

Workers on the move: Permanent layoffs

Garnett Picot

In 1982, during the depth of the worst recession since the Second World War, the gross domestic product (GDP) fell by 3.2%, overall employment declined by 3.5% and unemployment rose to 11% for the year. And, during this year of poor economic performance, 1.2 million workers were laid off permanently - meaning they did not return to their firms. In 1988, Canada was near the peak of the business cycle and had yet to face the effects of the 1990-91 recession. GDP expanded by 4.7%, employment increased by 3.2% and the unemployment rate fell to 7.8% and kept on falling as economic expansion continued. And yet, during this year of economic growth, fully 1 million workers were laid off permanently. At 7.1%, the permanent layoff rate for 1988 was significant compared with the decade high of 8.7% observed in 1982.

Permanent layoffs on such a scale are a major characteristic of the Canadian economy, in good years and bad. (1) They are an indication of the considerable "churning" that occurs continuously in the labour market as jobs lost in some firms are counterbalanced by jobs gained in new or expanding firms. In a year like 1988, the employment gains in new or expanding firms - at 14% of total employment in that year - more than compensate for the employment losses in disappearing or declining firms (2) (at 11% of total employment). The result was a net employment gain of 3% in 1988 (see *Definitions*). This *net* gain, which is usually the focus of analyses of employment change, masks the considerable churning referred to earlier. In a year like 1982, there are fewer firms with expanding employment to offset the employment declines witnessed in many firms. The result that year was a net employment decline, (3) a 50% drop in hirings, and more unemployment associated with permanent layoffs. Nonetheless, permanent layoffs are high in both recessionary and non-recessionary years.

The purpose of this paper is to identify the characteristics of workers affected by permanent layoffs and the types of industries and firms in which they work. Therefore, layoffs are deemed permanent when workers do not return to their firms during the 12 months following the layoffs. The analysis is based on 1988 data from the Labour Market Activity Survey, supplemented by results from the Longitudinal Employment Analysis Program for 1988 and prior years (See *Appendix*). To emphasize the importance of permanent layoffs, even in the best years of the economic cycle, 1988 was chosen. The pattern of permanent layoffs observed is likely applicable to most years, except perhaps those in the depth of a

recession.

Permanent layoffs are highest in construction and forestry and mining

Permanent layoffs vary considerably from industry to industry. In construction, 1 in 5 persons experienced a permanent layoff in 1988, in forestry and mining 1 in 6, while in public utilities, the figure was only 1 in 75 ([Table 1](#)).



Table 1 Permanent layoffs by industry, 1988.

Source: *Labour Market Activity Survey*

One reason for this dramatic contrast is the difference in the amount of churning going on among firms in these industries. For example, in construction, employment loss in declining or disappearing firms amounted to 17.3% of employment in the industry that year; in public utilities, it was only 1.6%. But then employment declines don't necessarily result from permanent layoffs. They can be handled by retirement or voluntary quits (both known as attrition) as well as permanent layoffs. Thus, another reason for the difference in the permanent layoff rate is the way industries manage their workforce levels. In construction, where wages are relatively high and work is highly seasonal and cyclical, quit rates are low, resulting in employers downsizing through permanent layoffs rather than through attrition. In an industry such as real estate, quit rates are high, allowing much of the labour reallocation process to occur through attrition. As a result, the layoff rate in that industry was less than 4% in 1988, even though many firms had substantial employment declines. ⁽⁴⁾ In public utilities, quit rates are low and there is relatively little employment loss in firms due to a reallocation of market share among firms or for other reasons. Permanent layoffs are, therefore, infrequent.

During a recession, layoffs tend to increase more quickly in manufacturing than in other industries (Picot and Baldwin, [1990a](#) and [1990b](#)). However, during an expansionary year, workers in manufacturing appear to be less likely to lose their jobs than other workers: in 1988, the permanent layoff rate was 6.0%, well below the overall average.

