Turnover in the Labor Market: A Study of Quit and Layoff Rates

By James F. Ragan, Jr.

The labor market is in a constant state of flux. Workers flow into and out of the labor force, as well as moving from one job to another. Nearly one-half of all workers have been employed on their current job for only three years or less, and almost 30 per cent have held their job for no more than one year.[1]

Understanding turnover in the labor market is important for understanding how the U.S. economy operates.[2] Turnover helps allocate workers to those sectors of the economy where they are most productive. Employers in expanding industries are able to add to their payrolls while companies experiencing declines in demand reduce hiring and lay off workers. From an individual's perspective, turnover may enable a worker to improve his economic situation by quitting his current job when a more attractive position becomes available. Of course, not all turnover is optimal. Some groups of workers experience high quit rates without advancing to more attractive jobs. But even here, understanding the different turnover experience of various groups helps isolate important labor market problems, so that they may be intelligently addressed.

Some writers have questioned whether the volume of turnover has changed over time. Apart from whether such changes improve or detract from the operation of the economy, identifying trends in turnover is necessary in order to know whether a given turnover rate means the same thing today as in the past. The issue of interpreting turnover statistics is important because these statistics may influence economic policy, either directly or indirectly. For example, unfavorable layoff experience in certain industries has led to calls for restricting

[1] As of January 1978, 28.2 per cent of all workers had been employed on their current job 12 months or less, and another 19.4 per cent had been employed for one to three years. See U.S. Bureau of Labor Statistics, *Job Tenure Declines as Work Force Changes,* Special Labor Force Report 235 (1980), Table 1.

[2] The U.S. Department of Labor publishes six series on turnover, three measuring flows into employment and three measuring outflows. Additions to employment are classified as new hires, rehires, or other accessions, which captures transfers from one establishment of a company to another. Terminations of employment are characterized as quits, layoffs, or other separations. This last category is a catch-all which includes transfers between establishments of the same company and terminations due to permanent disability, entrance into the Armed Forces, discharge, retirement, or death. More detailed information on these turnover series can be obtained from U.S. Bureau of Labor Statistics, *Handbook of Methods,* Bulletin 1910, Washington: Government Printing Office, 1976.

James F. Ragan, Jr., is an associate professor of economics at Kansas State University. He spent part of 1980 as a visiting scholar at the Federal Reserve Bank of Kansas City. Stephen H. Pollock, research associate at the Bank, assisted with preparation of this article.

imports, relaxing government regulations, expanding unemployment insurance programs, and pursuing more stimulative monetary and fiscal policies. Furthermore, to the extent layoffs and other components of turnover alter the aggregate unemployment rate, they may indirectly influence policy.

Quit and layoff rates both move in a regular fashion over the business cycle. Movements in these series therefore generate information about the current state of the labor market. In addition, quit and layoff rates are generally considered to be "leading indicators," providing clues to the future direction of economic activity. For this reason, they are watched closely by businessmen, policymakers, and other economic analysts.

This study attempts to explain and interpret movements in quits and layoffs. The focus is on the manufacturing sector, because statistics on quits and layoffs in nonmanufacturing industries are quite sparse. After providing a background on turnover patterns, the article investigates the behavior of quit and layoff rates in manufacturing over the past 30 years. Separate statistical models are developed for each series. The article's final section illustrates the relationship between turnover and unemployment. All unemployment can be attributed to one of three sources: losing one's job, leaving one's job, or searching for a job upon entering the labor market. As layoffs and quits fluctuate, so does the source of unemployment. Furthermore, differences in the turnover patterns of various groups help provide insights into the causes of high unemployment.

QUIT AND LAYOFF STATISTICS

Quit and layoff rates have fluctuated widely, both over time and across industries. The quit rate refers to the number of quits per 100 employees, and the layoff rate to the number of layoffs per 100 employees. Monthly rates are averaged to yield quarterly and annual observations. Between 1950:I and 1980:IV, the quit rate in total manufacturing averaged 2.0, while the layoff rate averaged 1.6. The quarterly range for each series was 0.9-3.3.[3]

These numbers are averages for the entire manufacturing sector and therefore conceal considerable variation across industries. Interindustry differences are illustrated in Table 1, which shows annual averages of layoff rates over the past 23 years. The highest yearly layoff rate in the petroleum and coal products industry was only 0.8, while the layoff rate for tobacco manufacturers reached 5.3. The annual layoff rate never fell below 2.2 for food and kindred products, but dropped to 0.3 in both the instruments and related products industry and the chemicals and allied products industry. In general, the range of layoff rates tended to be somewhat wider in the more volatile durable goods sector.

