The Measurement and Significance of Labor Turnover

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EXECUTIVE SUMMARY

The importance of measuring turnover
Layoffs, quits, and other aspects of turnover are an important adjunct to other indicators of the performance of the national economy. In recent years, for example, layoffs have indicated much tighter labor markets than has the unemployment rate. Research based on turnover data have made important contributions to knowledge of the operation of labor markets.

Problems in the current program for measuring turnover
The existing cooperative federal-state program for collecting data on turnover has encountered a number of serious problems:
   o It covers only manufacturing industries.
   o Response is voluntary and consequently the sample is seriously unrepresentative. The severe bias toward understanding turnover is well documented.
   o Three states have dropped out of the program, including the largest, California.
   o The survey contains no occupational or demographic information about workers.
   o Movements of temporary and permanent workers are lumped together.
   o No data are collected on one-week layoffs.

Experience with alternatives methods for measuring turnover
   o The Job Opportunities and Labor Turnover Survey, in operation from 1969 through 1973, was generally disappointing in producing more detailed data.
   o Several states have participated in experiments with deriving turnover data from records of the Unemployment Insurance system. Within their limitations, notably their inability to distinguish permanent layoffs from quits, these experiments have been successful.
   o Turnover questions have been used successfully on household surveys carried out by the Census Bureau.

Proposals for improved data on turnover
   o Turnover data at high levels of industry and geographic detail should be compiled from existing Social Security Records.
   o A question about turnover should be added to the Current Population Survey each quarter.
   o Better tabulations of existing data on new claims for Unemployment Insurance should be compiled.
   o Improvements in the establishment survey for use in labor market programs should be supported through those programs.

INTRODUCTION

Every month, several percent of the U.S. work force changes jobs.
Measurement of this labor turnover provides insights about the operation
of the labor market that are not available from the data of employment,
unemployment, wages, and the related data from various surveys. At present,
data on labor turnover are fragmentary. There is a long-standing federal-
state program for measuring turnover in manufacturing industries, but the
future of that program is now uncertain. Experiments with some alternative
methods for collecting data on turnover have been carried out with some
success, and it is possible that the future of turnover measurement lies
in these new directions. This paper discusses the economic role of labor
turnover and the reasons for measuring it. It takes a critical look at
existing programs for gathering turnover data. It concludes with a set of
recommendations for collecting better data without launching a costly new
survey.

The reader should be familiar with the generally accepted terminology
of labor turnover: A separation is a departure of an employee from a job
for a reason other than vacation or temporary illness. Among separations
are layoffs, where workers stop work without prejudice because their services
are not needed. Layoffs can be subdivided into temporary layoffs, where
recall is likely in the future, and permanent layoffs, where the separation
is irrevocable; this distinction is not always clear at the time the layoff
occurs. Permanent layoffs are not always the unexpected endings of jobs
that were expected to last more or less indefinitely--many, perhaps the
majority, represent the endings of temporary jobs. Another major category

of separations is _quits_. These are separations that occur at the initiative of workers. Other separations include _discharges_, initiated by the employer for cause, _retirements_, _deaths_, and _transfers_ from one establishment to another operated by the same firm.

An _accession_ is any arrival of a worker other than one returning from a vacation or temporary illness. Accessions include _recalls_ of workers who have been on layoff and are specifically called back to their jobs, _new hires_, and _transfers_.

Turnover data are usually presented as rates per hundred employees.

THE SIGNIFICANCE OF TURNOVER

Turnover in the labor force has a well-documented relationship to other important macroeconomic variables, as shown in Table 1. The layoff rate rises early in cyclical contractions and is classified as a leading cyclical indicator. The jump in the layoff rate can be dramatic: in 1949, it increased to 2.9 percent per month from 1.6 percent in the year earlier, and in 1975, it rose to 2.1 percent from a level of 0.9 percent two years earlier and 1.5 percent one year earlier. Similarly, layoffs tend to be low in years of strong expansion, especially after the first year. Examples are the period of the Korean War, 1950-52, the long boom of the late 1960s, the brief boom in 1972-73, and the expansion beginning in 1976 that is still under way at this writing.

The quit rate moves inversely with the layoff rate. Except for 1948, a year of exceptional turnover, quits have never exceeded three percent of employment per month, but the rate has come close to that level in the booms of 1950-53, 1966-69, and 1972-73. Even in slack years, at least one percent of manufacturing employees quit each month. Quits reached their lowest postwar level in the recession year, 1958, at 1.1 percent. In 1975, a year of deeper recession according to the decline in real GNP and the level of the unemployment rate, quits remained at 1.4 percent, comparable to the years 1963, 1959, and 1954, none of which was a year of deep slump. This is a good example of an instance where turnover data give a different picture from other macroeconomic indicators.

New hires behave in much the same way as quits; the difference between the two fluctuates between half a percentage point and a little over one

Table 1:   Turnover Rates in Manufacturing, Percent Change in Real GNP,
           and Unemployment Rate, 1948-1977

| | Turnover rates | | | | | | |
| | Accessions | | Separations | | | % change | Unemployment |
Year	Total	New hires	Total	Quits	Layoffs	real GNP	rate, %
1948	5.4	NA	5.4	3.4	1.6	4.1	3.8
1949	4.3	NA	5.0	1.9	2.9	.6	5.9
1950	5.3	NA	4.1	2.3	1.3	8.7	5.3
1951	5.3	4.1	5.3	2.9	1.4	8.1	3.3
1952	5.4	4.1	4.9	2.8	1.4	3.8	3.0
1953	4.8	3.6	5.1	2.8	1.6	3.9	2.9
1954	3.6	1.9	4.1	1.4	2.3	-1.3	5.5
1955	4.5	3.0	3.9	1.9	1.5	6.7	4.4
1956	4.2	2.8	4.2	1.9	1.7	2.1	4.1
1957	3.6	2.2	4.2	1.6	2.1	1.8	4.3
1958	3.6	1.7	4.1	1.1	2.6	- .2	6.8
1959	4.2	2.6	4.1	1.5	2.0	6.0	5.5
1960	3.8	2.2	4.3	1.3	2.4	2.3	5.5
1961	4.1	2.2	4.0	1.2	2.2	2.5	6.7
1962	4.1	2.5	4.1	1.4	2.0	5.8	5.5
1963	3.9	2.4	3.9	1.4	1.8	4.0	5.7
1964	4.0	2.6	3.9	1.5	1.7	5.3	5.2
1965	4.3	3.1	4.1	1.9	1.4	5.9	4.5
1966	5.0	3.8	4.6	2.6	1.2	5.9	3.8
1967	4.4	3.3	4.6	2.3	1.4	2.7	3.8
1968	4.6	3.5	4.6	2.5	1.2	4.4	3.6
1969	4.7	3.7	4.9	2.7	1.2	2.6	3.5
1970	4.0	2.8	4.8	2.1	1.8	- .3	4.9
1971	3.9	2.6	4.2	1.8	1.6	3.0	5.9
1972	4.4	3.3	4.2	2.2	1.1	5.7	5.6
1973	4.8	3.9	4.6	2.7	.9	5.5	4.9
1974	4.2	3.2	4.8	2.3	1.5	-1.4	5.6
1975	3.7	2.0	4.2	1.4	2.1	-1.3	8.5
1976	3.9	2.6	3.8	1.7	1.3	6.0	7.7
1977	4.0	2.8	3.8	1.9	1.2	4.9	7.0

percentage point. New hires exceed quits by the largest margin in years of rapid expansion of output and employment, as in 1951-52, 1955, 1959, 1962-69, 1972-73, and 1976-77.

The difference between total accessions and new hires is a rough measure of recalls from temporary layoffs. Total accessions tend to drop in recessions, but not by very much, and not nearly by as much as new hires drop. Thus recalls tend to <u>rise</u> in recessions—more workers are being called back to work each month when work is scarce than when it is plentiful. The explanation of this curious finding lies in the work sharing process that is described in a later section of this paper.

