
Business Indicators ♦ February 2000

Update on High Technology Start-ups, 1994-1998

Highlights

- **Births of high tech firms doubled from 1994 to 1998.**
- **Computer and Related Services is the most prolific sector.**
- **Most high tech start-ups are small businesses creating eight jobs on average.**

Introduction

Business Indicators Report for January 2000 reported on a research project that tracked a group of high technology companies over the period 1991-1995. The project also accounted for new firms that were established over the period. One of the important conclusions of the study was that employment gains from expansions of existing firms were counteracted by losses due to firm failures. As a result, new firms were responsible for all the observed net job creation.

This edition narrows the focus, with a further look at high technology start-ups. Using a somewhat different data source, the information on births is extended from 1995 to 1998. The birth counts are supplemented by estimates of the size of firms at the time of birth, and the number of jobs created as a consequence.

Measuring Births

It is possible to form an idealized picture of what occurs to mark the "birth" of a firm in the high technology or any other sector. However, in practical terms, a birth is recorded when a business operation first appears on an administrative file such as a database of tax filers, payroll deduction re-

mitters, or a corporate registry. Such births depend on the unit of account (such as a company, a business "establishment", a business location, etc.) and on the administrative practices of those who maintain each particular file.

Under these conditions, a birth is seldom defined as a simple incorporation, and could commonly result from a name change, a merger, or the establishment of a subsidiary or branch by an established company.

The data source used for the birth counts reported here is the Business Register, maintained by Statistics Canada. The sources for the Business Register, in turn, are Revenue Canada tax forms, payroll deduction records, and information gleaned from Statistics Canada survey activities and profiling of corporate structures. The basic unit of account is the "establishment", which is normally the smallest unit of a firm capable of reporting independently on revenues, employment, and similar accounting quantities. Typically, establishments are business locations, but they can also include certain "synthetic" entities for statistical purposes.

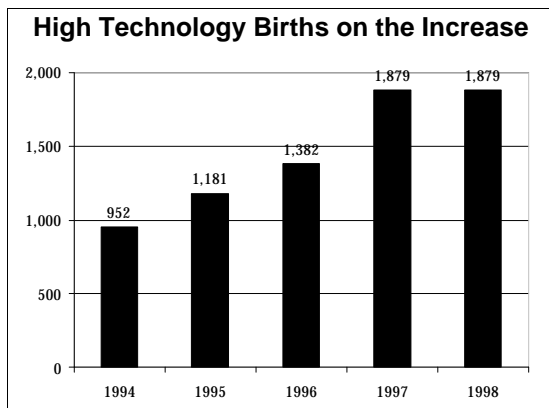
Employment of establishments is estimated from payroll figures, and is provided only in broad ranges.

While births on the Business Register file are not created without reason, it is generally acknowledged that births from this source are on the high side. On the other hand, only employer firms have been included, while it is known that substantial increases in em-

ployment are attributable to an increase in self-employment.¹

High Tech Births 1994-1998

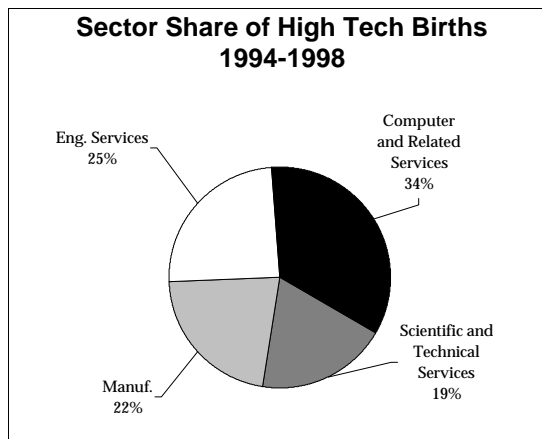
High tech births almost doubled in the five years from 1994 to 1998. This occurred at a time when the number of firms increased by under fifty per cent, distinguishing the increase in births as an independent phenomenon.