The swings in layoff rates are magnified at more disaggregated industry levels. While annual layoff rates fluctuated between 1.0 and 3.9 in the broad transportation equipment industry, they ranged from 0.9 to 5.3 in the motor vehicles and equipment industry, from 2.3 to 9.1 in ship and boat building and repairing, and from 1.0 to 10.3 in railroad equipment. Monthly swings in layoff rates are considerably greater, ranging from 0.2 to 16.9 for motor vehicles and equipment.[4] While it is important to recognize these differences across industries, the statistical investigation of this study will be limited to turnover at the aggregate manufacturing level.

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[3] This is the range for the seasonally adjusted series, from which the quarterly data cited in this study were taken.

[4] Monthly layoff rates come from U.S. Bureau of Labor Statistics, *Employment and Earnings, United States, 1909-78,* Bulletin 1312-11, Washington: Government Printing Office, July 1979. The data in this publication are not seasonally adjusted.

Table 1
RANGE OF ANNUAL LAYOFF RATES,*
BY 2-DIGIT MANUFACTURING INDUSTRY

1958-80

Industry	High	Low	Average
Manufacturing	2.6	0.9	1.6
Durable Goods	2.7	0.7	1.5
Lumber and Wood Products	3.1	0.9	1.8
Furniture and Fixtures	2.4	0.7	1.3
Stone, Clay, and Glass Products	2.4	0.9	1.6
Primary Metal Industries	2.9	0.4	1.4
Fabricated Metal Products	3.0	0.9	1.8
Machinery, except Electrical	2.5	0.4	1.0
Electric and Electronic Equipment	2.1	0.5	1.1
Transportation Equipment	3.9	1.0	2.4
Instruments and Related Products	1.3	0.3	0.7
Miscellaneous Manufacturing Industries	3.4	1.6	2.4
Nondurable Goods	2.5	1.2	1.7
Food and Kindred Products	3.9	2.2	3.0
Tobacco Manufactures	5.3	1.5	3.1
Textile Mill Products	1.8	0.5	1.0
Apparel and Other Textile Products	3.5	1.6	2.3
Paper and Allied Products	1.8	0.5	0.9
Printing and Publishing	1.0	0.5	0.8
Chemicals and Allied Products	1.3	0.3	0.7
Petroleum and Coal Products	0.8	0.4	0.6
Rubber and Miscellaneous Plastics	2.3	0.7	1.4
Leather and Leather Products	2.6	1.3	2.0

*The annual layoff rate is an average of monthly layoff rates (layoffs per 100 employees) over the calendar year.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings, United States, 1909-78,* Bulletin 1312-11, Washington: U.S. Government Printing Office: July 1979; Supplement to *Employment and Earnings,* September 1980; and U.S Department of Labor, Bureau of Labor Statistics, *Employment and Earnings* 28, March 1981, Table D-2.

Published layoff rates actually understate the volume of turnover. One reason is that layoffs lasting seven calendar days or fewer are excluded from the published series. Another reason is that data on layoffs are not collected from a random sample. Participation in the survey is voluntary and, since companies with high turnover are more likely to find participation burdensome, they are less likely to participate. Furthermore, large companies, which tend to have below-average turnover, are oversampled.[5]

Even abstracting from this downward bias, turnover can have a substantial impact on

[5] For further discussion, see Robert E. Hall and David M. Lilien, "Labor Turnover," in National Commission on Employment and Unemployment Statistics, *Concepts and Data Needs,* Washington: Government Printing Office, 1980, p. 584.

employment. Maintained for a full year, a 3 per cent layoff rate could reduce employment by 31 per cent even if there were no quits, deaths, retirements, or other separations. Or, to take a more concrete example, employment in the motor vehicles and equipment industry fell by 28 per cent between 1979:II and 1980:II even though the layoff rate averaged only 4 per cent over this period and the quit rate less than 1 per cent. Employment in the mobile homes industry declined by more than 20 per cent over this period despite the hiring of a large number of new and former employees. This is because an even larger number of employees were leaving. In particular, although the average monthly accession rate was over 9 per cent, the separation rate exceeded 11 per cent, primarily due to high quits.[6]