The trend in layoffs

There is clear evidence of a downward trend in the layoff rate over the past thirty years. During the brisk expansion from 1950 through 1952, layoffs never dropped below 1.3 percent per month, in spite of two years of growth in real GNP in excess of 8 percent and unemployment as low as three percent of the labor force. In the long expansion of the late 1960s, layoffs fell as low as 1.2 percent. Then in 1973, layoffs dropped below one percent, to 0.9 percent, for the first time since the data began to be collected. GNP growth was not as strong or as sustained during that period as in the two earlier periods, and the unemployment rate was 4.9 percent, well above the levels in the earlier periods. The layoff rate again dipped to 0.9 percent in early 1978, following two years of reasonably rapid growth in GNP but in the presence of an unemployment rate of six percent. The downward trend in layoffs is also visible in contractions. The layoff rate reached levels of 2.9 percent in 1949 and 2.3 percent in 1954, both years of mild recession, but rose only to 2.1 percent in 1975, the year of the deepest postwar recession, measured either by the shortfall in growth of real GNP or the level of the unemployment rate.

The interpretation of the downward trend in layoffs is a matter of considerable interest and controversy. It is arguable that most of the change occurred in the 1970s, which was also a period of considerable acceleration of wage inflation. It is possible that these two phenomena are related. Charles Schultze (12) suggested that the layoff rate might be superior to the unemployment rate as an index of inflationary pressure in the labor market. Under this hypothesis, the downward trend in layoffs simply reflects a trend toward tighter labor markets over the period, and

this has brought about the accelerating inflation. The hypothesis leaves
unexplained the failure of the unemployment rate to show a similar down-
ward trend. Many reasons have been advanced recently for growing unemploy-
ment, apart from weak demand, but so far, research has been unable to
identify forces strong enough to explain the large increase in unemployment
in the 1970s. The most definite statement that can be made at this stage
is that, measured by the layoff rate, the labor market is extremely tight,
and has been in every year of the 1970s save 1975, while measured by the
unemployment rate, the market has been extremely slack in all years except
1973. The resolution of this question is one of central importance for
national economic policy, and is one of the principal justifications for
intensified efforts to collect data on labor turnover.

The role of turnover in the economy

The economic role of layoffs has been clarified by an important body
of recent research. By and large, workers who have been laid off have
not lost their jobs permanently. On the contrary, most of them are
eventually recalled to their jobs, an interesting finding originally
suggested by Feldstein (7) and demonstrated more conclusively by Lilien (9).
Both researchers made extensive use of the existing data on turnover in
manufacturing. Certainly this line of research would be advanced con-
siderably if improved data with broader industry coverage were available.

The main purpose of layoffs, according to the modern view, is to
make employment respond flexibly to changes in demand, without destroying
the unique relationships between employers and individual workers. With
layoffs, jobs can be permanent, or nearly so, even though they are interrupted

by layoffs periodically. Layoffs are part of the more general phenomenon of <u>work-sharing</u>. The other principal means for sharing work in times of reduced demand is a shortened work week.

The duration of work-sharing layoffs varies among industries. In some, notably the automobile industry, it is customary for many layoffs to last exactly one week. Entire plants are shut down briefly, and all of the workers are put on layoff. From the point of view of the worker, one-week layoffs are uniquely advantageous because they provide nine consecutive free days for only five lost days of work. Oddly enough, one-week layoffs are not counted in the existing turnover survey--employers are instructed to report only those layoffs involving more than seven consecutive days off the job. Thus nothing is known about the extent of one-week layoffs.

In most industries, layoffs last six or eight weeks on the average, though a minority can last six months or longer. According to Lilien's research, the average duration of layoffs that exceed one week but do eventually terminate in recall is seven weeks, or 1.6 months. Industries differ systematically--in petroleum and coal products, the average layoff lasts just three weeks, while in primary metals (steel and the like) and chemicals, the average duration is close to two months. Layoffs last longer in a recession. From 1974 to 1975, the average duration in manufacturing rose from 1.5 months to 2.0 months. Even so, in most cases, individual layoffs are much briefer than the slump in demand they help accommodate. Layoffs last one or two months while recessions last a year or more. Especially in industries like the auto industry, where layoffs are usually very brief, repeated layoffs are required in the face of the typical slump. Different groups of workers are on layoff at any one time. This is why the

layoff rate tends to remain high in the late stages of a recession, even after employment has reached its trough, and even into the early stages of a recovery, and why the recall rate rises during a recession.

Several economic forces contribute to the layoff-recall process. First, workers accumulate knowledge and skills on the job, and much of this "specific human capital" cannot be transferred to other jobs (Pencavel, (11)). It is economically most efficient for workers with large volumes of specific capital to keep their jobs during a slump, to work less until a recovery occurs, and then to return to full-time, full-year work. In the process, the turnover data will report one or more layoff and rehire for each worker who temporarily is told not to come to work. Not every worker who is laid off becomes unemployed—some take temporary jobs in other sectors. Where specific human capital is important, however, what matters is that the worker return to his permanent job and avoid dissipating the capital associated with it.

In industries where labor unions have achieved employment terms that are significantly better than those in the labor market at large, there is an additional stimulus to the layoff-recall process. Workers have an incentive to remain in their jobs because of the advantages provided by the union. Leaving the job and taking employment in another industry often involves sacrificing these advantages. Work-sharing as a response to a slump in demand then preserves the value of unionization even if it is not justified by specific human capital. Research by James Medoff (10) using the turnover data from manufacturing has documented a remarkable difference between layoff rates in union and non-union firms—the monthly probability of layoff is between two and four times higher in unionized firms than in otherwise similar non-union firms. This finding seems

paradoxical if the relation between work-sharing and layoffs is not appreciated. It may seem that unions are failing to protect the interests of their members. Actually, their protection is strong, because union members do not lose their jobs when they are laid off. Union protection stimulates brief work-sharing layoffs while it limits or prevents permanent job loss.

Another bias toward work-sharing comes from the heavy taxation of earnings under the income tax and payroll tax and the subsidy to work-sharing unemployment paid by unemployment compensation. For any particular employer and group of workers, the work-sharing solution to reduced demand becomes more attractive to both parties if the government takes a substantial fraction of the proceeds of work on the one hand and subsidizes time off the job on the other hand. The net effect of both taxes and subsidies can be measured by the replacement ratio, the ratio of take-home income while unemployed to take-home earnings while working. For the typical worker, the replacement ratio is just over 50 percent. But about 30 percent of workers have replacement ratios above 70 percent, because they live in states with high taxes and generous unemployment compensation and because of their own particular characteristics. Another 12 percent have replacement ratios below 30 percent. Research by Martin Feldstein (6) has shown that the typical experienced adult worker facing a replacement ratio between 30 percent and 70 percent is on work-sharing layoff 1.4 percent of the time. Those with low ratios are on layoff 1.2 percent of the time, while those with high replacement ratios are on layoff 2.2 percent of the time. These figures suggest that employers and workers develop work-sharing arrangements that encourage layoffs when the tax and unemployment compensation system provides an incentive to do so. The bias toward high unemployemnt on this account is not just theoretical.

THE MEASUREMENT OF TURNOVER

The movements of workers among jobs and through the layoff process can be measured in two basic ways. Either employers can report movements into and out of their establishments, or individual workers can report their own movements. Both methods are used in the United States today, though the official program of the Bureau of Labor Statistics for reporting turnover relies entirely on reports from employers. Various bodies of data on individual workers can be processed to yield information about turnover, though this is not currently done in any regular fashion.

The Labor Turnover program of the BLS is a cooperative effort with state employment departments.[1] The state is responsible for creating a sample of reporting firms. The sample is supposed to contain at least 60 percent of all establishments with 100 or more employees and at least 5 percent of all other establishments. Participation in the program is voluntary, both for individual firms and for states. At this writing, three states, California, New Mexico, and West Virginia, have dropped out of the program.

Participating employers fill out the form which is shown on the next two pages. It travels back and forth from employers to state employment departments once a month. The instructions contain definitions of the various categories of turnover, and it is important to keep some of them in mind in interpreting the data:

1. Layoffs are counted only if they exceed seven consecutive calendar days. One-week layoffs are deliberately omitted from the data because of possible confusion in cases of shortened work weeks. These are known to be important in the auto industry and may be important elsewhere.

DL 1219

	State	Report No.	Ind.		