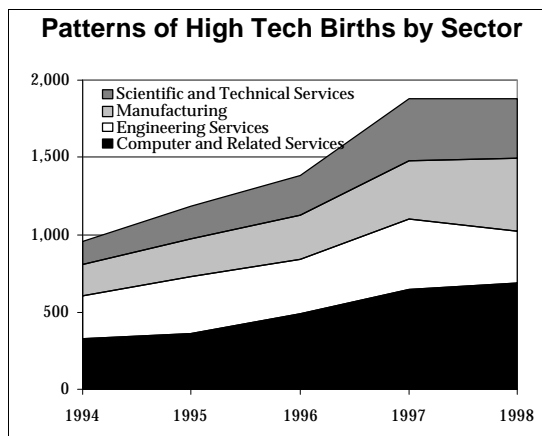
This can also be expressed as a change in the birth rate, which was 20.2% in 1994, rising to over 27% in 1998.

Computer Services Leads the Way

Computer and Related Services had the majority of births over the five years, followed by Engineering Services.



Computer Services not only accounted for the greatest share of the births that occurred over the five year period, but also continued to increase in 1998, when other sectors were stagnant or decreasing.



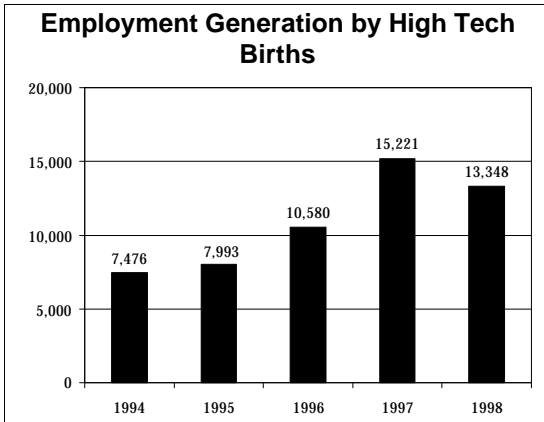
However, Scientific and Technical Services, despite a decrease in 1998, increased its share of births by almost five and one half points from 1994 to 1998.

¹ For example, see *Small Business Profile '99: A Profile of Small Business Growth and Employment in British Columbia* at:

http://www.bcstats.gov.bc.ca/DATA/BUS_STAT/sm_bus.htm

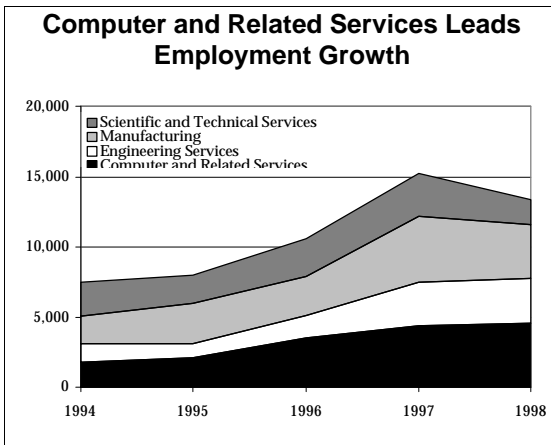
Employment

High tech births have accounted for a substantial and increasing number of new jobs, even without including the impact of increasing self-employment.



The employment represented in the above chart are a real phenomenon, but is tempered by significant losses stemming from deaths. While total employment in the high tech sector has shown strong growth over the period covered, it has clearly not been as rapid as the birth figures might imply.

Not only did Computer and Related Services lead high tech births, those births accounted for nearly 30% of all employment growth in the period. However, Computer and Related Services births were on average smaller in terms of employment.



Small Business Dominates

Although establishments can be started with any number of initial employees, it might be expected that most start small. This, in fact, is the case. Only about seven per cent of births initially have more than twenty employees. This situation has been constant over all of the years covered.

However, on average, the start-ups have not been micro-businesses (businesses with just one to five employees). Instead, the over seven thousand births observed in this study have averaged just over eight new employees each.

Conclusion

The powerful impact of new businesses on employment in the high tech sector is consistent with its image of dynamism. Although possibly exaggerated by the data source, the large number of births, particularly in Computer Services and Engineering Services indicates a relative freedom from barriers to entry. The challenge is to ensure the continued growth and survival of the new firms to secure the jobs that are created.