



Labour Market Information

Information sur le marché du travail



Some Perspectives on IT and Biotech Labour Markets in Ontario and Toronto

November 2004

Ontario Labour Market Information Service
Human Resources and Skills Development

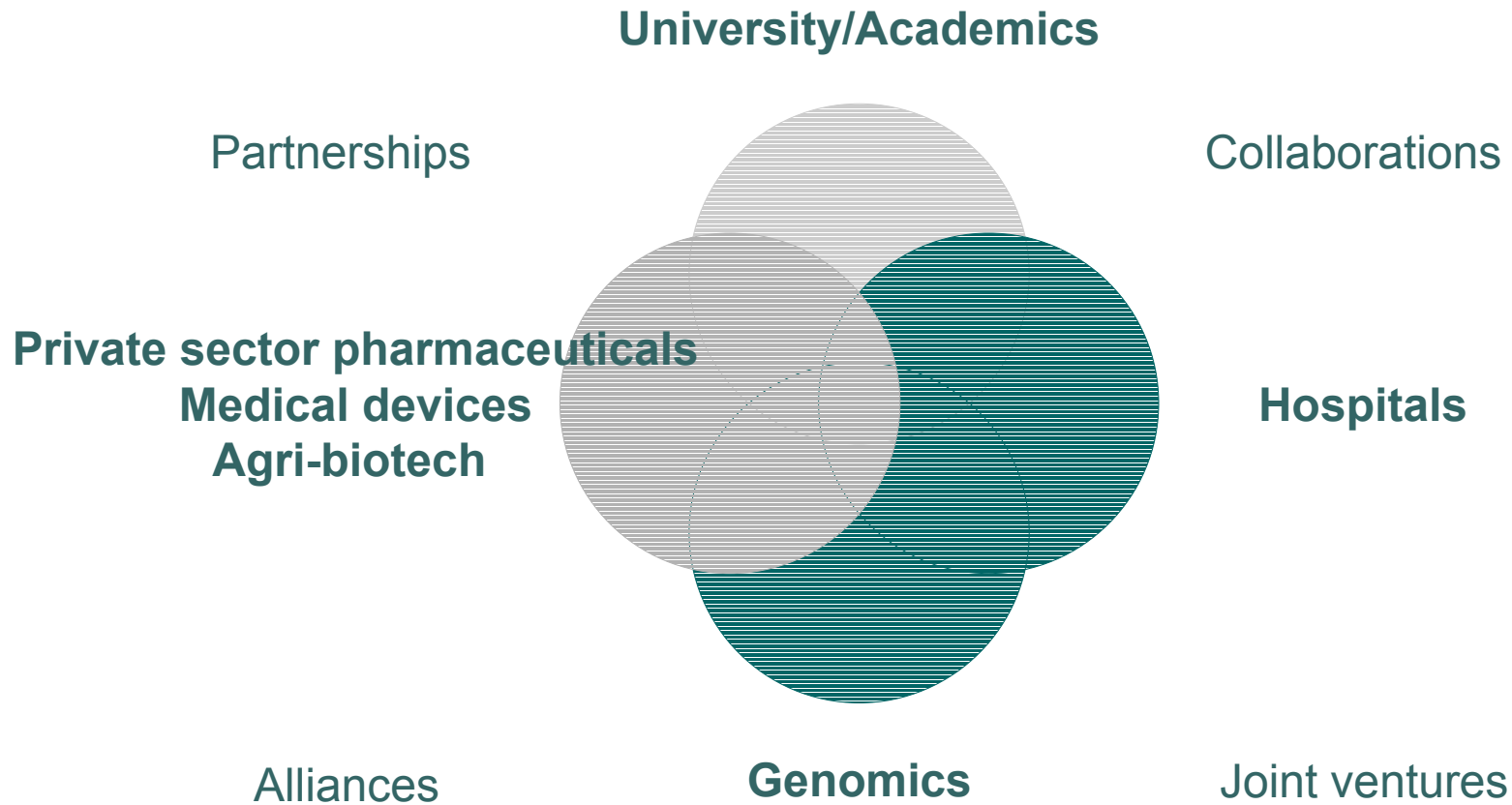


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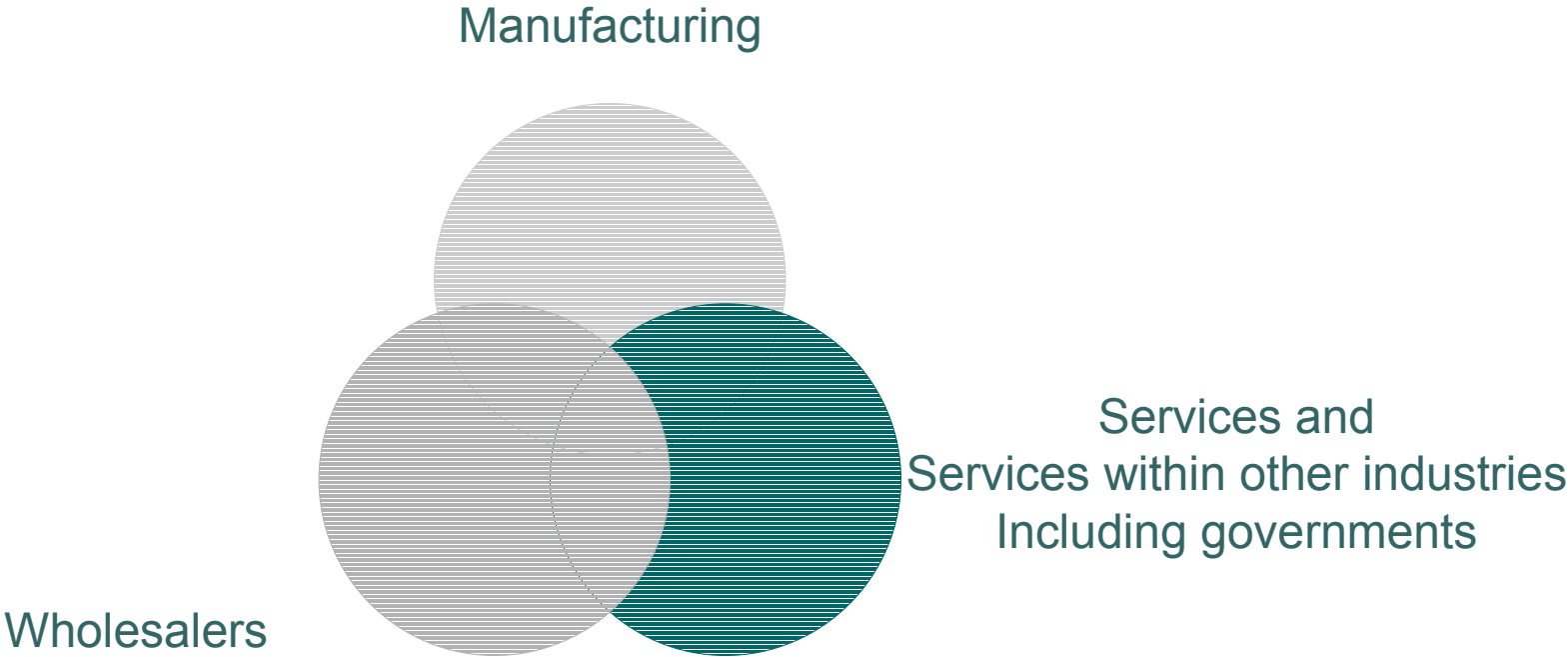