U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics

The Employment and Training
  Administration

MONTHLY REPORT ON
LABOR TURNOVER

> Enter the data requested and return in the
> enclosed envelope as soon as the informa-
> tion is available each month.

(Change name and mailing address if incorrect—include ZIP code)

SAMPLE COPY

This report is authorized by law 29 U.S.C. 2. Your voluntary cooperation is
needed to make the results of this survey comprehensive, accurate, and
timely. The information collected on this form by the Bureau of Labor
Statistics and the States cooperating in its statistical programs will be held
in confidence and will be used for statistical purposes only.

LOCATION ....
                                   (City)   (County)   (State)

Before entering data see explanations on other side

YEAR AND MONTH (1)	PERIOD COVERED (Col. 4 through 12)		I. LABOR TURNOVER DURING CALENDAR MONTH — ALL EMPLOYEES									II. EMPLOYMENT (one pay period) TOTAL NUMBER who worked during or received pay for any part of the pay period which includes the 12th of the month. (13)	DO NOT USE Expl. code (14)
	From— (2)	Through (3)	SEPARATIONS (during calendar month)					ACCESSIONS (during calendar month)					
			Total separations (sum of cols. 5 thru 8) (4)	Quits (5)	Discharges (6)	Layoffs (7)	Other separations (8)	Total accessions (sum of cols. 10 – 12) (9)	New hires (10)	Recalls (11)	Other accessions (12)		
1977 Dec.													
1978 Jan.													
Feb.													
Mar.													
Apr.													
May													
June													
July													
Aug.													
Sept.													
Oct.													
Nov.													
Dec.													

YEAR AND MONTH	III. YOUR COMMENTS — Enter main factors responsible for any significant month-to-month changes in SECTIONS I and II. Examples are: *more business, strike, fire, weather, temporary summer help, seasonal increases, etc.* (15)
1977 Dec.	
1978 Jan.	
Feb.	
Mar.	
Apr.	
May	
June	
July	
Aug.	
Sept.	
Oct.	
Nov.	
Dec.	

Person to be addressed if questions arise regarding this report	Position	Telephone no.

INSTRUCTIONS FOR COMPLETING THIS FORM

I. LABOR TURNOVER

PERIOD COVERED —Information on labor turnover, columns 4 through 12, is requested for the most recent *entire calendar month* specified in column 1, or, if this is not possible, for a period, which most closely covers that calendar month. In either case, enter in column 2 and 3 the beginning and ending dates for the monthly period for which turnover data are reported.

SEPARATIONS (ALL EMPLOYEES)

Column 4 TOTAL SEPARATIONS —Enter the sum of columns 5 through 8.

Column 5 QUITS —A quit is a termination of employment *initiated by the employee* for any reason except to retire, to transfer to another establishment of the same firm, or for service in the Armed Forces. Include a person who fails to report after being hired (if previously counted as an accession) and an unauthorized absence if on the last day of the month the person has been absent more than 7 consecutive calendar days.

Column 6 DISCHARGE —A discharge is a termination of employment *initiated by the employer* for such reasons as incompetence, violation of rules, dishonesty, laziness, absenteeism, insubordination, failure to pass probationary period, etc. Inability to meet organization's physical standards should be reported in other separations, column 8.

Column 7 LAYOFFS —A layoff is a suspension from pay status (lasting or expected to last more than 7 consecutive calendar days without pay) initiated by the employer *without prejudice to the worker* for such reasons as: lack of orders, model changeover, termination of seasonal or temporary employment, inventory-taking, introduction of labor saving devices, plant breakdown, shortage of materials, etc.; *include temporarily furloughed employees and employees placed on unpaid vacations.*

Column 8 OTHER SEPARATIONS —Include only terminations of employment for military duty lasting or expected to last more than 30 calendar days, retirement, death, permanent disability, failure to meet required physical standards, and transfers of employees to another establishment of the company. NOTE: If you include any other types of separations in this column, mention the number and type under Comments. Employees involved in labor-management disputes should not be counted as separations.

ACCESSIONS (ALL EMPLOYEES)

Column 9 TOTAL ACCESSIONS —An accession is any permanent or temporary addition to the employment roll whether of new or former employees, or transfers from another establishment of the company. Enter in column 9 the sum of columns 10 thru 12. Employees involved in labor-management disputes should not be counted as accessions when they return to work.

Column 10 NEW HIRES —New hires are temporary and permanent additions to the employment roll of (1) anyone who has never before been employed in this establishment, or (2) former employees you did *not* call back. Persons transferred from other establishments of the company should be reported in "other accessions."

Column 11 RECALLS —Recalls are permanent or temporary additions to the employment roll of persons specifically recalled to a job in the same establishment of the company following a period of layoff lasting more than seven consecutive days. Employees called from a layoff in a different establishment of the company are to be classified as a transfer and reported in column 12 —OTHER ACCESSIONS.

Column 12 OTHER ACCESSIONS —Include all additions to the employment roll other than new hires and recalls. This includes transfers from other establishments of the company, and former employees returning from military leave or other absences without pay who have been counted as separations. Employees involved in labor-management disputes should not be counted as accessions when they return to work.

II. EMPLOYMENT

PERIOD COVERED —Employment information, column 13 is requested for one pay period (preferably one week) which includes the 12th of the calendar month for which labor turnover data are reported.

Column 13 TOTAL NUMBER —Enter the total number of persons on the payrolls of the establishment(s) covered in this report who worked full- or part-time or received pay for any part of the pay period (preferably one week).

Include salaried officers of corporations, executives and their staffs, and employees engaged in force-account construction but exclude proprietors, members of unincorporated firms, and unpaid family workers. Include persons on vacations and sick leave if they received pay directly from your firm for the pay period covered.

Exclude persons on leave without company pay the entire period and pensioners and members of the Armed Forces carried on the rolls but not working during the pay period covered.

III. COMMENTS

Column 15 YOUR COMMENTS —Enter the main factors responsible for significant month-to-month changes in Labor Turnover (columns 4 through 12) and Employment (column 13).

2. When a temporary job comes to an end, the separation is counted as a layoff. Thus the layoff category contains a variety of sources of movement out of jobs: temporary work-sharing layoffs, unexpected but permanent losses of jobs, and the expected terminations of temporary jobs.

3. There is a residual category called "other separations" which includes transfers of employees to other establishments of the same firm.

4. New hires may include people who were previously employed by the firm, as long as they were not specifically recalled.

5. Recalls are now counted separately. However, before 1976, they were counted as part of "other accessions." The historical data do not shed light directly on the question of the overall importance of the layoff-recall process.

Both the Bureau of Labor Statistics and the users of the turnover data are acutely aware of their problems and limitations. The survey covers only manufacturing industries. The voluntary nature of the sample makes it unrepresentative. The omission of the largest state in the country is a serious problem. The survey contains almost no demographic or occupational information about the workers who are joining or leaving firms. It lumps together movements of temporary and permanent workers. It omits one-week layoffs.

Industry coverage

The existing turnover data refer only to manufacturing and mining industries. These industries are a declining and unrepresentative part of the American economy. In particular, evidence from other sources indicates that turnover in manufacturing is _lower_ than in almost all other sectors. Trade and services, which together far outweigh manufacturing in employment, have turnover rates that are nearly double those in manufacturing.[2] Less surprisingly, construction also has much higher turnover rates. The BLS has been anxious to widen the industry coverage of the turnover survey, but has been unable to obtain the necessary funds.

The sample

Participation by firms in the turnover survey is voluntary. Since the cost of reporting is likely to be higher in firms with high turnover, self-selection of lower-turnover firms may be one of the explanations of the general tendency for the survey to understate turnover. Further, large firms seem to be able to dictate the terms of their participation in the program. For example, General Motors does not submit the standard form (DL1219), but rather gives copies of its own internal turnover report to the state agencies. The BLS concedes that "this will result in some understatement of rates (turnover actions are given only for hourly rated employees) but should cause less distortion than any available alternative method."[3]

The turnover survey delibleratey under-samples small firms relative to large ones. Larger firms are more likely to maintain the right kind of records and thus be willing to participate. If the object were to

sample from as large a possible a body of workers given a fixed budget for the survey, then over-sampling of large firms would be appropriate. However, it is clear that large firms have lower turnover rates than small ones, so the over-sampling of large firms contributes an additional source of downward bias in the reported turnover rates. In California, where turnover is measured in a completely representative sample, it has been found that turnover rates are more than twice as high in firms with less than 100 employees compared to those with more than 1000 employees.[4]

One of the most serious sampling problems in the current survey is inherent in its design: Newly organized firms are under-represented because they are likely to be small and because they do not enter the sampling universe of the survey (reports to the unemployment insurance system) for several months after they come into being. As a result, the survey under-estimates new hires. There is no corresponding bias in separations, because firms going out of business are counted. As a result, the flows reported in the turnover data consistently underestimate the growth in total employment. This point is documented later in the paper.