ACCOUNTING FOR MOVEMENTS IN THE QUIT AND LAYOFF RATES

As Chart 1 illustrates, quit and layoff rates are highly cyclical. When the labor market deteriorates and companies' demand for labor declines, layoffs rise and quits fall. Indeed, movements of these two series show a high inverse correlation, with a simple correlation coefficient of -.70. With respect to peaks in the business cycles, both series are leading indicators. On average, over the past six business cycles, the layoff rate bottomed out four quarters before the cyclical peak, and the quit rate reached its high three quarters ahead of the peak.[7] The layoff rate led the most recent downturn (1980:I) by six quarters, compared to the quit rate's five-quarter lead.

Quit and layoff rates, however, are not infallible in predicting the onset of a recession. To paraphase Paul Samuelson, these two series have predicted eight of the past six recessions. As Chart 1 indicates, in 1950-51 and again in 1966, these turnover statistics flashed false warnings of an imminent downturn. Furthermore, while the quit and layoff series have some predictive powers in forecasting the beginning of a recession, these powers do not extend to forecasting the end of a recession. During the last six business cycles, the layoff rate led the cyclical trough by less than one quarter on average, while the quit rate actually lagged the trough by almost a quarter.

Although cyclical variations in turnover behavior are well documented, there is some question as to whether time trends exist in turnover behavior. For example, a controversy has developed over whether quits have declined over time. In early writings on the subject, there was agreement that the quit rate was drifting downward. The major question was whether this decline was socially deleterious. Some argued that benefits were increasingly tied to seniority through a number of devices, including pension plans. It was alleged that

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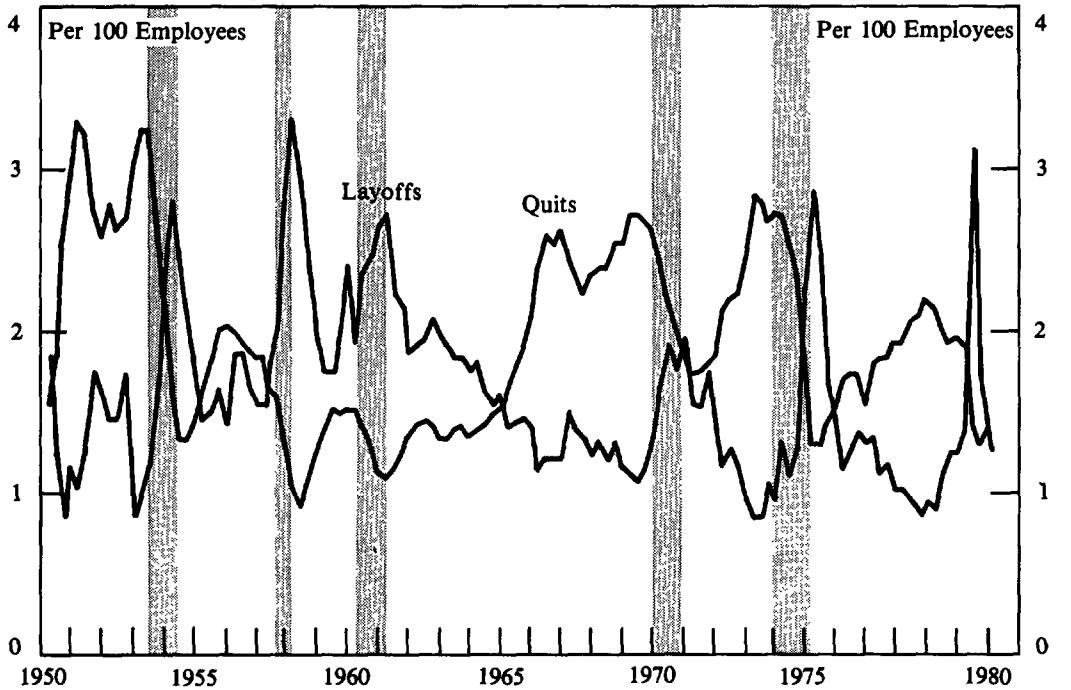
6 Accessions refer to gross additions to employment, separations to total terminations of employment. See footnote 2 for more detail.