Permanent layoffs are concentrated in small firms

Firm size is an important factor in determining the probability of layoffs. When layoffs are discussed in the media, the image presented is often one of major cutbacks in large firms leading to worker

displacement: a large manufacturer of farm equipment cuts back its workforce by letting hundreds of workers go, a major automobile manufacturer closes a number of plants displacing many workers, or one of the major airlines permanently lays off a significant proportion of its workforce to cut costs. Such stories lead to an image of significant job loss in large firms. Reality, however, does not conform to this image, at least not during the 1980s.

During most years, it is from small- and medium-size firms that most of the permanent layoffs emanate. In 1988, small firms (those with less than 20 employees) accounted for 20% of employment but for 41% of permanent layoffs. Firms with 500 or more employees had 40% of employment, and only 17% of permanent layoffs ([Table 2](#)). About 1 in 8 persons in small firms were laid off permanently in 1988, compared with only 1 in 29 in large firms. This is a tremendous difference that holds significant implications: for workers who may consider working in small firms, for the firms that would like to understand why there are such dramatic differences in layoff rates, and for economists wishing to better understand the labour reallocation process.



Table 2 Permanent layoffs by firm size and wage rate, 1988.

Source: *Labour Market Activity Survey*

A number of explanations are possible. The first relates to the industrial distribution of large and small firms. If small firms were concentrated in industries with volatile employment patterns and high layoff rates, then naturally one would observe higher rates among small firms. This would primarily be a characteristic of the industry rather than of the size of the firm. But the firm size differential in layoff rates is observed in all major industries ([Chart A](#)). This is confirmed in the multivariate analysis reported in Table 3.



Chart A In 1988, the permanent layoff rate was significantly higher in small firms than in large firms.*

Source: *Labour Market Activity Survey*

* *Small firms: 1-19 employees, large firms: 500 or more.*



Table 3 **Relative probability of permanent layoff in 1988, as calculated from the logistic regression model.**

Source: Labour Market Activity Survey

Note: The relative probability is simply the probability in a level compared with a reference level. The probability of permanent layoff for any particular variable (for example, different levels of age) is calculated at the mean value for all other variables. When another variable is discrete (such as education, which has five discrete levels), the weighted average is used, where the weight is the proportion of all workers in each level of the variable.

The second possible explanation involves differences in the characteristics of workers employed in small and large firms. Workers in large firms have, on average, a higher level of education, are members of a union and are older than their counterparts in small firms ([Morissette](#), 1991). All of these characteristics are associated with lower permanent layoff rates. If one controls for these and similar characteristics using regression analysis, then the rate differential decreases but does not disappear: the likelihood of being laid off in a small firm as opposed to a large firm falls from 3.5:1 to 2:1 (Tables [2](#) and [3](#)).

A third possible explanation relates to the stability of small and large firms. The small firm sector is highly volatile: companies are much more likely to disappear and be replaced by others, obviously affecting layoffs. In 1988, among small firms employment fell 5.3% due to the disappearance of companies and an additional 11.6% due to workforce downsizing in declining (but continuing) firms. Thus, 16.9% of total employment in small firms was lost in declining or disappearing firms ([Table 4](#)). Among large firms the comparable figures were 0.9% (since few large companies disappear) and 4.7%. Therefore, only 5.6% of total large firm employment was lost in declining or disappearing companies. With a rate of employment loss three times higher than that of large firms, it is not surprising that small firms have four times the permanent layoff rate.



Table 4 **Rate of employment loss and gain by size of firm, 1988.**

Source: Longitudinal employment Analysis Program

It should be noted that employment creation is also higher in small firms, leading to a disproportionate amount of hirings as well as permanent layoffs. This activity produces less stable employment patterns and shorter job tenure. In 1986, job tenure was on average approximately two and one-half times longer in large firms compared with small firms ([Morissette](#), 1991).