Declining state participation

The withdrawl of California and two other states from the turnover program has very seriously compromised the data. State employment departments are only partially compensated by the federal government for the costs of carrying out the monthly turnover survey. Apparently the states that have dropped out no longer consider the turnover data sufficiently worthwhile to justify the state portion of the cost of the survey. At the time of the withdrawal BLS assumed responsibility for surveying those establishments included in the state samples. However no effort has been made to replace

those establishments in the sample that have been lost through normal attrition. This has led to a serious decline in the sample size of the three states that have withdrawn from the program.

Demographic and occupational information

The current survey obtains counts of employees entering and leaving firms. Detailed information is collected about the nature of the firm, but nothing about the characteristics of the workers. It is known from other sources that turnover is disproportionately concentrated among young workers, among racial minorities and other disadvantaged workers, and in certain occupations. It is clearly infeasible to collect any new information of this kind within the existing survey, as it would drastically increase the reporting costs of the participating firms and exacerbate the problems of the unrepresentativeness of the sample.

Temporary workers

Much turnover derives from the temporary employment of certain kinds of workers. Each time a temporary office worker, construction worker, Christmas sales clerk, teenage summer helper, or the like is put on the payroll, a new hire appears in the data, and when they depart, a layoff appears. In particular, the conventional notion of a layoff, as the temporary or permanent loss of a job that was expected to last more or less indefinitely, may even be dominated by the departures of temporary workers, who do not think of themselves as having been laid off at all, in many cases. In the California program for collecting turnover data, it is possible to measure the actual duration of employment associated with each new hire. In 1973-74, 17 percent of new hires were for extremely brief jobs—the workers

earned less than $100 in at most two consecutive quarters. Another 52

percent were for jobs that turned out to last no more than six months.

Only 31 percent of new hires were for jobs lasting three or more quarters.[5]

Both the design of the turnover survey and the interpretation of the data

need to take full account of the great importance of brief or temporary

jobs in the turnover processes.

Omission of one-week layoffs

Layoffs of exactly one working week are omitted from both separations

and accessions. No other body of data is capable of detecting brief

layoffs—the California technique   based on quarterly records of earnings

omits all layoffs of less than a few months if they ultimately end in recall.

Nothing systematic is known about the prevalence of one-week layoffs.

Consistency of the turnover data and other sources of information

One of the simplest checks for the consistency of the turnover data

is a comparison of the rate of change of employment inferred as accessions

minus separations, with the change in employment reported from the independent

survey of employment (the CES or BLS 790 survey). The employment survey

is benchmarked periodically to comprehensive data on employment and is

believed to be reasonably accurate. The comparison appears in Table 2 for

the years 1951 through 1974. On the average, employment growth is under-

stated by 0.16 percent per month or almost two percent per year in the

turnover survey. Part of this bias is apparently attributable to the omission

of the hiring actions of new firms. Some of the rest may come from the

under-sampling of smaller, more rapidly-growing firms. The bias is fairly

Table 2:   Average Monthly Rate of Change of Manufacturing Employment

Year	Turnover series	Establishment employment series
1951	.0	.1
1952	.5	.5
1953	-.3	-.2
1954	-.5	-.3
1955	.6	.5
1956	.0	.1
1957	-.6	-.3
1958	-.5	-.3
1959	.1	.4
1960	-.5	-.4
1961	.1	.2
1962	.0	.1
1963	.0	.1
1964	.1	.3
1965	.2	.5
1966	.4	.5
1967	-.2	.0
1968	.0	.2
1969	-.2	.0
1970	-.8	-.6
1971	-.3	-.1
1972	.2	.5
1973	.2	.3
1974	-.6	-.5

consistent from year to year; once it is kept in mind, it does not seriously compromise the turnover data for most uses.

A more thorough validation of the turnover data is available from the work of the California Employment Development Department (CEDD) in measuring turnover from the records of the state unemployment insurance system. By examining the quarterly earnings reports from the employers of a sample of individual workers, the CEDD measures turnover in a completely different way from the BLS procedure. The CEDD technique cannot measure layoffs lasting less than one quarter, as mentioned earlier, so both separations and accessions should be lower in the EDD data than in the BLS data. New hires and permanent separations should be about the same in the two data sources. In fact, however, turnover is much higher in the CEDD data. For manufacturing in the fourth quarter of 1975, the quarterly accession rate was 17.5 percent according to the CEDD. The national average at quarterly rates, according to the BLS was 8.7 percent, just under half as high. About half of the gap can be attributed to the unrepresentativeness of the BLS sample. The CEDD compiled its accession rates for the set of firms included in the small BLS sample of California employers and found it to be 12.3 percent per quarter, as against 17.5 percent for the representative sample. However, the BLS sample for California does not conform to the rules set down for states with cooperating employment departments, so this comparison is not as precise as one could hope for. It does show that the composition of the sample is a significant issue, though.

Experience with alternative approaches to collecting turnover data

From 1969 through 1973, a joint federal-state program called Job Opportunities and Labor Turnover Survey (JOLTS) was in operation. Information on job vacancies and turnover was collected monthly from state samples of manufacturing establishments. In addition, non-manufacturing establishments were surveyed in 27 metropolitan areas. A quarterly supplemental survey also collected occupational and wage data on vacancies from 13 of the 27 areas. The organization of JOLTS was similar to that of the CES and turnover surveys--data was collected by the state employment departments and transmitted to the BLS in Washington for compilation. For the manufacturing firms in the JOLTS sample, data were collected by a supplement to the regular turnover questionnaire. Presumably all of the biases present in the turnover survey also affect JOLTS, especially within manufacturing.

Of the data collected under JOLTS, only the manufacturing job vacancy data have been released by the BLS. The turnover data are in storage in Washington and the occupational data were never trans-mitted to Washington. As a result, it is not possible to evaluate these aspects of JOLTS. Several reasons were cited by people in BLS for ending the program in 1973. Some state employment departments were dissatisfied with the level of federal compensation relative to the extra effort re-quired to obtain the new data. Further, the Employment and Training Admin-istration (ETA) was not satisfied with the output of the program and wanted to reduce its budget. It should be noted that ETA did not want the program discontinued and objected to its discontinuation. Finally,

the economic environment from which the JOLTS program emerged so changed

as to reduce its importance. In the late sixties when the JOLTS program

was planned, unemployment was low, vacancies were high, and it was

felt that a survey of vacancies could identify sectors of unmet labor

demand. In the early seventies most vacancies disappeared, removing a

major motivation for the program.

A number of more successful experiments in collecting turnover

data have been conducted by various state employment departments under

contract to the Labor Department.[6] Some aspects of this experiment in

California have already been described in this paper. The basic idea of

the new technique is to infer turnover from data reported by employers

to the unemployment insurance system. Participation is mandatory, since

the reports are required by law, and enforcement is strict. Only

thoroughly illegal employment and unemployment in the very small un-

covered sector (now mainly household employment) is omitted from the

data.

The new technique is most successful in identifying movements of

workers from one employer to another. Because the UI reports are made

quarterly by employers, it is impossible to detect temporary absences

from work. Layoffs terminated by recalls, which are an important phe-

nomenon at least in manufacturing, are generally overlooked. Recalls

are recorded only when they occur many months after the corresponding

layoffs, and even then cannot be distinguished from rehires of workers

who happened to be employed by the same firm earlier. Further,

the new technique provides no information about the reason for a job

change, while the employer survey distinguishes quits. Finally, because

the employers' reports themselves cover a three-month period, because

of lags in reporting requirements, and because of data processing lags,

6 to 9 months elapse before turnover data become available from

the new technique. This lag reduces the value of the data for

many purposes.

