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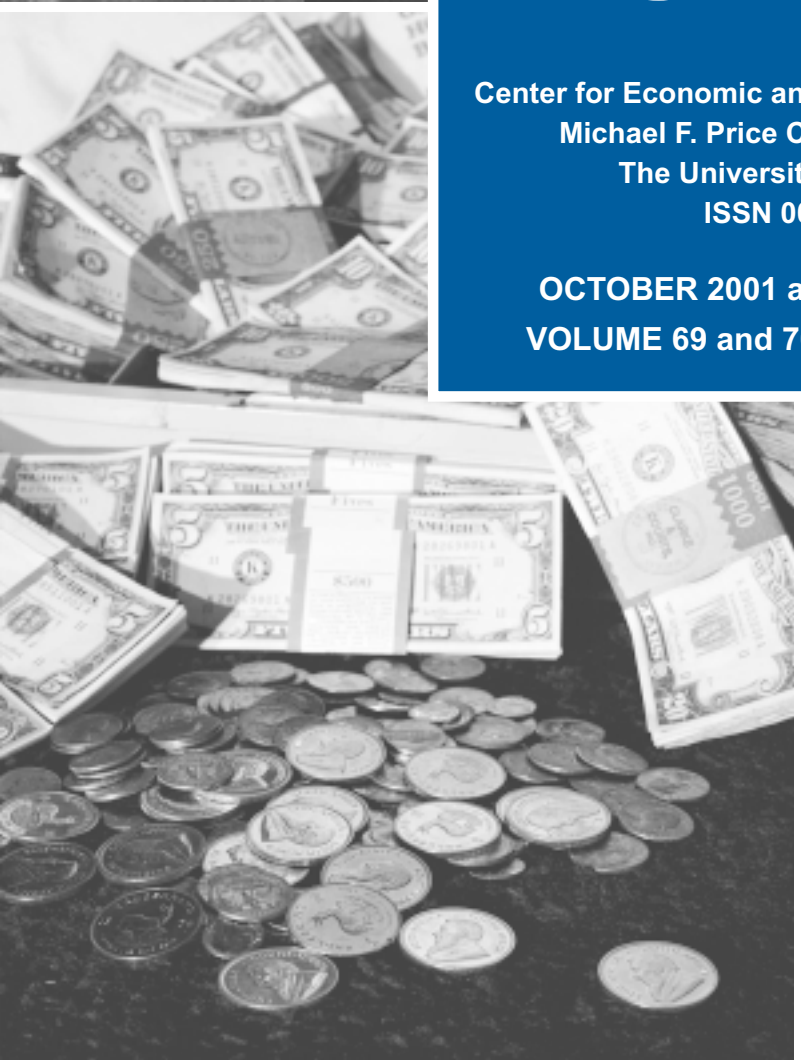

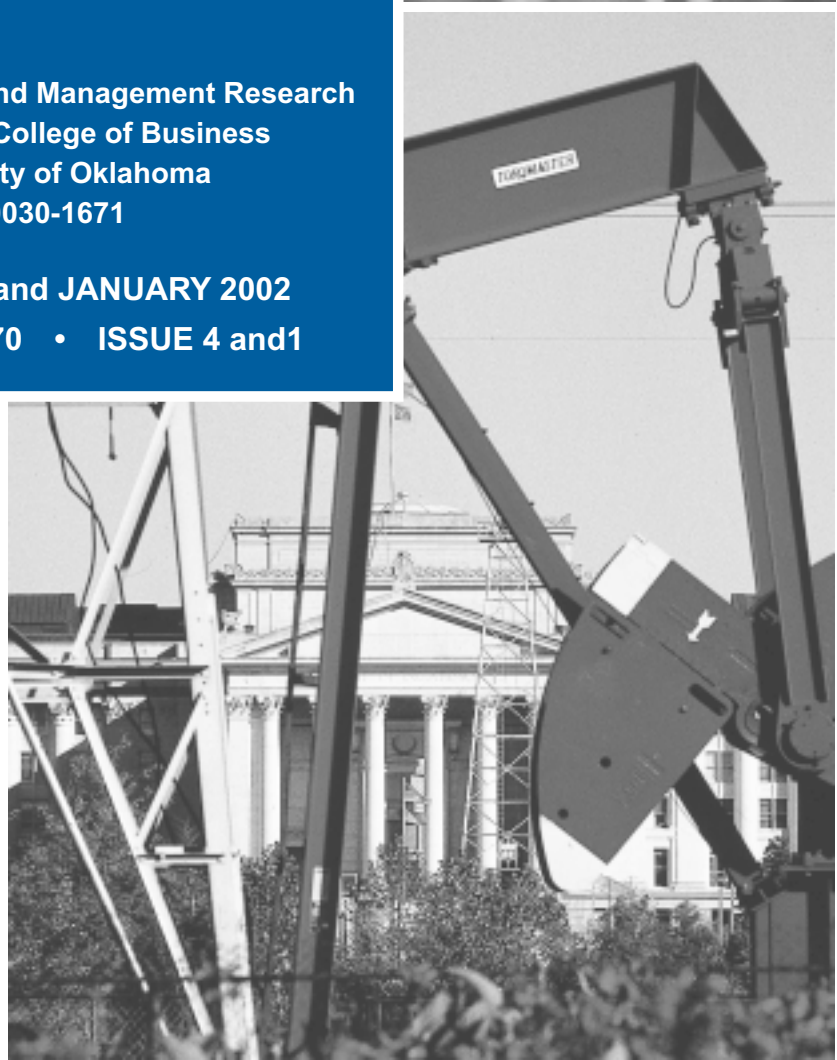

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Manuscripts for consideration should be typed, double-spaced, and submitted in duplicate. Each submitted manuscript is reviewed by at least two members of the Editorial Review Board and a decision is usually reached in four to six weeks.