The difference between the layoff rate in small and large firms persists over the course of the business cycle. During the 1980s, the likelihood of being permanently laid off from a large firm, even during a

severe recession like that of 1981-82, does not approach the probability of being laid off from a small firm during the best of economic times ⁽⁵⁾ ([Chart B](#)). Whether this pattern persisted during the 1990-91 recession remains to be seen. These results support the idea that for a particular worker overall economic conditions are not the most important factor in the permanent layoff process: other factors such as the reallocation of market share among firms in a given industry or sector, the impact of structural change occurring in the economy and changes in productivity levels appear to be more significant. In particular, the reallocation of jobs among firms *within* an industry is found to be important. These factors lead to high levels of employment loss in a number of firms and large employment gains in others ([Davis and Haltiwanger](#), 1991; [Baldwin and Gorecki](#), 1990).



Chart B The permanent layoff rate in small firms was higher throughout the business cycle of the 1980s.*

Source: *Longitudinal Worker File*

* *Small firms: 1-19 employees, large firms: 500 or more.*

Low-wage workers have higher layoff rates

When a firm faces a downturn, it is the low-wage workers who experience the highest permanent layoff rates. High-wage jobs are generally filled by persons with higher education and skill levels and, perhaps, with more firm-specific training and knowledge. Firms want to keep turnover in these jobs low, since hiring and training costs are higher. Hence, permanent layoff rates among these jobs are lower: in 1988, they varied from around 10% in jobs paying from \$5.00 to \$6.99 an hour to about 4% in jobs paying \$20.00 or more, a difference of a factor of about 2.5:1 ([Table 2](#)).

Of course, high-wage jobs are associated with other characteristics that may explain the difference. They are more likely to be found in large firms and among older workers, both of which are associated with lower permanent layoff rates. After controlling for these and other characteristics, the difference in the layoff rates between high- and low-wage jobs declines to a factor of less than 2:1 ([Table 3](#)). While the layoff rate is higher among low-wage jobs, this is to some extent a reflection of other characteristics associated with the jobs, such as firm size and the age, education and tenure of the incumbent.

The layoff rate is higher among younger workers

The layoff rate among 16 to 24 year-olds (10%) is about twice that of persons 25 and over. Although only 17% of employment was accounted for by the younger age group, they registered 41% of all permanent

layoffs in 1988. This is likely related to the formal and informal seniority provisions in many firms, and to the lower levels of investment made by firms - in terms of training and firm-specific knowledge - in younger workers.



Table 5 Permanent layoffs by age, 1988.

Source: *Labour Market Activity Survey*

Conclusion

In 1988, during a period of economic expansion, approximately 1 million workers were laid off permanently. This layoff activity is associated with the dynamic economic pressures continuously faced by many firms. Layoffs stem from the decline or failure of firms and the associated reallocation of market share to new or expanding firms, from structural shifts in product demand or from productivity gains and losses in some firms. Cyclical decline obviously played no role during 1988 and other research suggests that downturns in entire industries for structural (long-term) reasons, while important, may not be the dominant factor in this layoff process. [\(6\)](#)

The resulting permanent layoffs were highly concentrated among particular groups in the economy. The forestry and mining, and construction industries experienced the highest permanent layoff rates. Concentration in small firms was quite pronounced, as they accounted for 41% of layoffs but only 20% of employment. Large firms played a relatively minor role in the permanent layoff process, accounting for only 17% of layoffs. As well, a disproportionately large share of permanent layoffs was found among younger workers.

How much unemployment is associated with these layoffs is another question. This is likely to vary significantly among age groups; for example, older workers have more difficulty locating new jobs. It is also likely to vary over the course of the business cycle, as both the frequency and duration of unemployment following a permanent layoff is likely to be higher during a recession.

Definitions

Employment loss and gain

Employment loss is simply the change in employment in a company between two years, summed across all companies that experienced declining employment or that disappeared in the second year. The rate of employment loss is the employment loss divided by the total employment in the base year (in the economy, the industry, or other groups of interest). Employment gain is the change in employment between two years in all companies that experienced rising employment, or in companies that appeared in the second year. The rate of employment gain is the gain divided by the total employment in the base year.