In an earlier section, we showed that the turnover rates from the

California data exceeded the rates from the employer survey of the BLS

by a considerable margin. Part of this is due to the nature of the BLS

sample. But some of the remainder may be attributable to an inherent

upward bias in any technique based on comparing successive employment

records of individual workers: random errors in identifying employers

will be recorded as job changes. The incidence of errors in keypunching

employers' identification codes and from other sources is unknown. Within

the UI system, the government and the employer have a strong incentive

to record the correct number of employees and, in some cases, their

earnings, because these determine the base for the UI payroll tax. This

does not guarantee that the UI system correctly credits each worker for

the earnings from a particular employer. Only in those cases where

workers claim UI benifits and the level of their past earnings matters

in the determination of benefits will there be an incentive to correct

errors in workers' records.

Another body of experience in collecting turnover data has been

accumulated by the Census Bureau in various surveys of individual households.

The Current Population Survey, conducted once a month to gather data on

unemployment and other matters, does not have a regular question on

turnover but does occasionally collect data that bears on turnover. Once

a year, workers are asked about the number of spells of unemployment and

the total number of weeks of unemployment in the previous year. Informa-

tion about the frequency and duration of unemployment can be inferred

from the answers to these questions and is closely related to turnover.

More directly relevant is a set of special surveys conducted by the

Census Bureau with the support of the Department of Labor. In these

surveys, the National Longitudinal Surveys of Work Experience, workers

were asked about their recent employment histories, so information about

turnover is available directly. Many different forms of questions about

jobs and job changes were asked. In some cases, questions about the

current job and the immediately preceding job were used. In others,

the questions centered around the current job and the job held a year

earlier, with subsidiary questions about the number of intervening jobs.

The National Longitudinal Surveys have proven a rich source of data for

research on a wide variety of economic issues, but relatively little

has been done on turnover. For example, we know of no systematic com-

parison of turnover rates found in the NLS data with corresponding rates

from the employer survey.

Improvements in the turnover data proposed by the BLS

The Bureau of Labor Statistics is currently proposing a set of

improvements in the labor turnover program in connection with the collection

of new data on job vacancies. The proposal has not yet received approval

from the Department of Labor or the OMB, so the information available to

us about it was necessarily scant. The basic idea of the proposal is to

expand the turnover sample to include all nonagricultural industries and to collect data on vacancies and new hires by occupation. The new data on vacancies and new hires would be obtained from a quarterly supplement to the turnover questionnaire. In addition, the BLS proposes to eliminate the oversampling of larger firms.and to limit the adverse effects of self-selection by replacing non-cooperating establishments. The BLS hopes to develop a method for including new establishments in the sample. The proposed program would be fully funded by the federal government, which would help to maintain state cooperation.

The proposal would solve some but by no means all of the problems with the current turnover survey. The extension to all nonagricultural indus-tries would be a major step forward. The collection of occupational in-formation would be valuable, especially if the occupational detail is adequate to separate most of the hiring of temporary workers. But the major problem of self-selection of the sample associated with voluntary participation by firms would remain in spite of new efforts to counteract it, and probably be significantly worsened by the considerable increase in the reporting burden required to get vacancy data and occupational breakdowns.

IMPROVED METHODS FOR MEETING THE NEEDS FOR DATA ON LABOR TURNOVER

In this section we will describe three methods for collecting information on turnover reliably at low cost. None of the methods meets all of the identified needs for data on turnover. The three methods would dramatically improve the quality of information used by analysts of the performance of the aggregate national economy and by researchers with interests in labor turnover. It is the needs of operating labor market programs--job placement, CETA, and the like-- that are hardest to meet. Our proposals would not yield the kind of timely, geographically detailed data that these programs need.

Our first proposal is to carry out a national program to compile turnover data following the promising beginning of the Employment Service Potential (ESP) experiments. There is in existence a complete national body of data suitable for the ESP technique, namely the Longitudinal Employer-Employee Data (LEED) file prepared by the Social Security Administration from the tax returns filed by employers under the Federal Insurance Contribution Act.[7] The LEED sample contains one out of every hundred workers in the U.S. It reports quarterly earnings subject to the payroll tax for every employer of each worker in the sample. Except for the fact that some workers reach the ceiling for taxable earnings under FICA before the end of the year, the earnings records in the LEED file are the same as in the file prepared in the ESP experiments from unemployment insurance records. The advantages of compiling turnover data from the LEED file are impressive:

1. It is a uniform, national body of data. Coverage of the private sector employment is now close to universal. Not only are the data already being collected, but the Social Security Administration already has a program for producing an appropriately organized set of computer tapes from which the compilation of turnover data would be straightforward.

2. The tremendous size of the LEED sample—almost one million workers—would make it possible to obtain data for very detailed industrial and geographic breakdowns. Three-digit industry breakdowns are quite feasible, and it is even possible to compile turnover rates for individual companies, though the identity of the companies themselves cannot be determined with certainty. Geographic detail at the level of labor markets with only 100,000 workers is also feasible. In fact, the obstacle to presenting detailed results is likely to be the sheer volume of data, not the statistical weakness of the survey, as in most statistical programs.

3. The cost of the compilation of turnover rates from the LEED file should be very modest, perhaps in the order of $10,000 per quarter.

In spite of these attractive features, derivation of turnover data from the LEED file shares some important, inherent defects with the pilot study in California:

1. Data cannot be produced fast enough to be useful in macroeconomic forecasting or for program operations. The delay in the availability of the LEED file is now several years, and though it could be reduced somewhat, it seems unlikely that the delay could be brought much below one year. Accuracy and efficiency come before

speed in the design of the data processing operation at the Social

Security Administration, and there is no reason to expect this to

change in the future.

2. It is not possible to distinguish quits from layoffs and other

reasons for separations.

3. Temporary layoffs are generally obscured by the 3-month reporting

period.

Some of these problems are overcome in our second proposal, but at the cost

of sacrificing the rich detail available from the LEED data: We propose

that a question about turnover be added to the monthly Current Population

Survey (CPS). The CPS obtains data about the labor force status of almost

100,000 individuals of working age every month. It is developed from a

carefully prepared random sample of U.S. households and enjoys a high

reputation for administrative and scientific competence. Because the CPS

is the basis for the monthly reports of U.S. unemployment, its collection

and processing takes place rapidly--the unemployment rate is announced only

about a month after the survey is carried out. The CPS is clearly the

most promising way to obtain timely information about turnover rates in

the national economy. The small size of the sample precludes extensive

geographic and industry detail, however, and it too is unlikely to meet

the needs of program operations.

Specifically, we propose that the following question be added to the

CPS, perhaps once every three months or for a subsample of 25 percent of

the respondents:

Now we would like to know if _____ took or left

any jobs in the past month. Did he

( )   start a new job?

( )   return to a job from which he had been laid off?

( )   quit a job?

( )   lose a job because of a layoff?

( )   have a temporary job come to an end?

( )   lose or leave a job for some other reason?

We recognize that this question would not enable researchers to reconstruct

the recent turnover histories of individual workers. Many people would fit

into two or even more categories. It is not practical, however, to ask a

battery of questions about turnover in the CPS. This simple question would

add a good deal to the potential scope of that research based on the public

use tapes from the CPS. Eventually, the results of this question would probably

form the basis of good cyclical indicators, comparable to the current

turnover data, but it would take some time for the new data to establish

a track record. The cost of adding this question to the CPS would not

be large, especially if it were part of a general streamlining of the CPS

questionnaire which probably is justified at this time in any case.

Our third proposal is to undertake a compilation of the data on new

claims for unemployment insurance. The existing highly aggregated data

on new claims show a close relationship to data on layoffs. Although the

information   collected by state employment departments contains much more

industrial and occupational detail, there is no existing program for com-

piling data at the national level except for the total count of new claims.

Again, this would require no expensive new survey and would yield a wealth

of information. It might be possible to produce timely, detailed reports
on flows out of jobs in this way, but it would be more difficult to get
information about flows into new jobs from this body of data.

