information	91.3	89.0	97.6	99.8	106.2	98.9	95.5	107.6	104.0	95.3	128.1
Management of Companies & Enterprises	33.4	27.7	27.2	26.1	29.7	23.7	30.2	26.4	24.1	25.4	26.8
Manufacturing	40.2	41.1	40.0	40.8	43.0	43.5	45.5	44.4	46.0	49.1	48.6
Mining, Quarrying, & Oil & Gas Extraction	404.5	356.9	385.4	377.4	397.6	333.5	307.7	296.5	311.0	386.8	342.1
Other Services (except Public Administration)	84.7	84.3	88.3	88.4	87.6	89.1	88.4	93.8	90.9	94.7	97.4
Professional, scientific & technical services	38.6	37.9	37.0	37.4	39.0	39.9	41.8	43.0	41.2	41.8	39.9
Public Administration	41.8	43.5	43.1	43.4	43.8	45.2	44.1	43.2	43.1	44.7	46.6
Real estate & rental leasing	100.7	109.0	113.2	114.4	117.5	120.8	140.5	152.4	145.4	167.9	156.9
Retail trade	26.2	27.1	27.1	28.7	29.2	28.2	29.3	31.3	31.0	31.6	32.4
Transportation & Warehousing	36.2	37.1	41.2	41.0	42.2	43.0	47.5	51.1	51.7	53.3	53.9
Utilities	125.3	121.5	124.2	120.1	116.5	112.3	188.3	185.2	186.5	196.9	204.2
Waste Management	23.8	23.4	23.9	24.2	25.2	26.4	27.8	28.5	26.2	25.6	24.7
Wholesale trade	52.5	53.3	56.6	57.9	58.5	57.4	63.5	68.2	64.1	64.3	67.1

Industry and occupation codes

A creative industry consists of all the enterprises, in a given product line such as Film, Music, or Advertising, that make especially intensive use of creative labour. Many independent studies, many listed in our reference section, and covering several countries, have shown that such groups of enterprises, or creative sectors as they are called in this report, are a prominent and growing feature of the modern economy. Our report bears out this research.

Estimating the jobs and output of these creative sectors is widely known as mapping, following the terminology of the first UK Creative Industries report.[30] The first step is to identify creative occupations which, broadly, are defined as human functions that cannot be mechanised or replaced by machinery. The next step is to identify those branches of the economy which use these types of labour. The first are identified by occupation or NOC codes, short for National Occupation Code, and the second by industrial or NAIC codes, short for North American Industrial Code.

Both sets of codes are taken from the NESTA report (Pratt et al 2014). They were obtained by matching the codes used in UK and Europe (the so-called NACE or SIC classification) to their counterparts in North American and Canada, the NAICS-NOCS classification, a process known as crosswalking. Because there is not always an exact match, this means that some measures will be overestimated and some underestimated. We are in the process of researching a more exact definition, based purely on the North American classification system; the results in this report should therefore be taken as provisional. It provides strong initial evidence that the creative industries are as important in Canada as in the rest of the world and we are confident that its main qualitative conclusions will be borne out by this new research.

Table B5: NAICS codes used in the creative industry definition

NAICS	NAICS description	CI sector
5416	Management, Scientific & Technical Consulting Services	Advertising and marketing
5418	Advertising, Public Relations, and Related Services	Advertising and marketing
5413	Architectural, Engineering & Related Services	Architecture
3279	Other Non-Metallic Mineral Prod. Manufacturing	Crafts
3379	Other Furniture-Related Prod. Manufacturing	Crafts
3399	Other Miscellaneous Manufacturing	Crafts
5414	Specialized Design Services	Design
5121	Motion Picture & Video Industries	Film, TV, video, radio and photography
5122	Sound Recording Industries	Film, TV, video, radio and photography
5151	Radio and Television Broadcasting	Film, TV, video, radio and photography
5152	Pay and Specialty Television	Film, TV, video, radio and photography
5112	Software Publishers	IT, software and computer services
5182	Data Processing, Hosting, and Related Services	IT, software and computer services
5415	Computer Systems Design & Related Services	IT, software and computer services
7121	Heritage Institutions	Museums, galleries and libraries
6116	Other Schools & Instruction	Music, performing and visual arts
7111	Performing Arts Companies	Music, performing and visual arts
7113	Promoters of Performing Arts, Sports & Similar Events	Music, performing and visual arts
7114	Agents & Managers for Artists, Athletes, Entertainment	Music, performing and visual arts
7115	Independent Artists, Writers & Performers	Music, performing and visual arts