Major Players in the Biotech Industry





IT Industry Structure



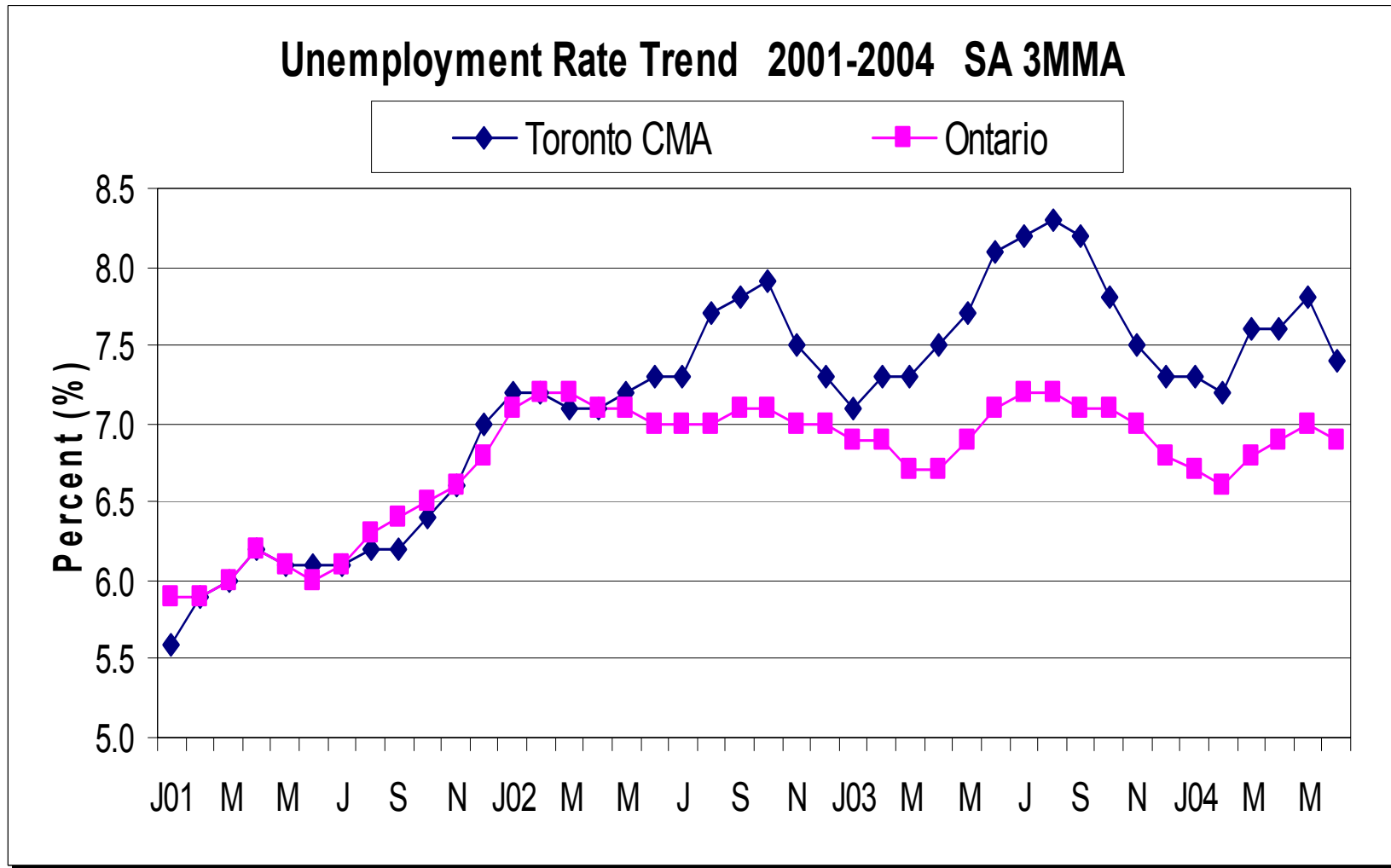


IT and Biotech Relative to the Overall Ontario and Toronto Labour Markets

	Ontario	Toronto	%
Overall Employment (2001 Census)	5,713,900	2,413,100	44.2%
Biotech (Stat Can) est.	3,346	30,000?	?
IT (Stat Can) est.	263,620	147,615	55.9%