None of these proposals provides up-to-date information about the
flows of workers into and out of jobs at the level of industrial and
geographical detail appropriate for guiding federal and state programs
operating in the labor market. Neither the year-old information form
from the LEED file nor timely but highly aggregated data from the CPS
will help in job placement or in channeling workers into the right CETA
or other training programs.

Conclusions and Recommendations

We propose the following comprehensive program for collecting data on labor turnover:

To meet the needs of national macroeconomic policy-making:

First, a question about turnover should be added to the Current

Population Survey each calendar quarter. Second, existing

state data on new claims for unemployment insurance should

be tabulated and published.

To meet the needs of scientific research on labor market issues:

First, answers to the question about turnover should be included

in the public use tape from the CPS. Second, tabulations of

social security records should be carried out and published

for detailed geographic and industry breakdowns.

To meet the needs of labor market programs:

For this purpose, something like the establishment survey proposed

by the BLS is required. Since this survey is several orders of

magnitude more expensive than any of our three proposals, we are

hesitant to endorse it. In view of the emphasis on local adminis-

tration of programs under CETA, we believe that a better alterna-

tive would be to make the services and expertise of the BLS

available to local agencies who see a need for detailed data on

turnover and vacancies.[7] Then the efforts in collecting the data

could be concentrated in areas where local programs planned to

make use of it. Budgetary support ought logically to be provided

through CETA rather than the BLS.

NOTES

[1]For a description of the program, see the <u>Handbook of Methods</u> of the

BLS (2). Much more detail appears in the <u>Labor Turnover Statistics</u>

<u>Manual</u> of the BLS (3).

[2]State of California, <u>Employment Service Potential</u> (13), p. **77**.

[3]<u>Labor Turnover Statistics Manual</u> (3), Appendix C.2, p. 114.

[4]<u>Employment Service Potential</u> (13), p. 56.

[5]<u>Employment Service Potential</u>, (13), Table A8, p. 174.

[6]See Cohen (4), Hanna (8), and Cohen and Schwartz (5) for further discussion

of these Employment Service Potential (ESP) experiments.

[7]See Bureau of Economic Analysis (1), for a description of this body of

data, with particular emphasis on the geographical dimension.

[8]For a somewhat skeptical view of the value of vacancy data, see

Robert E. Hall's comments on Harry Frumerman's paper on vacancies for

the National Commission on Employment and Unemployment Statistics.

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(2) Bureau of Labor Statistics, Dept. of Labor, Handbook of Methods.

(3) Dept. of Labor, Labor Turnover Statistics Manual, 1961, updated occasionally.

(4) Cohen, Malcolm S., "ESP: A New Source of Labor Market Information," Institute of Labor and Industrial Relations, University of Michigan, October 1978.

(5) Cohen, Malcolm S., and Arthur R. Schwartz, "Estimates of State New Hire Rates," University of Michigan, November 1978.

(6) Feldstein, Martin, "The Effect of Unemployment Insurance on Temporary Layoff Unemployment," American Economic Review, forthcoming.

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(12) Schultze, Charles, "Has the Phillips Curve Shifted? Some Additional Evidence," <u>Brookings Papers on Economic Activity</u>, No. 2, 1971.

(13) State of California, Employment Development Department, <u>Employment Service Potential</u>, September 1977.

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In their discussion of the measurement and significance of labor turnover information in the United States, Drs. Hall and Lilien place a heavy emphasis on the role of layoffs as a key indicator of economic performance and highlight a number of weaknesses in the existing surveys that measure turnover (again primarily layoffs). I would like to take this opportunity to expand on their analysis in three areas since their discussion does not give adequate attention to: (1) the significance of several other measures of turnover, namely new hires and quits, in tracking the performance of the economy; (2) the use of turnover data by business and industry; and (3) an immediate course of action that could help reduce some of the bias in measurement.

The Dynamics of Turnover in Measuring Labor Market Change

The current measurement of labor turnover by the Bureau of Labor Statistics (BLS) attempts to gauge the flow of workers in and out of job status of establishments during the calendar month. Workers gaining job status (accessions) are categorized as being hired to this position for the first time (new hires), being rehired to their original position after a period of layoff (recall), or being hired for any other reason (other accession) such as a transfer from one establishment of the same firm to another. Workers terminated from job status (separations) are categorized as being terminated on their own volition (quit), being terminated for at least a week because of an employer decision to cut payrolls (layoff), being permanently terminated by the employer with prejudice (discharge), or termination because of other reasons (other separations) usually a transfer to another establishment of the same company.

For the overall employment picture, accession rates and separation rates will map the aggregate change. If employment is increasing, accessions will exceed separations; for declining employment, separations will exceed accessions; and if employment is stable, accessions and separations will be equal. Accession rates by themselves are a gross measure of potential for employment growth. Rising accession

rates indicate expanded job potential either for workers called back from layoff or for workers recently hired for the first time by firms. Declining accessions indicate reductions in total hiring.

Rising or declining separation rates present an ambiguous picture of the labor market since the two major components--quits and layoffs--exhibit counteracting market forces. In a tight labor market with a high demand for skilled and semi-skilled workers, quits will be rising, reflecting the availability of more and more job opportunities. At the same time, layoffs rates will be declining as employers try to maintain their experienced work force. In a slack labor market layoffs will be increasing as employers reduce payrolls and quits will decline as job opportunities diminish. Hence movement in the separation rate will depend largely on the stronger of counteracting force, and as mentioned above tight labor markets are characterized by high quit rates and low layoff rates.

While comparisons of accessions and separations should track employment changes, they will not point to the source of the change. One needs to examine the components of each to determine the type of job demand being effected. A good illustration can be provided by following labor turnover actions over the course of a typical business cycle turn.

Labor Turnover Over the Business Cycle

The typical business cycle, as depicted in Figure 1, can be subdivided into four component parts: (A) a continuous expansion to the peak, (B) initial decline following peak, (C) continued decline to the trough, and (D) the recovery period.

Figure 1. Employment during the Business Cycle
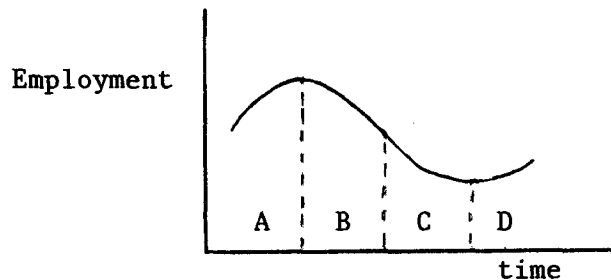
In a period of expansion (A), the layoff and recall rates will be at low levels with little tendency toward change. Quit and new hire rates tend to rise with new hires greater than quits. A number of new hires often occur as replacements for vacated jobs (quits and discharges). Thus, during an expansion the difference at the aggregate level between the new hire rate and rate of vacated jobs provides a crude measure of the rate of new job creation. As the economy reaches its peak the difference between new hires and vacated jobs disappears. In the early stages of decline (B), there is a cutback in production and the number of hours worked. Both quit and new hire rates decline with the drop in hiring more pronounced. The layoff rate begins to rise reflecting cutbacks in employment due to lack of new orders and inventory buildups. Recalls are unchanged at low levels.

In the latter stages of the downturn (C), the decline in new hire and quit rates tapers off and a situation again develops where hires are primarily replacements for needed positions that have been vacated. The rise in layoff rates levels off and begins to decline as employment adjustments are completed for production at lower output levels. As inventories dwindle some workers are called back to maintain inventories at minimum levels. During this process, layoff and recall rates flip flop as recalls rise and layoffs decline. Finally during the recovery stage (D) layoffs become somewhat stable at a low level. The recall rate continues to rise, at first, as workers are rehired to replenish inventories and begin production to fill new orders, but then declines as most of the previously laidoff workers return to their jobs. New hire rates rise while quits remain stable during the early stages of recovery. However, the quit rate begins to rise at the end of the recovery period. These characteristics are summarized in table 1.