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Table B6: NOCS codes used in section 9.0

NOCS	Occupation description
1223	Human resources and recruitment officers
2151	Architects
2152	Landscape architects
2153	Urban and land use planners
2171	Information systems analysts and consultants
2173	Software engineers and designers
2174	Computer programmers and interactive media developers
2175	Web designers and developers
2231	Civil engineering technologists and technicians
2234	Construction estimators
2252	Industrial designers
2283	Information systems testing technicians
4163	Business development officers and marketing researchers and consultants
5111	Librarians
5112	Conservators and curators
5113	Archivists
5121	Authors and writers
5122	Editors
5123	Journalists
5131	Producers, directors, choreographers and related occupations
5132	Conductors, composers and arrangers
5133	Musicians and singers
5134	Dancers
5135	Actors and comedians
5136	Painters, sculptors and other visual artists
5221	Photographers
5222	Film and video camera operators
5223	Graphic arts technicians
5224	Broadcast technicians
5225	Audio and video recording technicians
5226	Other technical and co-ordinating occupations in motion pictures, broadcasting and the performing arts
5241	Graphic designers and illustrators
5242	Interior designers and interior decorators
5243	Theatre, fashion, exhibit and other creative designers
5244	Artisans and craftspersons
5245	Patternmakers — textile, leather and fur products
6342	Tailors, dressmakers, furriers and milliners
7236	Ironworkers
7272	Cabinetmakers
9414	Concrete, clay and stone forming operators
9417	Machining tool operators

IOIC Codes

Data in Statcan's Productivity and Hours series are classified using a variant of the NAICS system designed to match the results to the reporting system of the National Accounts. The codes used, known as IOIC (Input-output Industry codes) are closely based on the NAICS system, but in a few cases, do not contain sufficient detail. In these cases, we used data from the LFS to estimate the proportion of the relevant IOIC job count, or GDP, that should be assigned to the creative industry NAICS code that are included in the IOIC code concerned. Table B7 shows the proportions that are used in these cases.

Table B7: proportions of IOIC codes assigned to corresponding NAICS codes

IOIC code	Proportion	NAICS code	NAICS description
BS327A00	0.7921	3279	Non-metallic mineral product manufacturing (except cement and concrete products) [327A] (27)
BS71A000	0.1726	7121	Performing arts, spectator sports and related industries, and heritage institutions [71A] (51)
BS71A000	0.7088	7110	Performing arts, spectator sports and related industries, and heritage institutions [71A] (51)
BS812A00	0.8399	8129	Personal care services and other personal services [812A] (56)
BS611A00	0.8529	6116	Other educational services [611A] (48)
GS611A00	0.8529	6116	Other educational services [611A] (48)

Educational Attainment

The Census uses the following categories of educational attainment:
(1) No certificate, diploma or degree
(2) Secondary (high) school diploma or equivalency certificate
(3) Apprenticeship or trades certificate or diploma
(4) Trades certificate or diploma other than Certificate of Apprenticeship or Certificate of Qualification
(5) Certificate of Apprenticeship or Certificate of Qualification
(6) College, CEGEP or other non-university certificate or diploma
(7) University certificate or diploma below bachelor level
(8) University certificate, diploma or degree at bachelor level or above
(9) Bachelor's degree
(10) University certificate, diploma or degree above bachelor level

We group these as follows:
1–2 High School or less
3–6 Apprenticeship
7 College/Non-University Diploma, or, University Certificate below bachelor level
8–10 Bachelor's Degree or above

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