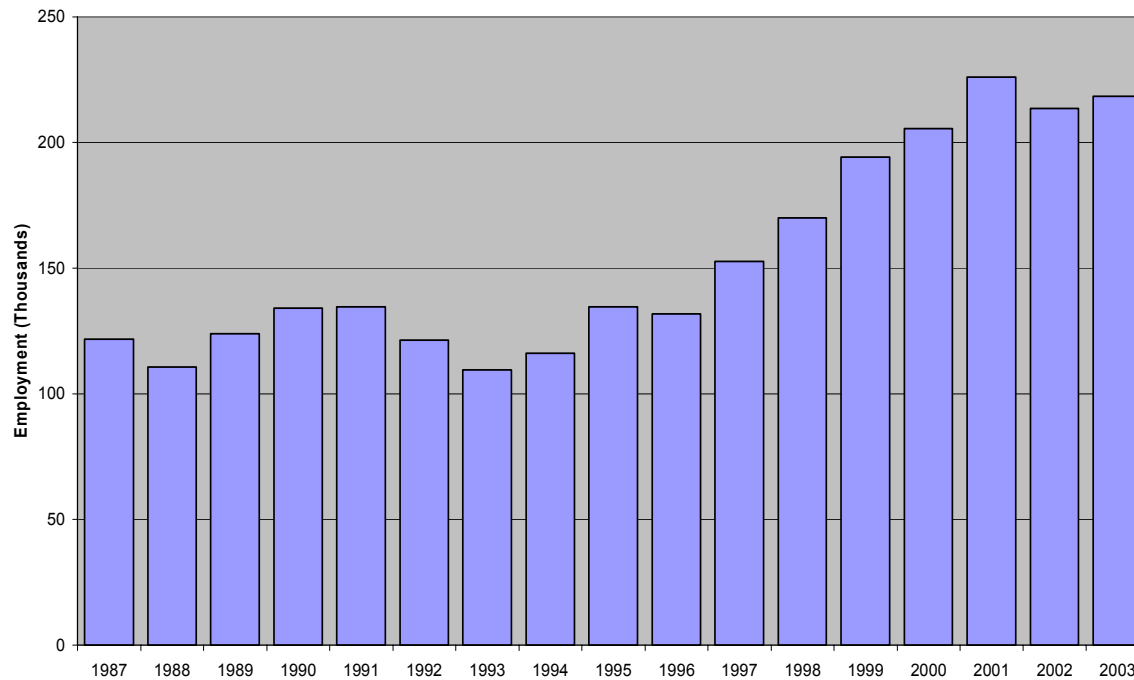
Overall labour market trends are important but not the whole story...





Trend in Natural and Applied Science Employment

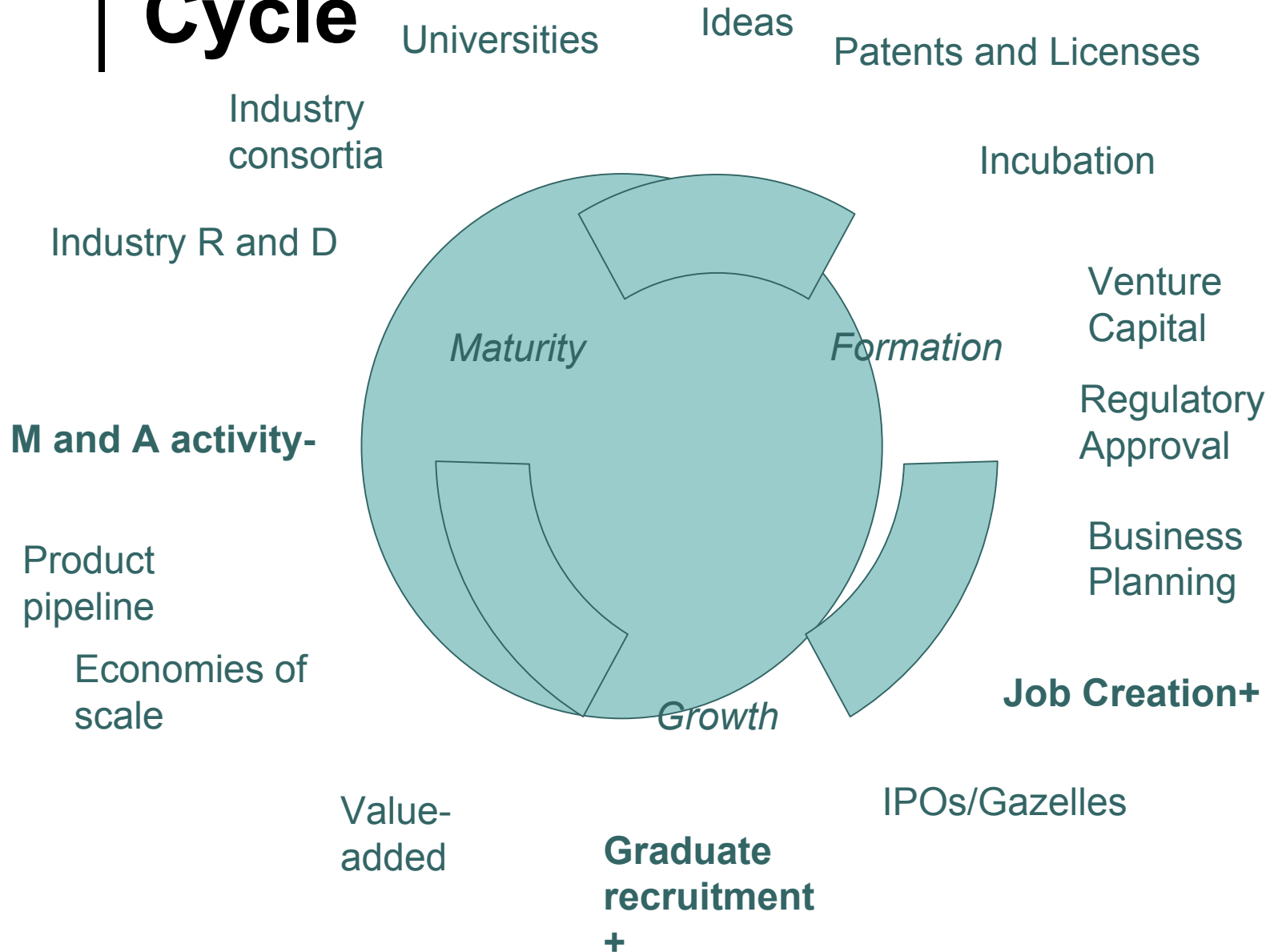
Toronto Area Employed Labour Force (1987 to 2003)
Natural and Applied Sciences and Related Occupations



Source: Labour Force Survey, Statistics Canada.