7 Over these six business cycles, the layoff rate led the cyclical peak by two to seven quarters, while the lead for the quit rate ranged from zero to six quarters. (When quit or layoff rates maintained the same value for two quarters, the second quarter was assumed to be the turning point on the grounds that the quit or layoff rate did not actually turn around until after the second quarter.)

Armknecht argues that the reason labor turnover series are leading indicators is that manufacturing "is a bellweather for the rest of economy." He hypothesizes that "if labor turnover measures were available for the whole economy, they would most likely perform as coincident indicators of economic activity." But this explains only part of the lead. Over the past six business cycles, the initial decline in manufacturing production occurred zero to four quarters ahead of the cyclical peak, with an average lead of just under two quarters. Thus, on average, the two turnover series lead industrial production in manufacturing by about one or two quarters. (See Paul Armknecht, "Labor Turnover: Discussion," in National Commission on Employment and Unemployment Statistics, *Concepts and Data Needs,* Washington: Government Printing Office, 1980, p. 595.)

Chart 1
QUIT RATES AND LAYOFF RATES, 1950-1980



SOURCE: U.S. Department of Labor. Shaded areas represent recessions.

these benefits made the cost of quitting prohibitive, in effect chaining workers to their jobs. On the other hand, three recent studies on the subject concluded that there is no downward trend in quits.[8]

Although less has been written concerning potential trends in layoffs, there has been speculation that a downward trend in layoffs has existed over the past 30 years.[9] To test for the existence of trends in quit and layoff rates, as well as to account for short-term fluctuations, statistical relationships for both series were estimated for purposes of this article. These statistical relationships are discussed below.

Quits

As indicated earlier, the quit rate displays a highly cyclical pattern. To account for this variation, an equation to explain the quit rate was constructed to include a cyclical variable (CYC), based on the unemployment rate of adult males.[10] Disaggregated data suggest that

[8] This is discussed in James F. Ragan, Jr., "Uncovering the Trend in the Manufacturing Quit Rate: Has Rejection of the New Industrial Feudalism Hypothesis Been Premature?" Research Working Paper 80-06, Federal Reserve Bank of Kansas City, August 1980. An early study addressing the question of whether the decline in mobility has been voluntary is Arthur M. Ross, "Do We Have a New Industrial Feudalism?" *American Economic Review* 48, December 1958, pp. 903-20.

[9] Hall and Lilien, p. 581.

[10] Because of simultaneity between the quit and unemployment rates, the actual value of the unemployment rate could not be used. Instead, an instrumental variable was created based on lagged values of the unemployment rate for males aged 25-54, the percentage of the labor force unemployed 15 weeks or longer, and initial unemployment insurance claims as a percentage of the adult labor force.

turnover varies across demographic groups, with quits being more frequent for young workers and for women. Therefore, to standardize for the changing composition of the work force, two additional variables were included in the quit rate equation: YNG, the percentage of employees 24 years of age or younger, and WOM, the percentage of women employees.[11] Moreover, available evidence suggests that quit rates are inversely related to tenure on the job; that is, workers recently hired are much more likely to quit than are more senior employees. In other words, the faster employment has been growing over the past year, the greater will be the percentage of recently hired workers and the higher the quit rate. Therefore, a variable (EMP) measuring employment growth in manufacturing was added to the equation.[12] Incorporating each of the above explanatory variables, the quit rate was estimated, in log-linear form, over the period from 1950:I to 1979:IV. The results are reported below, with t-statistics shown in parentheses.[13]

$$
\begin{aligned}
(1)\ Q = {} & 4.47 - .34CYC + 1.22YNG \\
& (4.28) \quad (5.31) \quad (3.46) \\
& + 1.22\,EMP + .80\,WOM - .0054TIME \\
& (3.10) \quad (1.10) \quad (3.09)
\end{aligned}
$$

$\bar{R}^2 = .5370$ SE = .071 $\hat{\rho} = .818$ DW = 1.82

where:

- Q = Log (natural) of quit rate in manufacturing
- CYC = Log of cyclical variable (instrumental variable for adult male unemployment rate)
- YNG = Log of the percentage of employees younger than age 25
- EMP = Log of N_{-1}/N_{-4} where N_t denotes manufacturing employment in period t
- WOM = Log of the percentage of women employees
- TIME = Time trend (1950:I value = 1).