Permanent layoffs

A permanent layoff occurs when a worker is laid off from a company and does not return within 12 months. The permanent layoff rate for a company is the total number of permanent layoffs in the year (1988) divided by the number of persons employed in the company at any time during the year (a cumulative employment count over the year), that is, the number of persons at risk of layoff during the year. This can be interpreted as the proportion of workers in the firm during the year who are permanently laid off. The permanent layoff rate for, say, an industry is simply the total number of permanent layoffs in the industry divided by the cumulative employment count in all companies in the industry. This represents an average layoff rate for all companies in the industry. Persons can be doubled-counted in the cumulative employment count, since an individual can work for more than one firm in a year.

Distributive, business, consumer and public services

The distributive services sector includes transportation and storage; communication and other utilities; and wholesale trade. Business services includes finance and insurance; real estate operators and insurance agents; and business services. Consumer services includes accommodation, food and beverage services; retail trade; and other services. Public services includes education, health and social services; religious organizations; federal, provincial and local administration; and other government services.

The logistic regression

The probability of permanent layoff in 1988 is calculated using logistic regression, where the independent variables are those listed in Table 3 plus union membership, region, part-time/full-time status and unemployment rate. The dependent variable is an indicator of a permanent layoff, which equals 1 if a permanent layoff is observed in a job in 1988, 0 otherwise. The sample includes all jobs observed in 1988, with or without a layoff. (An alternative approach is to estimate the probability of permanent layoff conditional on the time spent in the job using proportional hazard models. This will be done in future work.) In this logistic regression, the probability of permanent layoff for any particular variable (for example, different levels of age) is calculated at the mean value for all other variables. When a variable is discrete (such as education, which has five discrete levels), the weighted average is used, where the weights are the proportion of all workers in each level of the variable.

Appendix

Data sources on hirings and separations There are three data sources used in the articles dealing with labour turnover in this issue of Perspectives: the Labour Market Activity Survey, the Longitudinal Worker File and the Longitudinal Employment Analysis Program.

The Labour Market Activity Survey (LMAS)

This is an annual longitudinal survey of 40,000 households which was conducted in two panels: the first, covering 1986 and 1987 and the second, 1988 to 1990. This survey collects information on all jobs held by respondents during the reference year, including information on start and end dates, industry, occupation, absences, promotions, job search, wages and reasons for absences and job terminations. The survey was discontinued following the 1990 reference year and will be replaced for the 1993 reference year by the Survey of Labour and Income Dynamics (SLID), a continuing longitudinal survey with an observation period of six years (according to current plans). This survey will cover the content of the previous survey and will include an income component and additional demographic information.

With the exception of the breakdown of jobs into permanent and temporary categories, which are derived from the 1986 survey, the estimates of hirings and separations for this article are from the 1988 survey. Currently, tabulations of hirings and separations are available only for the 1988 survey. Because of the complexities of the questionnaire and the data file, users attempting to reproduce the estimates appearing in the article from the public use microdata file may experience difficulty doing so. A Statistical Analysis System (RAS) algorithm which identifies hirings and separations and classifies the latter according to permanent/temporary and quits/layoffs/other is available on request.

This is undoubtedly the richest source of data on hirings and separations, because of the wealth of additional variables available. In addition to the data on wages mentioned above, which no other source can provide, it includes information on unionization, firm size, hours of work and Unemployment Insurance reciprocity.

A temporary separation (LMAS definition) is one in which the employee returns to the former employer within one year following the separation. Thus, a seasonal layoff that is followed by a return to a former employer after the end of the off-season is considered a temporary separation. To maintain conceptual consistency, such returns to former employers are not considered hirings. The assumption here is that a return to a former employer after a short absence (less than a year) implies a tie between the employee and the employer, although in practice there may not have been any guarantee of re-employment.

Because recurring employment with the same employer has been interpreted as reflecting a continuing job, a job is considered to be temporary (1986 LMAS) only if the job has been terminated, that is, the employee does not subsequently go back to it, or it is a student summer job, or a job identified by the respondent as seasonal or temporary upon termination and having lasted less than one year.