Jobs and the Innovation Life Cycle





The Growth of Small Firms Generates a Wide Variety of Jobs

- Core SME employment usually research, discovery and pre-clinical staff, some process/product development, a small quality control and assurance group and core finance administration and information systems
- With growth additional scientific and bioinformatic staff are added, additional financial/admin and quality control staff plus a group for clinical /regulatory affairs research
- The next phase of growth usually sees a full department for clinical trials and business development/marketing and sales
- Merger and takeover activity can however reduce employment, particularly in support roles

Source: Feena D. Hanes
New England Board of Higher Education
Cambridge Massachusetts



IT and Biotech Sectors

- When looking at Human Resources there are advantages to looking at Occupation rather than Industry, particularly when the occupation transcends several sectors



Biologists and Related Scientists-Industry Distribution Ontario

	Employment	% of Total Employment
Other federal services	765	18.4%
Scientific research and development services	585	14.0%
Hospitals	470	11.3%
Provincial public service	455	10.9%
Universities	395	9.5%
Management consulting	250	6.0%
Pharma and medical manufacturing	150	3.6%

Source: Census 2001



Chemists-Ontario

	Employment	% of Total Employment
Pharmaceutical and medicine manufacturing	1215	18.2%
Scientific research and development services	790	11.8%
Other federal services	625	9.4%
Universities	470	7.0%
Architectural engineering	350	5.2%
Pharmaceuticals toiletries	285	4.3%
Hospitals	235	3.5%

Source: Census 2001



Software Engineers-Ontario

	Employment	% of Total Employment
Computer Systems design	5200	34.6%
Scientific research and development services	1625	10.8%
Communications equip	1240	8.2%
Software publishers	1105	7.3%
Semiconductor equipment	815	5.4%
Computer wholesalers	795	5.3%
Telecommunications	715	4.8%
Instrumentation mfg	330	2.2%
Architectural engineering services	325	2.2%
Computer and peripheral manufacturing	325	2.2%

Source: Census 2001



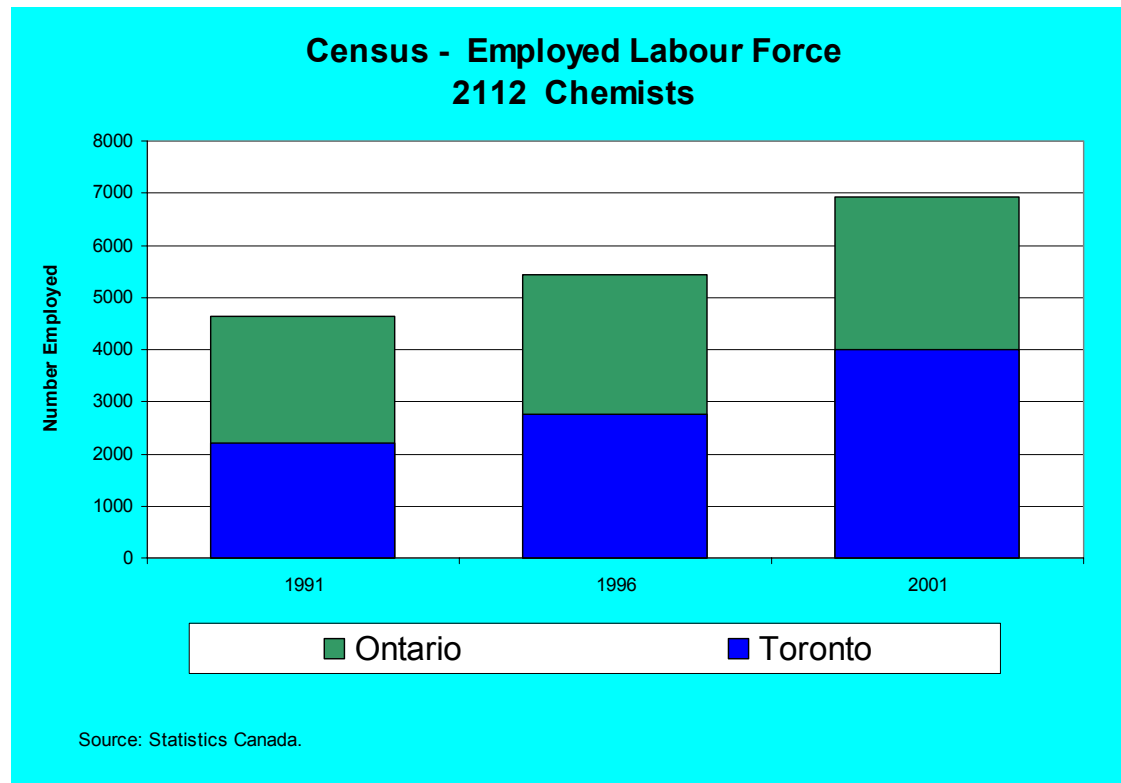
Information Systems Analysts Industry Distribution Ontario

	Employment	% of Total Employment
Computer systems design	19620	36.9%
Banks	3645	6.9%
Management consulting	2890	5.4%
Other federal services	2525	4.7%
Computer wholesalers	2125	4.1%
Insurance Carriers	1520	2.9%
Telecommunications	1455	2.7%
Provincial government	1075	2.0%
Software publishers	885	1.7%