As hypothesized, the statistical results show that the quit rate is cyclical and positively related to both employment growth and the percentage of young workers. Only the variable measuring relative employment of women is statistically insignificant. Although a decrease in the proportion of young workers early in the sample period pulled down the quit rate, this was more than offset by a later surge in the youth share of employment. The net increase in relative youth employment over the past 30 years raised the quit rate by approximately one-third. Employment fluctuations in manufacturing are quantitatively less important: each 1 per cent increase in employment over the previous year raises the quit rate by only about 1 per cent. Net of other factors, the quit rate has exhibited a downward trend over the past 30 years, a feature that will be discussed later.

Layoffs

Layoffs, which are initiated by employers, depend on changes in product demand. When demand falls, companies reduce their production, although sometimes with a lag. A backlog of orders may be filled or inventories

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11 WOM measures relative female employment in the manufacturing industry, but YNG refers to relative youth employment in the overall economy. Data availability mandated use of this broader classification for youths.

12 EMP measures employment growth over the preceding three quarters (from period t-4 to period t-1). Employment growth in the current period is endogenous; its inclusion would bias estimates of the coefficients.

13 Initial estimation revealed positive first-order autocorrelation in the quit equation. The equation was then reestimated using the Hooke-Jeeves iterative search procedure to adjust for autocorrelation. (See R. Hooke and T. A. Jeeves, "Direct Search Solution of Numerical and Statistical Problems," *Journal of the ACM* 8, 1961: 212. Cited in National Bureau of Economic Research, *Troll/User's Guide* (Cambridge: National Bureau of Economic Research, Inc.) pp. 7-30.) The adjusted version is presented above.

built up before the rate of production is actually cut back. But as production slows, demand for labor declines. One method of adjusting labor input is to lay off workers. Consequently, layoffs should be inversely related to changes in production. If layoffs respond with a lag, they will depend on production changes of previous periods as well as the current period.

Layoffs are also likely to depend on the current state of the labor market. In the near term layoffs save the company money by reducing the size of the payroll. But those savings may be more than offset in the future, when demand picks up, if the company is forced to hire and train new employees. A company's decision of whether or not to lay off workers during a temporary decline in product demand will therefore depend on the magnitude of hiring and training costs and on the probability laid-off workers will return to work when recalled. The higher the unemployment rate, the less likely laid-off workers will find alternative employment and the more likely they will return to the original employer. Consequently, the higher the unemployment rate, the more likely layoffs will occur.

A layoff equation was estimated, in log-linear form, as a function of the variables just described (equation 2). Current production growth and production growth in each of the preceding two quarters proved statistically significant, but growth over earlier periods did not. Therefore, the equation presented below contains production growth lagged for only two quarters:

$$(2)\quad L = \underset{(.96)}{-.043} + \underset{(17.61)}{.50CYC} - \underset{(14.95)}{5.60X} - \underset{(4.18)}{1.72X_{-1}} - \underset{(3.43)}{1.29X_{-2}} + \underset{(7.64)}{.0079TIME} - \underset{(12.29)}{.00010TIME^2}$$

$$\bar{R}^2 = .9075 \quad SE = .095 \quad DW = 1.63$$

where:

L = Log of layoff rate in manufacturing

CYC = Log of cyclical variable (instrumental variable based on the adult male unemployment rate)

X = Log of IP/IP_{-1}, where IP_t denotes manufacturing industrial production in quarter t

X_{-t} = X lagged t quarters.

The results of estimating this equation over the period 1950:I to 1979:IV are as follows. First, a steady-state output growth of 2 per cent per quarter will reduce the layoff rate by about 17 per cent when compared to a no-growth state.[14] Also, even when accounting for differences in production growth, layoffs occur at a higher rate when the labor market is weak and opportunities for alternative employment are scarce.[15] In particular, a doubling of the adult male unemployment rate raises the layoff rate by 50 per cent. Finally, the estimated coefficients indicate an increasing trend in layoffs until the third quarter of 1959, after which the trend has been downward.[16]

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14 The sum of the coefficients on the three X terms, −8.61, is the elasticity of output growth. Thus, a 2 per cent change in quarterly output growth, when maintained for at least three quarters, will lead to a change in the layoff rate of about [8.61 x 2 =] 17.22 per cent in the opposite direction.