Table 1.   Turnover Rates at Varying Stages of the Business Cycle

| Labor Turnover rate	Stage of Business Cycle			
	A	B	C	D
New Hires (NH)	rising	declining	low level unchanged	rising
Quits (Q)	rising	declining	low level unchanged	low level then rising
NH-(Q+D*)	>0	<0	0	>0
Layoffs (L)	low level unchanged	rising	declining	low level
Recalls (R)	low level unchanged	unchanged	rising	rises then falls
L-R	0	>0	varies	<0

*Discharges

Hence upswings in the business cycle (stages D and A) are accompanied by rising hire and quit rates, and the strength of the recovery or expansion can be measured by strength of net new hiring, i.e., new hires by firms over and above the replacement of vacated jobs (NH-(Q+D*) in table 1).   Downswings in the business cycle (stages B and C) are accompanied by differential movements in the layoff rate.   The difference between layoffs and recall rates provide indicators of the severity of the initial downturn (positive value for L-R) or the initial strength of the recovery (negative value for L-R).

Another point of significance among movements in turnover rates is the behavior of quits.   Workers quit their jobs either (1) to accept or look for another job or (2) to leave the labor force.   If we assume the rate of quitting to leave the labor force remains stable over short periods of time, i.e., one or two years, then changes in quit rates will essentially reflect changes in the availability of job opportunities. This will be in the form of perceived opportunities (workers who feel there are plenty of jobs available) and actual opportunities (workers who successfully change jobs).   In this sense changes in the quit rate measure, to some extent, changes in worker attitudes about the labor market.

In this regard quit rates can be used with layoff rates to measure the tightness of the labor market. For example, very low layoff rates with moderate quit rates would be indicative of a healthy, active economy where employer demand in the labor market is being adequately met. High quit rates and low layoff rates are indicative of a tight labor market where employer demand is straining the available supply. Figure 2 presents two possible equilibrium points in the labor market. The equilibria at A and B could both be characterized as points where

Figure 2. Hypothetical Labor Market

Wage rates

labor force

(skilled   and   semi-skilled)
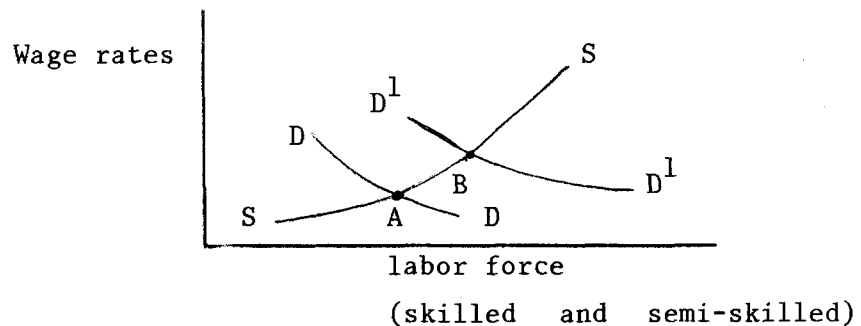
layoffs are low. Point A could be the equilibrium at the beginning of an economic expansion (start of stage D in Figure 1) where employer demand for labor is given by the curve DD. As the expansion continues and more new orders are received, employer demand could increase to D^1D^1. In moving from equilibrium point A to B the layoff rate at point B would not necessarily change for reasons cited above. However, as the supply of workers becomes increasingly short, employers will bid up wages which causes existing workers to become more mobile, particularly those in skilled and semi-skilled jobs. The result is higher quit rates. Therefore the movement to equilibrium at B results in a tighter labor market that is characterized by higher quit rates.

Finally, as the foregoing analysis indicates if labor turnover measures wre available for the whole economy, they would most likely perform as coincident indicators of economic activity. The fact that the current measures of accessions, new hires, quits and layoffs meet the criteria for leading indicators is because, in large part, they measure the employment changes in manufacturing industries also qualify as leading indicators. The fact is, all the labor turnover measures of

total employment would track the same as total employment with the possible exception of quit rates. This will occur because turnover measures the flow of workers through employer hiring and firing decisions which in the aggregate map the changes in employment. The reason quits might be an exception is that the decision to quit is one made by individual workers based on their perception of the labor market and not by employers in response to production schedules. It is possible that the quit rate series for all workers could be a leading indicator since it would be partially reflective of worker attitudes about the economy.

The Use of Labor Turnover by Business

Although not often discussed in papers and research on labor turnover, a major use of turnover information is to gauge the performance of individual plants to their industry as a whole or to other sectors of the economy. This is done because turnover is costly to businessmen. Most workers who quit must be replaced and there are substantial costs involved to recruit and train new employees. Even layoffs have a certain cost involved since excessive layoffs can cause the employer's unemployment insurance tax rate to rise. To the extent that such turnover is above (below) the average for industry, employers may be at a competitive disadvantage (advantage). In cases where turnover is deemed excessive by management, attempts may be made to reduce the rate of certain types of turnover to or below the average.

The Alternatives and a Proposal for Improvement

The alternatives presented by Hall and Lilien can help in securing additional needed information on turnover. The added question to the CPS will help analyze turnover for the entire economy. However, it appears that if it is asked quarterly, rather than monthly, it would not really provide the dynamics of labor market change needed by policymakers.

To meet the needs of labor market programs, it is true that an expanded (all industry) survey of establishments is needed. However, some improvements to the existing survey can be made quite readily that will reduce a major portion of the downward bias in the current

estimates. It is possible to stratify the estimating cells in the exsiting turnover survey by employment size class. This would help reduce the large firm bias. Secondly, monthly surveys of new firms registering with State Employment Security agencies could be conducted to secure employment and labor turnover information for other firms in the initial stages of doing business. This would also aid in resolving a related problem in the Current Employment Statistics program. These latter improvements could be started with the manufacturing sector and continued as the survey was expanded. However, as the authors indicate, such an expansion and improvement will be considerably more costly.

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Professors Hall and Lilien's paper is based on a substantial amount of experience with and research into the importance and measurement of labor turnover in the U.S. economy. Consequently their analyses and recommendations are likely to receive the approval of most researchers in the area of labor turnover. The comments presented below are thus intended not as criticisms but as elaborations and clarifications of their basic approach.

Hall and Lilien make three basic points: First, labor turnover is an important phenomenon in modern economies. Second, the currently available turnover data, based on a BLS survey of establishments, are seriously deficient. Moreover, the authors do not attach great importance to the proposed enlargement and improvement of the BLS data. Third, considerable emphasis should be placed in utilizing administrative rather than survey data for the development of data turnover statistics. An example of such administrative data is the set of records kept by the Social Security Administration. The following comments are addressed to the above three points.

1. The Importance of Labor Turnover

Although Hall and Lilien's discussion of the importance of labor turnover is somewhat selective and based on their own recent research interests, their message should be endorsed wholeheartedly. While standard textbooks in economics rarely mention labor turnover, economists - both policy makers and researchers - have recently become acutely aware of its importance in modern economies. Good labor turnover statistics are essential for (i) the conduct of both short- and long-run macroeconomic policy, (ii) the evaluation of manpower programs and (iii) research leading to a full understanding of the workings of

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the labor market.

It would appear that labor turnover data have in the past been assigned relatively low priorities by the data gathering agencies, especially in comparison with employment and unemployment statistics. This relative imbalance in priorities ought to be corrected.

2. The BLS Turnover Data

Hall and Lilien emphasize the shortcomings of the BLS turnover data. Further, they do not make any substantial suggestions for their improvement. The general impression conveyed by their paper is that the BLS data are almost irreparably deficient and, in any case, far more expensive to collect than alternative labor turnover statistics. The following comments are designed to counter, to some extent, these negative views on the BLS data and to highlight some of their advantages.

The BLS data are the only long monthly time series of labor turnover which are currently available. For two- and some three- and four-digit manufacturing industries, the series start in 1958. Moreover, data, by state and area can be obtained from the BLS. Furthermore, six turnover series (accessions, new hires, recalls, separations, layoffs and quits) are currently published on a consistent basis. Another advantage of these data is their relatively short publications lag. In other words, this data set is quite unique and none of the alternatives suggested by Hall and Lilien are superior to it in all respects.

The important shortcomings of the BLS data refer to the limited coverage and to the internal inconsistencies in the data. How might these shortcomings be removed at a cost which is not prohibitive?