Source: Census 2001

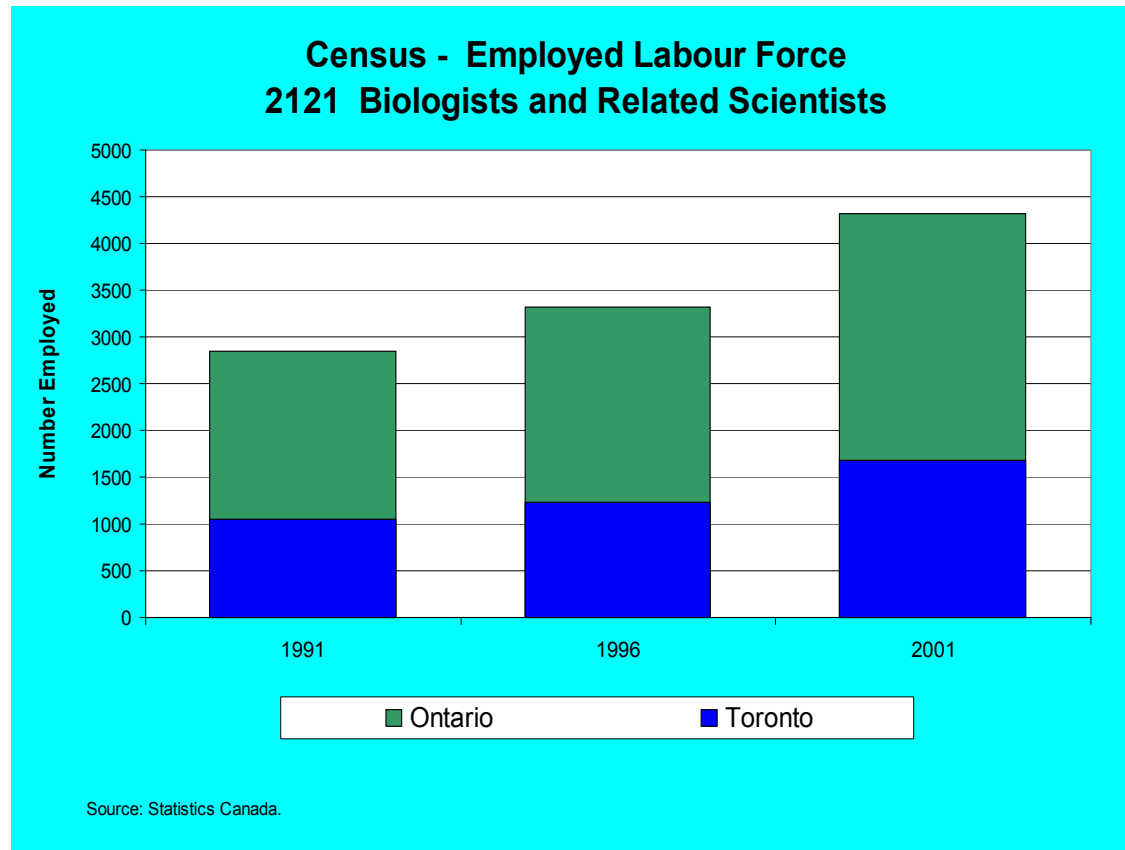


Trends in Census Data



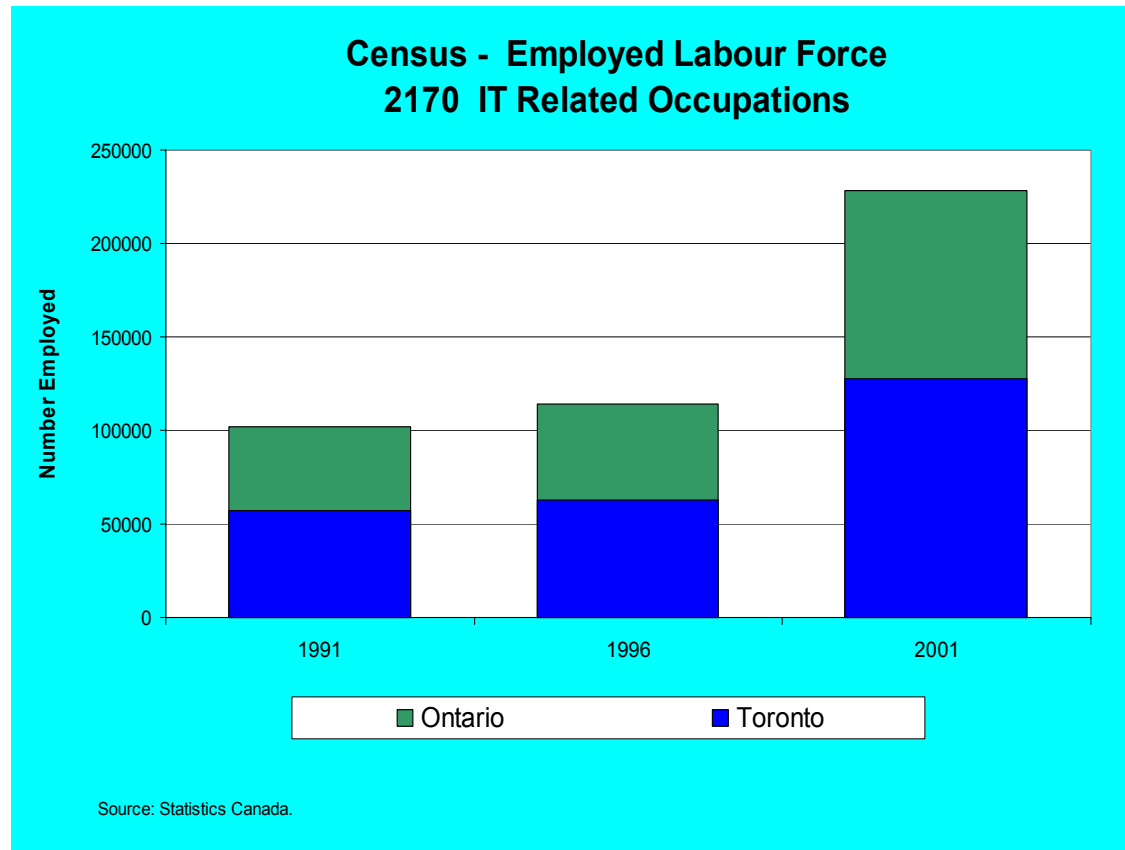


Trends in Census Data



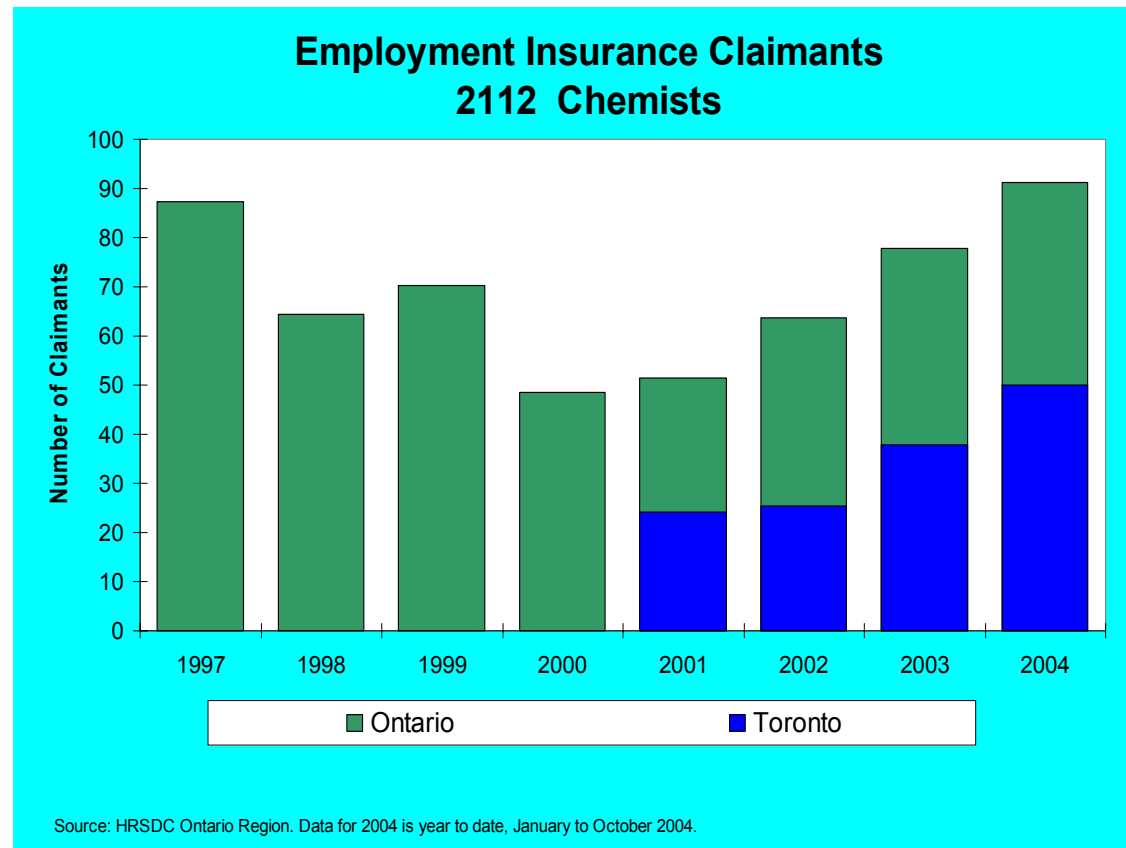


Trends in Census Data



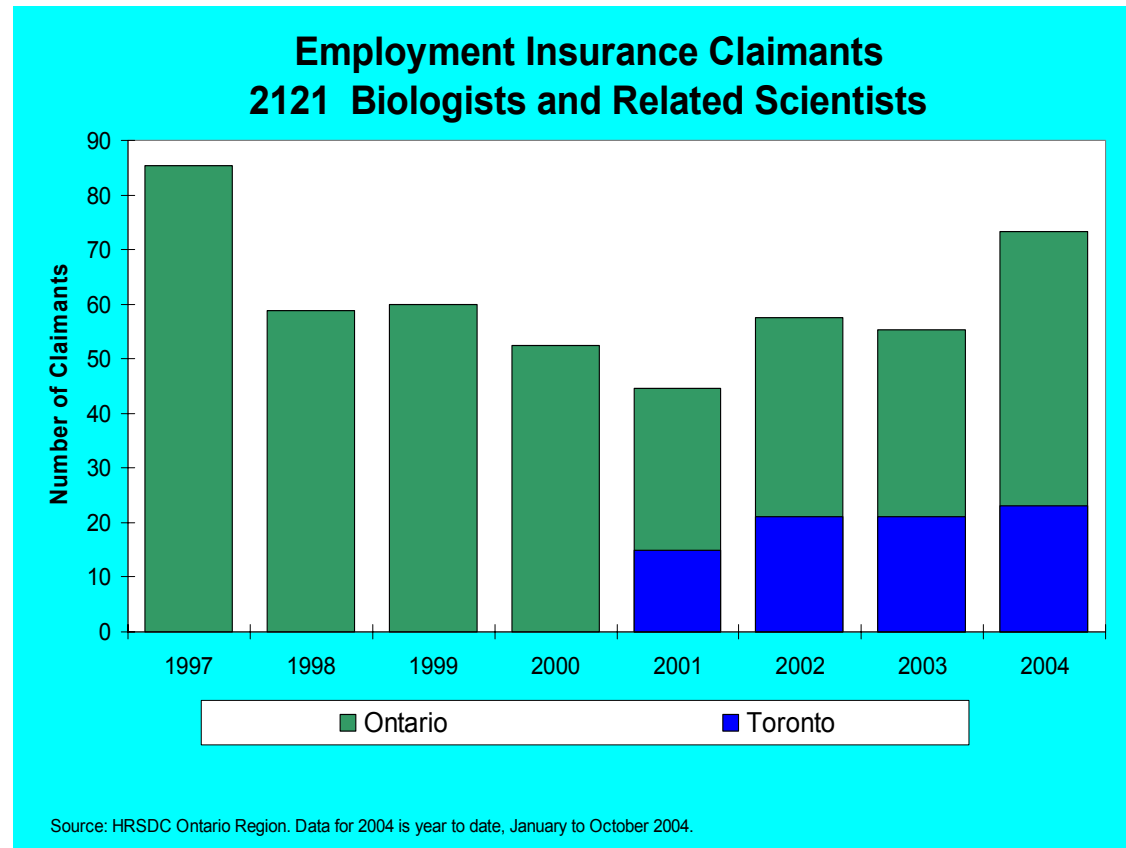


Trends in EI Data



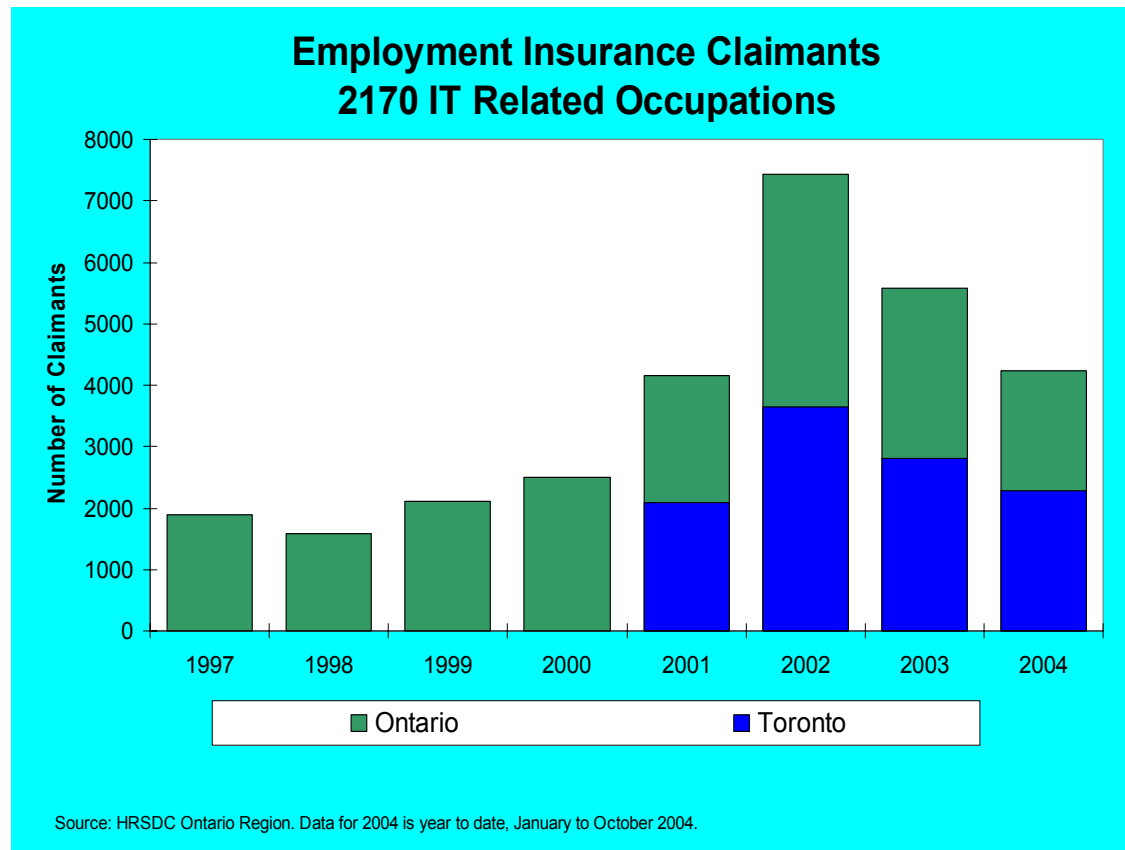


Trends in EI Data



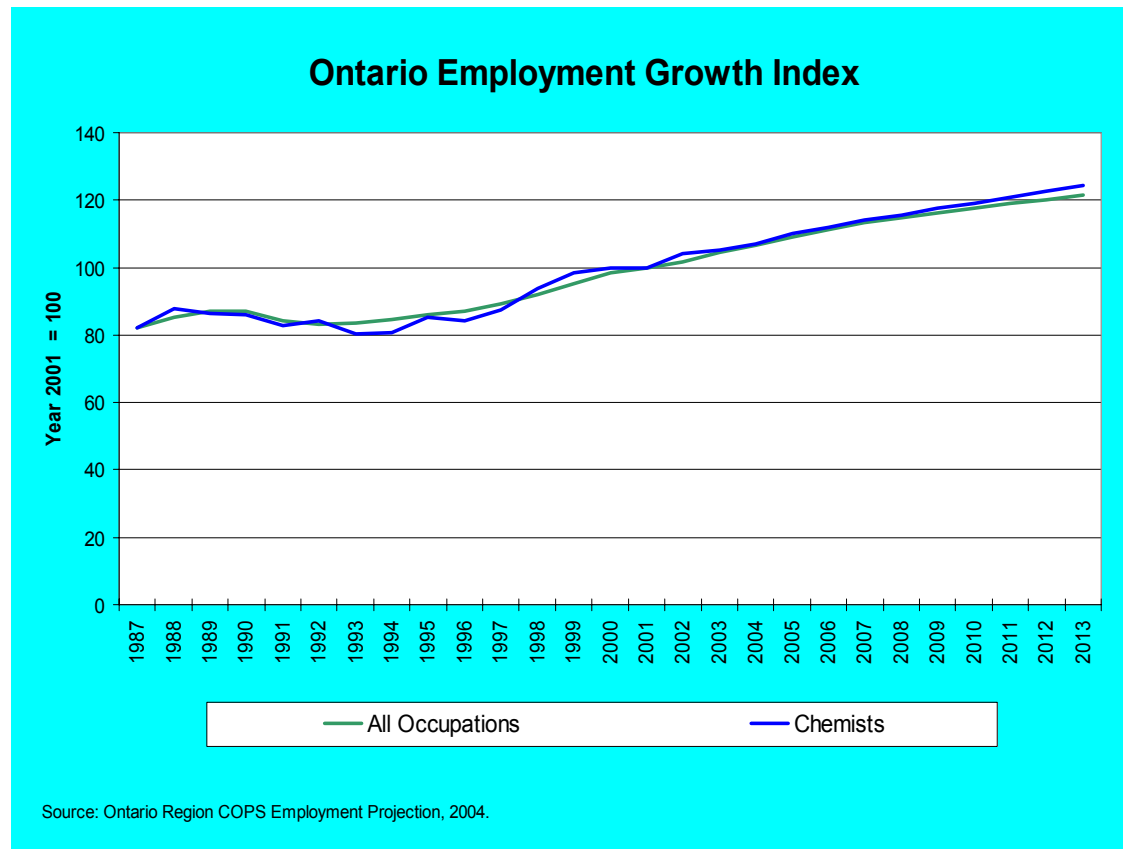


Trends in EI Data



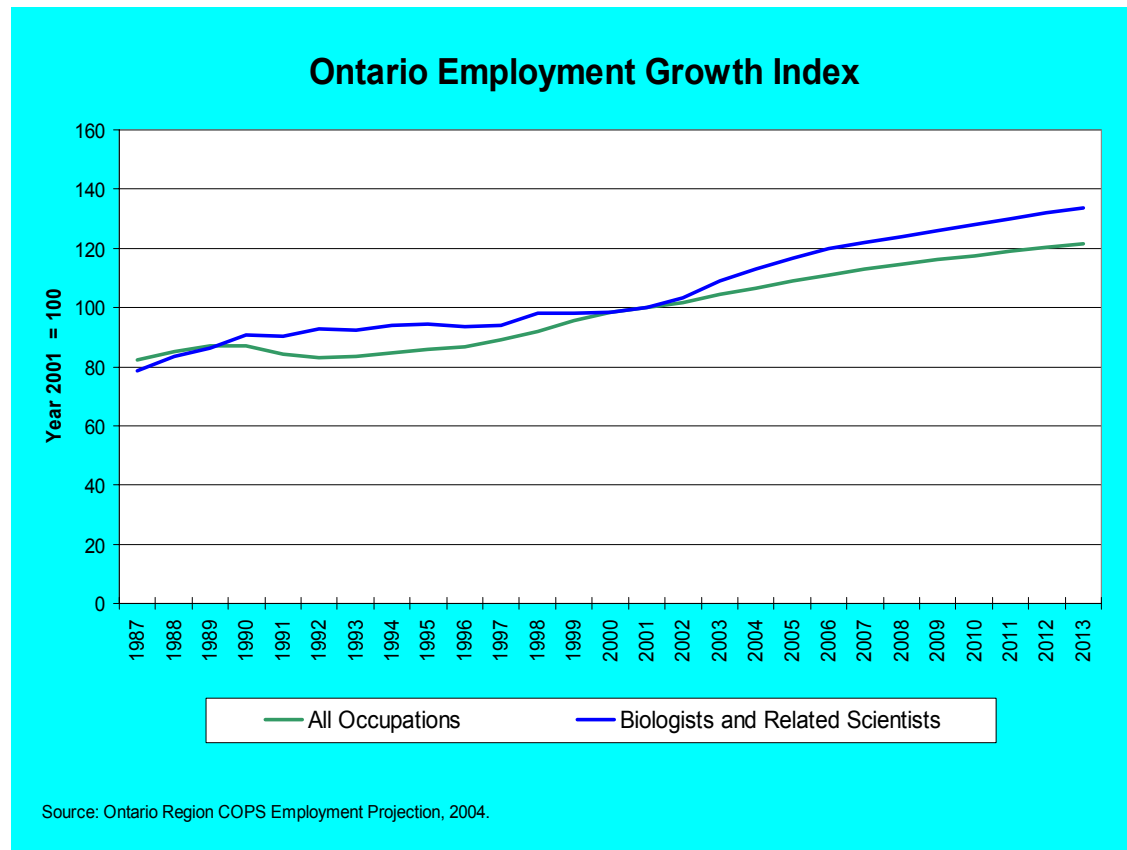


Ontario Growth Projection



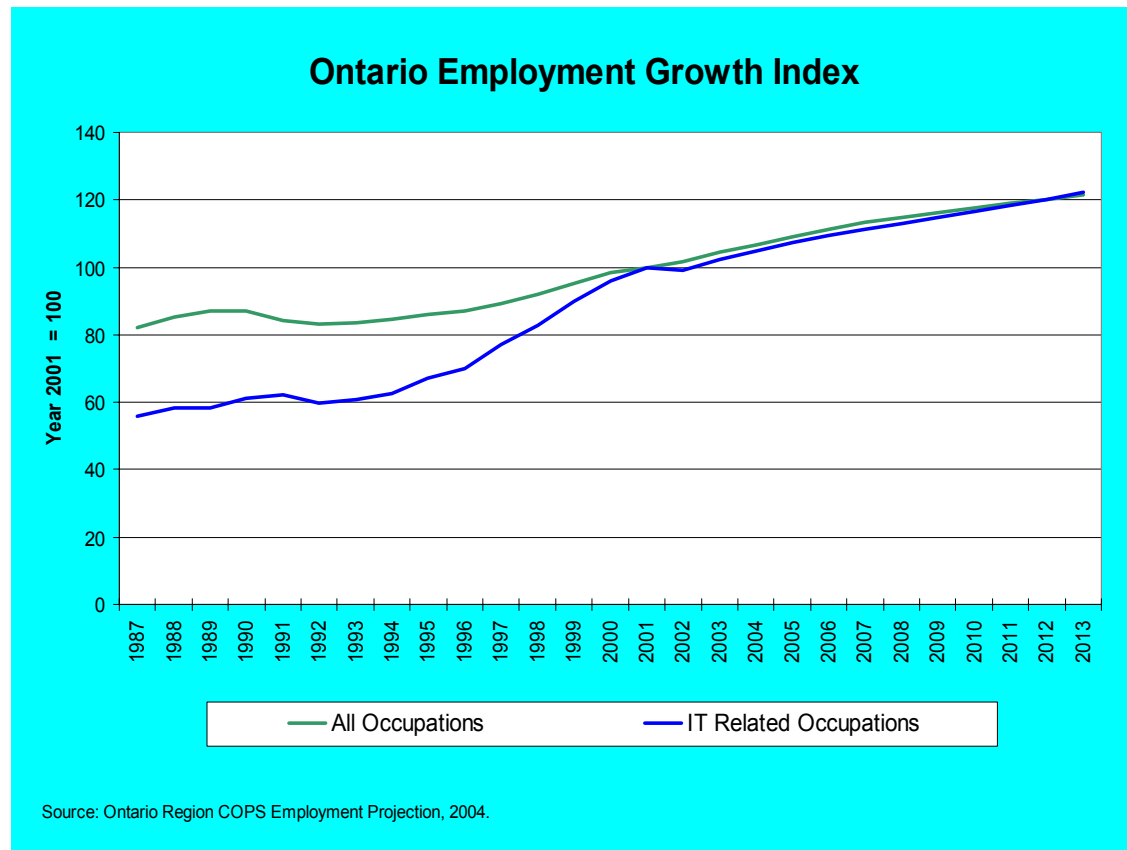


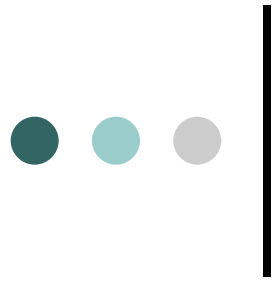
Ontario Growth Projection





Ontario Growth Projection





Ontario Job Futures Forecast Growth Rates