This means that a seasonal job is not considered a temporary job if the employee returns to it in the following year. This is not entirely satisfying because one would normally consider seasonal jobs as "temporary," regardless of any return. However, the pattern of recurring employment with the same employer is apparently such a common one in Canada that it does not seem entirely appropriate to consider each seasonal return a new hiring. Subsequent analysis may need to examine the relationship between the length of the employment spell and the nature of the employer/employee link. (For special requests, contact Richard Veevers at (613) 951-4617.)

Longitudinal Worker File

(Combines Record of Employment and Revenue Canada-Taxation data)

By law, a Record of Employment form must be issued by an employer to every employee working in insurable employment who has an interruption in earnings. Generally, most people working under a contract of service - that is, in an employer-employee relationship - work in insurable employment. Excluded from insurable employment are employees who are aged 65 or over those who are dependents or the spouse of the employer those who earn less than the minimum weekly insurable earnings (1113 in 1988) or who are employed less than 15 hours per week. The information on the Record of Employment form is used to decide if a person qualifies for Unemployment Insurance benefits, what the eligible rate should be and for how long the person may be eligible for benefits. The Record of Employment indicates, among other things, the first day of employment, the last day of employment, the reason for the interruption or separation and the insurable earnings.

The administrative file of Records of Employment can thus be used to generate counts of separations by reason. In addition, Revenue Canada files provide information on all jobs held during the year. From these and a longitudinal file on businesses, the Longitudinal Worker File has been created which includes information on the number and type of separations in a year, annual income, personal characteristics such as age and sex, and certain characteristics of the firm in which the worker is employed, such as size and industry.

The temporary/permanent nature of a separation can be determined on this file by observing whether an employee returns to the same employer by the end of the year following the separation.

Longitudinal Employment Analysis Program (LEAP)

The third data source is a longitudinal file of companies (legal entities) referred to as LEAP. This data source maintained by the Business and Labour Market Analysis Group of Statistics Canada, employs

Revenue Canada and Business Register data. It is a microdata file of all firms in Canada with an associated estimate of employment in the firm. It covers the 1978-88 period and has been used to study change in employment at the company level. Estimates of employment loss and gain at the company level are derived from this data source. For further detail see *Developing a longitudinal database on businesses in the Canadian economy*, (Catalogue 18-501).

Notes

Note 1

Permanent layoffs are part of the high volume of labour turnover observed in virtually all years, as one in five workers leaves a firm due to a quit, layoff or other reason. While the 20% overall permanent separation rate varies little over the business cycle, what does change is the mix of quits and permanent layoffs. Quits and hirings fall in a recession and permanent layoffs increase some, but not dramatically (Picot and Baldwin, [1990a](#) and [1990b](#)).

Note 2

Declining firms are those with an employment decline between two years. These firms are not necessarily "in decline," as productivity gains may have taken place.

Note 3

Between 1981 and 1982, the employment losses in disappearing or declining firms amounted to 11% of total employment in 1981, the employment gains in new or expanding firms 8%, for a net employment change of approximately -3%.

Note 4

Employment loss in declining or disappearing firms accounted for 15% of total employment in the real estate industry.

Note 5

Of course, from an unemployment perspective a layoff in a recession is much more significant because of the very low hiring rate.

Note 6

Recent work in both Canada and the United States suggests that overall trends in employment for the economy as a whole and structural change among industries (which causes one industry to expand while another is in decline) account for only a limited amount of the job loss observed in recent years. The bulk of the loss is explained by events taking place at the level of the firm. [Davis and Haltiwanger](#) (1991)

found that in the United States variation in job loss in manufacturing industries was associated with the reallocation of jobs among firms *within* an industry, not with an industry or economy-wide downturn. [Baldwin and Gorecki](#) (1990), studying job loss and gain in the Canadian manufacturing sector, also concluded that most of the reallocation of jobs was related to intra-industry shifts among firms. This suggests, as well, that economic forces such as intra-industry competition affecting firms within an industry may be responsible for most permanent layoffs.