15 This is consistent with the findings of Barth and Parsons. Estimating separate equations for each of the broad manufacturing industries, they found that layoff rates were positively related to unemployment rates. See Peter S. Barth, "A Time Series Analysis of Layoff Rates," *Journal of Human Resources* 6, Fall 1971, pp. 448-65, and Donald O. Parsons, "Specific Human Capital: Layoffs and Quits," Ph.D. dissertation, University of Chicago, 1970.

16 When a linear time trend was included in the regression, its coefficient was negative and statistically significant. But a quadradic time trend provided a superior fit, in terms of both R^2 and standard error of the regression. The results reported above are therefore based on the quadratic trend.

Trends in Quits and Layoffs

The quit and layoff equations reveal that, other things equal, there has been a downward trend over the past two decades in both employee-initiated turnover (quits) and employer-initiated turnover (layoffs). Why has labor mobility declined? Certain forces reducing one type of turnover increase the other and therefore cannot explain the general decline in mobility. For example, studies indicate that unions reduce quits but increase the frequency of layoffs.[17] Although the general decline in unionism over the postwar period may have led to a reduction in layoffs, it should have prompted an increase in quits.

The spread of unemployment insurance may have decreased quits but could be expected to have an opposite effect on layoffs. Workers planning to leave their jobs may choose not to quit if they anticipate being laid off and thus qualifying for unemployment insurance.[18] On the other hand, the number of temporary layoffs should rise for two reasons. First, unemployment insurance decreases the probability that a worker on temporary layoff will accept alternative employment. This reduces the probability a company will lose a worker it has invested in and increases the willingness of the company to lay off that worker. Second, the unemployment insurance system subsidizes employers with unstable employment patterns, thereby increasing the relative number of high-layoff employers.[19]

One factor which should have reduced both types of turnover is the increase in workers' skills. As measured by years of education and occupational distribution, skill level has increased over time. Since hiring and training costs constitute a larger share of labor costs for skilled workers, companies are generally less likely to lay off skilled workers. In addition, to discourage worker mobility, skilled workers often receive wages higher than could be earned in other companies. The effect of an increase in the skill level, then, is to reduce both quits and layoffs.[20] Other factors may have also reduced labor mobility, but their investigation lies outside the scope of the present article.[21]

TURNOVER AND UNEMPLOYMENT

As noted earlier, layoffs are positively related to the unemployment rate and quits inversely related. These relationships also operate in the other direction: the source of unemployment can be characterized along the lines of turnover. Unemployment can be attributed to losing one's job, leaving one's job, or searching

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17 See George J. Borjas, "Job Satisfaction, Wages, and Unions," *Journal of Human Resources* 14, Winter 1979, pp. 21-40; Richard B. Freeman, "Political Economy: Some Uses of the Exit-Voice Approach," *American Economic Review* 66, May 1976, pp. 361-68; Richard B. Freeman and James L. Medoff, "The Two Faces of Unionism," *Public Interest* 57, Fall 1979, pp. 69-93; and James L. Medoff, "Layoffs and Alternatives Under Trade Unions in U.S. Manufacturing," *American Economic Review* 69, June 1979, pp. 380-95.

18 Although being laid off is considered a valid reason for unemployment, quitting without "good cause" can disqualify a worker from unemployment insurance. What constitutes an acceptable reason varies from state to state.

19 This is due to the incomplete experience rating of unemployment insurance, which limits the amount high-layoff employers must pay into the unemployment insurance program, while requiring employers with stable employment to pay more than their employees will ever use. Also, see Martin Feldstein, "The Effect of Unemployment Insurance on Temporary Layoff Unemployment," *American Economic Review* 68, December 1978, pp. 834-46.

20 See Gary S. Becker, *Human Capital,* New York: National Bureau of Economic Research, 1964, for a detailed discussion of the relationship between hiring and training costs and turnover. An implication of Becker's work—that firm-specific training should reduce both quits and layoffs—is also discussed in Donald O. Parsons, "Specific Human Capital: An Application to Quit Rates and Layoff Rates," *Journal of Political Economy* 80, December 1972, pp. 1120-43.

21 Other explanations are offered in Ragan, pp. 12-14.

for a job after being out of the labor force. Given the cyclical variation of quit and layoff rates, it is not surprising that the source of unemployment fluctuates over the business cycle.