- High growth 2.5% or more
- Average growth 1% -2.4%
- Low growth 0.9% or less

- Biologists Average 2.2%
- Chemists Average 1.9%
- IT Occupations Average 1.6 to 1.8%



IT and Biotech

- Prolonged rapid growth increases the risk of supply deficits and shortages. This is particularly true for small and new occupations where supply is limited.
- Shocks and rapid adjustment cause can cause sudden surpluses particularly if there has been a large increase in supply capacity
- IT and Biotech are:
 - Have shared the designation 'emerging sectors' with small companies moving through their growth cycle in an environment of rapid technological change and innovation
 - Significant employers of highly qualified human resources with post-secondary and post-graduate qualifications



In Summary

- Employment growth in both biotech and IT occupations has been rapid since 1991 as small firms expanded
- Biologist and chemist unemployment levels as proxied by EI creeping upward since 2001 but the numbers remain very small
- EI claimant levels in IT occupations peaked in 2002 and have been declining gradually although now far above the late 1990s
- Chemists and biologists forecast to grow at or above average all occupations to 2009.
- IT occupations will also grow at more normal rates after relatively flat performance in 2003- 2004



For Future Consideration

- Need a commonly accepted industry definition so that discussions can occur based on common concepts around emerging industries
- Need to invest more in relevant, update classification systems that retain time series compatibility
- Need to invest more for useful subprovincial and detailed industry/occupational data- more sample, better estimation techniques



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Thank You

Economic Analysis and Information
Ontario Labour Market Information Service
Human Resources and Skills Development



Human Resources and
Skills Development Canada

Ressources humaines et
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