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Source

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001E). This is the second of five articles in the issue.

 HIGHLIGHTS

 TABLE OF CONTENTS

 SUBJECT INDEX

 AUTHOR INDEX

 FRANÇAIS

 HELP

 HOME



Table 1

Permanent layoffs by industry, 1988

	Permanent layoff rate	Distribution of permanent layoffs	Distribution of total employment*
All industries	7.1	100.0	100.0
Forestry and mining	15.5	5.4	2.7
Construction	21.5	18.2	5.3
Manufacturing	6.0	15.1	21.2
Transportation and storage	5.7	2.9	4.3
Communication	2.2	0.7	2.8
Other utilities	1.4	0.2	1.5
Wholesale trade	5.8	3.7	4.8
Finance	1.4	0.5	3.2
Insurance	4.6	0.8	1.4
Real estate operators and insurance agents	3.8	0.8	1.6
Business services	6.2	4.3	4.7
Retail trade	7.4	14.6	11.6
Consumer services**	8.9	17.4	9.4
Health and social services	2.8	3.4	8.6
Education	3.9	4.3	8.4
Government services	7.1	7.6	8.4

Source: Labour Market Activity Survey

** Employment is measured by the number of hours worked.*

*** Includes accommodation, food, beverage and other service industries.*

Table 2

Permanent layoffs by firm size and wage rate, 1988

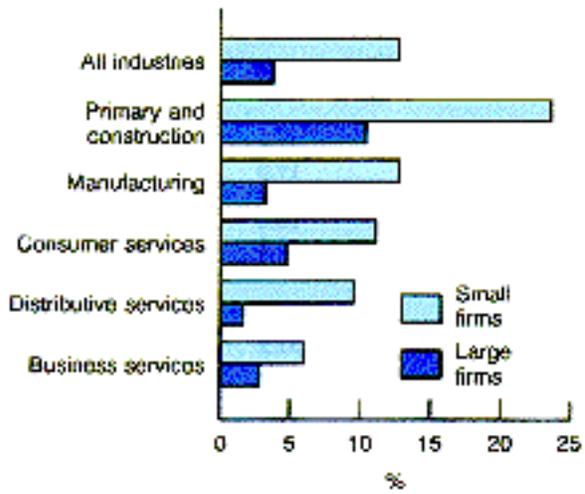
	Permanent layoff rate	Distribution of permanent layoffs	Distribution of employment*
		%	
Total	7.1	100.0	100.0
Firm size			
1-19 employees	12.0	41.4	19.9
20-99 employees	7.6	17.0	15.6
100-499 employees	5.7	9.7	13.0
500 employees or more	3.4	16.6	40.0
Size unknown	8.4	15.2	11.6
Hourly wage rate			
Less than \$5.00	11.5	20.0	6.4
\$ 5.00 - \$ 6.99	9.5	21.2	10.9
\$ 7.00 - \$ 8.99	8.6	17.0	12.5
\$ 9.00 - \$11.99	6.0	17.3	22.2
\$12.00 - \$15.99	5.2	12.7	21.3
\$16.00 - \$19.99	4.5	6.9	14.6
\$20.00 or more	3.7	4.9	12.2

Source: Labour Market Activity Survey

** Employment is measured by the number of hours worked.*

Chart A

In 1988, the permanent layoff rate was significantly higher in small firms than in large firms.*



Source: Labour Market Activity Survey
* Small firms: 1-19 employees, large firms: 500 or more.