The BLS establishment data are derived from two monthly surveys: the Report on Employment, Payroll and Hours (Form BLS 790) and the Monthly Report on Labor Turnover (Form BLS 1219). In terms of number of employees the employment survey is about three times larger than the turnover survey. The difference arises primarily from industrial coverage. Thus while the turnover survey is confined to Manufacturing, Mining and Telephone Communication, the employment survey covers, in addition, Wholesale and Retail Trade, Finance, ect., Services and

Government. The survey forms are sent at different times of the month. The Report on Employment refers to data in the week of the 12th of the month while the Monthly Report on Labor Turnover refers to the entire calendar month. Consequently the employment data for a particular month can be published before the turnover data. Further, in large firms, the payroll department responds to the employment survey and the personnel department to the turnover survey. Both surveys request information on one item, namely employment, and discrepancies between the two responses occur quite frequently.

It would appear that the two major shortcomings of the turnover data (inadequate coverage and internal inconsistencies) could be remedied, at least partially, by combining the two BLS surveys. Suppose firms were sent both the employment and the turnover survey forms on the 20th of the current month, the first requesting employment data for the week of the 12th and the second requesting turnover data for the previous month. This procedure would have the following advantages: First, the tunover sample could be enlarged substantially. Second, the turnover and employment data would be combined at the microeconomic level. This would facilitate the removal of inconsistencies in the data. Third, by eliminating the need for two separate survey forms an increase in the coverage for the turnover data can probably be achieved at a relatively low marginal cost. Fourth, some firms may resent the fact that they are asked for the same information (employment) in two different surveys. By combining the two surveys this duplication can be avoided and an increased degree of voluntary cooperation by private industry might be attained. This point may be especially important in view of the current public sentiment against duplication and inefficiency in information gathering government agencies. These arguments suggest strongly that a persuasive case can be made for merging the two establishment surveys currently conducted by the BLS.

In addition to merging the two establishment surveys, the BLS can and should improve the usefulness of its past and present turnover data in the following manner. The employment records should be matched with the turnover records at the establishment level and then linked over time to yield consistent time series for several years of all the collected data at the establishment level. These longitudinal micro data

should be made available for public use. Such a data set would enable researchers to study labor turnover at the micro level as well as to investigate the inconsistencies in the data mentioned by Hall and Lilien. For instance, their proposition that accessions are understated because new firms are ignored can easily be tested with such data. Moreover, the technical problems involved in constructing the files of longitudinal microdata can be overcome fairly easily and the costs should be low relative to the total social cost of conducting the two surveys.

3. Adminsitrative vs. Survey Data

Over the last few decades several social and labor market programs have been enacted which require for their efficient administration the collection and maintenance of large sets of data. For instance, the Social Security Administration must maintain earnings records of workers for the determination of social security benefits and similar requirements apply to the unemployment insurance system. In view of the rapid development of electronic devices these large data sets can be manipulated and stored comparatively inexpensively. It is, therefore, reasonable to suggest, as Hall and Lilien have done, that administrative data should be developed to complement and possibly to supplant some of the conventional survey data. Hall and Lilien suggest, in particular, that the Social Security LEED file be used to provide labor turnover information in great industrial and geographical detail.

Since administrative records are maintained primarily for the operation of particular programs, their suitability for research and policy purposes may be quite limited. Thus, although the LEED file has been used most ingeniously by, for instance, Jacobson [1,2], it has three basic shortcomings: First, only total accessions and separations can be identified. Second, quarterly data can be computed only on very restrictive assumptions. Third, the publication lag is likely to be several years. Nevertheless, the relatively low cost of processing the LEED file makes it an attractive data set.

There is one administrative data set which Hall and Lilien do not mention but which promises to be substantially superior to the LEED file. This set consists of the Continuous Wage and Benefit History

(CWBH) data files which have been and are being maintained by many state unemployment insurance agencies with the support from the Federal government.

Public use files of CWBH data are already available for two states, namely Arizona and Pennsylvania. For a description of these files, see Jacobson and Classen [3,4]. Moreover, the Federal Unemployment Insurance Service has contracted with fourteen states to provide CWBH data. A description and discussion of these files is given in the UIS manual [6] and in Skees [5]. In brief, the CWBH data refer to a sample of individual workers who are covered by unemployment insurance. (Coverage is now virtually universal). The following data in the CWBH files are relevant for labor turnover.

First, there is a quarterly longitudinal history of a worker's total (and not just taxable) earnings and employer affiliation, together with the employer's identification, industry and other economic variables.

Second, there are monthly reports on workers who are in the above quarterly file and claim unemployment insurance. These files contain a wealth of information on personal characteristics (address, age, sex, marital status, schooling, ethnic group, household income, spouse's participation, number of dependents, occupations, etc.), and on the details of the job separation (layoff, quit, etc.).

The CWBH data files will thus be extremely valuable for the analysis of labor turnover as well as many other labor market phenomena. The CWBH data are likely to be superior in almost every respect to the LEED data and, in any case, social security data can be obtained for the workers in the CWBH sample and the two can be merged. The CWBH program promises to generate a vastly superior set of statistics and, hence, it should be assigned a top priority.

4. Summary and Proposals

Although conventional economic theory contains no or at best only a few references to labor turnover, labor economists have recently become aware that labor turnover is an important aspect of the allocation of labor. Consequently good turnover statistics are most important for (i) the conduct of macroeconomic policy, (ii) the evaluation of manpower

programs and (iii) research into the working of the labor market. The most comprehensive set of labor turnover data currently available are the BLS series which are derived from a survey of establishments in Manufacturing, Mining and Telecommunication. Two serious shortcomings of this data set are incomplete coverage and certain internal inconsistencies (described by Hall and Lilien).

Hall and Lilien do not make any substantive proposals for the improvement of the BLS establishment turnover data. Their only proposal in this respect refers to the secondary question of which government department should pay for the improvements. Since this data set is quite unique and contains important information not otherwise available and since it is unlikely to be supplanted by better statistics in the near future, the following two proposals are made for their improvement:

Proposal 1:   The BLS "Monthly Report on Labor Turnover" survey should be merged with the other establishment survey, the "Report on Employment, Payroll and Hours." Such a merger would increase the coverage of the labor turnover data; it would reduce the number of monthly forms sent to many manufacturing establishments from two to one; it would eliminate the duplication of data collection for employment; and it would result in one compact data file containing all the data currently collected from establishments.

Proposal 2   The BLS should merge their existing turnover data with the employment, payroll and hours data at the establishment level and, then produce time series of all the data including the two numbers for employment) for individual establishments. These files should be made available for public use. They would enable researchers to investigate many labor market phenomena as well as to discover the causes of the inconsistencies in the labor turnover data.

In recent years some administrative data sets have become available which can be processed to yield valuable information on labor turnover and other labor market phenomena. Two of Hall and Lilien's proposals are related to administrative records: The social security LEED file should be used to generate turnover data with great geographical and industrial detail and the unemployment insurance system should be asked to compile tabulations of data on new claims for unemployment compensation.

Hall and Lilien do not mention a most important set of administrative records which have been and are being processed to yield a Continuous Wage and Benefit History (CWBH) for workers covered by unemployment insurance. The CWBH data seem to be superior to any other set of administrative data. Consequently, the third proposal is:

Proposal 3   The Federal Unemployment Insurance Service should obtain all existing state CWBH data sets, process them, and make them available for public use. Further, the Service should be asked and empowered to extend the CWBH system to as many states as possible and at the greatest possible speed. This data system promises to be the best that can currently be produced from administrative data.

The above three proposals should not be regarded as substitutes for but as complements to the proposals made by Hall and Lilien. Proposal 2 above as well as all of Hall and Lilien's proposals are short-run in nature and can be implemented at relatively little cost. The implementation of proposals 1 and 3, on the other hand, is likely to take some time and may involve heavy setup costs. But, in the long-run, their operating costs are not likely to be very high. In any case, the improvement in the data from proposals 1 and 3 would be substantial.

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2. Jacobson, Louis S.: "An Alternative Explanation of the Cyclical Pattern of Quits," Professional Paper 233, Public Research Institute, Center for Naval Analyses, November 1978.

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