The percentage of total civilian unemployment due to job loss reached a monthly high of 58.5 per cent during the 1974-75 recession before falling to 40.0 per cent in May 1979. Over the next year, it increased steadily, reaching a peak of 55.4 per cent during the 1980 recession. As the economy has recovered from that recession, the percentage of unemployment due to job loss has edged down. Even so, as of early this year, job loss still accounted for about one-half of all unemployment.

Heavy layoffs in the rubber, primary metal, and transportation equipment industries helped push the layoff rate in May 1980 to its highest value in more than 20 years, 3.5. As layoffs soared, so did the nation's unemployment rate. At 7.6 per cent, the May 1980 unemployment rate was 0.7 percentage point above the rate for April and 1.3 percentage points above the rate for March. But as Chart 1 illustrates, the layoff rate has dropped sharply since that time. This rapid turnaround is in character with last year's recession: deep but among the shortest on record. As layoffs declined, so did the unemployment rate, but much more slowly. Although recent layoff rates have been more moderate, a substantial number of workers who lost their jobs in earlier months remained unemployed.[22] Furthermore, the new hire rate in manufacturing, while increasing, has remained low by historical standards.

In addition to providing insights into swings in the aggregate unemployment rate, turnover also plays a role in explaining unemployment differentials. For example, unemployment rates are higher in industries characterized by employment instability, such as construction. In a similar vein, demographic differences in unemployment reflect differences in turnover. In 1979, the average duration of unemployment was only 9.6 weeks for women compared to 12.0 weeks for men, but women experienced so many more spells of unemployment that their unemployment rate was one-third higher. The situation is even more pronounced for age-based differences. Although the average spell of unemployment was much shorter for teenagers than for older workers (7.0 weeks vs. 12.0 weeks), the teenage unemployment rate was more than three times as high. And while the average duration of unemployment was only 23 per cent longer for nonwhites, the unemployment rate for nonwhites was more than twice as high as the rate for whites.[23]

Thus, the question of why one group has a higher unemployment rate largely translates into the question of why members of that group are unemployed more frequently. Differences in the length of unemployment spells appear relatively unimportant.[24] Of course, the reason an unemployment spell ends, whether because of employment or withdrawal from the labor force, also provides insight into a group's unemployment experience.

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22 The March 2, 1981, issue of Ward's *Automotive Reports* stated that "approximately one-fourth of the industry's hourly workforce is still out of a job."

23 The 1979 rates of unemployment were 6.8 per cent for women, 5.1 per cent for men, 16.1 per cent for 16- to 19-year-olds, 4.7 per cent for those 20 or older, 11.3 per cent for nonwhites, and 5.1 per cent for whites. In 1980, relative differences in unemployment rates narrowed, especially by sex, but 1980 was an atypical year. Indeed, for the first time in more than two decades, there were months when the male unemployment rate exceeded the female unemployment rate. This can be traced to the exceptionally high layoff rates in certain predominantly male industries.

24 For a discussion of demographic differences in labor market flows, see Stephen T. Marston, "Employment Instability and High Unemployment Rates," *Brookings Papers on Economic Activity* (1976:I), pp. 169-203, and the articles cited therein.

SUMMARY AND CONCLUSIONS

Turnover in the labor market is necessary if employers are to adjust the size and composition of their payrolls and if workers are to move on to jobs where they are more productive. As such, turnover is an integral part of the economic adjustment process and can provide insights into current and future paths of the economy. This study has provided information on several key characteristics of labor market turnover. First, quits and layoffs are highly cyclical: as the labor market deteriorates, quits fall and layoffs rise. As a consequence, the percentage of unemployment due to job loss is higher when the labor market is weak. Recently, about one-half of all unemployment has been attributable to job loss. If the economy continues to improve, layoffs will become a less important source of unemployment. Not only are quit and layoff rates cyclical, they also lead the business cycle at its peak. They therefore predict the onset of a recession, but they provide little insight into when a recession will end.

Both series display downward trends over time, as labor mobility in the United States has been declining. In this light, the high layoff rates experienced in the spring of 1980 are all the more dramatic and help explain the unusually rapid ascent of unemployment rates. Fortunately, layoff rates have fallen substantially since that time.

Other findings include the following. First, quit rates vary with the age composition of the work force and with the rate of employment expansion. In particular, young workers and recently hired workers appear especially prone to quit. Second, layoffs are inversely related to current and past production growth. Finally, demographic differences in unemployment rates closely correspond with differences in turnover experiences—that is, groups with high turnover also have high unemployment rates.