Table 3

Relative probability of permanent layoff in 1988, as calculated from the logistic regression model

Category	Relative probability
Age	
(probability of permanent layoff compared with that for 16 to 24 year-olds, controlling for the effects of the other variables listed)	
16-24 years	1.0
25-34 years	0.8
35-44 years	0.7
45-54 years	0.7
55-64 years	0.8
Education	
(relative to university degree)	
Elementary school only	1.2
Some high school	1.1*
Completed high school only or some postsecondary	0.9*
Certificate or diploma	1.0*
University degree	1.0
Industry	
(relative to business services)	
Forestry and mining	2.3
Construction	2.6
Manufacturing	1.0*
Distributive services**	0.9*
Business services**	1.0
Consumer services**	1.2
Public services**	1.2
Firm size	
(relative to 500 or more employees)	
1-19 employees	2.1
20-99 employees	1.6
100-499 employees	1.4
500 or more employees	1.0
Size unknown	1.7

Hourly wage rate

(relative to \$25 per hour)

\$5	1.7
\$10	1.5
\$15	1.3
\$20	1.1
\$25	1.0

Occupation

(relative to managerial and professional)

Managerial and professional	1.0
Natural and social sciences	1.1*
Clerical	1.6
Sales	1.3
Services	1.3
Primary, processing and fabricating	2.4
Construction	2.7
Other	1.7

Source: Labour Market Activity Survey

Note: The relative probability is simply the probability in a level compared with a reference level. The probability of permanent layoff for any particular variable (for example, different levels of age) is calculated at the mean value for all other variables. When another variable is discrete (such as education, which has five discrete levels), the weighted average is used, where the weight is the proportion of all workers in each level of the variable.

** Not significantly different from 1.0 at the 5% level.*

*** See Definitions.*

Table 4

Rate of employment loss and gain by size of firm, 1988

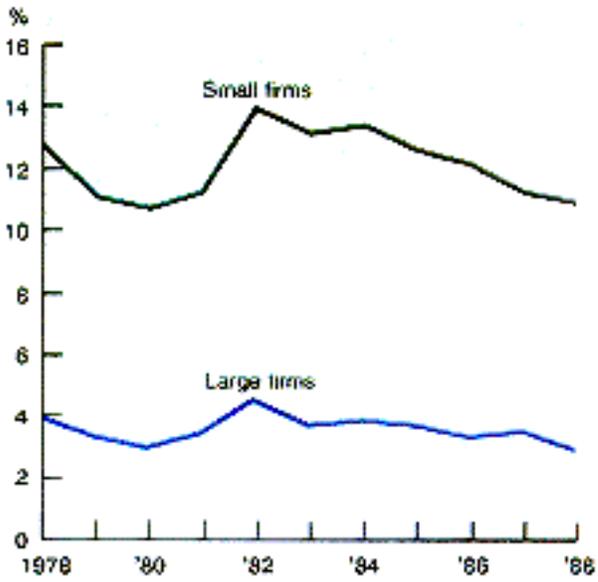
	Total employment loss rate	Rate of employment loss due to:		Total employment gain rate	Rate of employment gain due to:	
		Disappearance of companies	Companies with declining employment		Appearance of companies	Companies with expanding employment
Total*	10.8	2.8	8.0	13.9	2.8	11.1
1-19 employees	16.9	5.3	11.6	26.5	6.5	20.0
20-99 employees	12.5	3.0	9.5	16.6	3.6	13.1
100-499 employees	11.8	3.1	8.8	12.6	2.3	10.3
500 or more employees	5.6	0.9	4.7	5.3	0.3	5.0

Source: Longitudinal Employment Analysis Program

** Private commercial sector only for 1988-89. Excludes health, education and government services.*

Chart B

The permanent layoff rate in small firms was higher throughout the business cycle of the 1980s.*



Source: Longitudinal Worker File

* Small firms: 1-19 employees, large firms: 500 or more.

Table 5

Permanent layoffs by age, 1988

	Permanent layoff rate	Distribution of permanent layoffs	Distribution of total employment*
		%	
Total	7.1	100.0	100.0
16-24 years	10.2	40.9	17.3
25-34 years	6.4	27.6	32.4
35-44 years	5.3	16.3	26.0
45-54 years	5.4	9.6	16.2
55-64 years	6.1	5.6	8.1

Source: Labour Market Activity Survey

** Employment is measured by the number of hours worked.*