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ANNOUNCING

The Dikeman Honorarium

In recognition of 40 years of service to the people of Oklahoma, the Center for Economic and Management Research in OU's Price College of Business is proud to announce the Neil J. Dikeman, Jr. Honorarium. The purpose of this honorarium is to stimulate research on the Oklahoma economy, inform citizens, and guide public policy. For each paper accepted for publication in the *Oklahoma Business Bulletin*, $500 will be provided to the author or authors of the paper. Recipients have two options: personal or institutional payment. The authors may designate that the award be paid to an institution in support of the research missions. In the latter case, the award is non-taxable. Also an additional $1000 will be awarded to the paper judged by the editors as the best paper published in an academic year. Student involvement and co-authorship in publications is encouraged.

CEMR is proud to announce that the first recipients of the Dikeman Honorarium are Robert Henry Cox and Christian Breunig for their fine paper entitled "How Global is the Oklahoma Economy?" This paper was published in the April/July 2000 issue of the *Bulletin*. The award is small recognition for a job well done.

A wide variety of economic subject areas will be considered for publication in the *Bulletin*. Articles should be related to economic and business activity or public policy in the State of Oklahoma, but can include regional comparisons. Example topics include:

- Labor force trends and workforce development issues
- Future education demands, potential patterns and opportunities
- Population change and migration patterns
- High technology growth in Oklahoma
- Transportation problems and priorities
- Intra- and inter-state economic trends and forecasts
- Poverty in Oklahoma, its changing character
- Fiscal trends in Oklahoma—How long will the good times last?
- Personal income growth deficiencies, causes and solutions
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- The effectiveness of local development programs in stimulating regional growth
- Health care in Oklahoma—How well are workers and their families covered?

The above are meant to be simply illustrative of the variety of subject matter that is considered relevant to the goals of the Dikeman Honorarium. We encourage you to submit your research to the *Bulletin*, which is in its 72nd year of publication. Please send papers to:

Patricia Wickham
Center for Economic and Management Research
Price College of Business
307 W. Brooks, Room 4
Norman, OK 73019-0450

Thank you.

Michael F. PRICE College of Business

The Center for Economic and Management Research

Business Highlights

by Robert C. Dauffenbach

Outlook for the Economy: Turbulence Ahead

As we are set to enter the year 2002, economic circumstances appear to be grim. Headlines blare with state budget shortfalls, expanding layoffs, rising unemployment, loss in Oklahoma of historic corporate headquarters, low energy prices, declining corporate earnings, congressional stalemate on the fiscal stimulus package, and increasing federal government and international trade deficits. Definitely not in the Christmas spirit, the economic news these days.

That we are in a recession is now official, as of November 26, 2001. Conditions have been designated as recessionary by economists at the National Bureau of Economic Research, the deliberative body on such matters. The start date was determined to be March 2001. Curiously, the NBER states that had it not been for the tragedy of September 11th, the US economy may have avoided recession. But because of that dastardly act, the recession began six-months earlier. While this reasoning may seem somewhat strange, remember that recession dating is done only after the fact, both for the start and end. March has been analyzed to be the month of peak economic activity. The low point, or trough, of the recession will not be known for some time, too, because of data and analysis lags. In this context, the March starting date makes more sense.

Essence of Outlook

The essence of my view of 2002 is one of increasing volatility for the national economy. Turbulent times lie ahead. The argument rests on the uniqueness of circumstances that contribute to our current malaise. We are in a recession like no other we have experienced in the last 40 years. Never before have we experienced a recession when the real growth rate of the money supply has been so consistently high. Never before have we witnessed such dramatic decreases in real interest rates. Since January of this year, the Fed has lowered interest rates 11 times for a total of 475 basis points (4.75 percent). The Federal Funds Rate is now by almost a full percentage point lower than the rate of inflation. Indicative of Fed aggressiveness, many short-term interest rates are as low or lower than the inflation rate. Never before have we had a recession in the midst of a financial bubble. Stock prices are still historically high in relation to earnings. Never before have we had a recession with inflation so muted. We are, in essence, in uncharted, turbulent, waters.

A Recession Like No Other

This is a recession like no other, largely from the context of the growth rate of the real, inflation-adjusted, money supply. Figure A illustrates the uniqueness of present circumstances. Typically, recessions begin with the Fed fighting inflation, leaning heavily on financial markets, selling government bonds through open market operations, reducing bank reserves, raising interest rates, and slowing economic activity. Growth rates of the real money supply typically fall below zero in such periods of recession. If the Fed has difficulty in restarting the economy after such periods of economic contraction,

the growth rate of the real money supply can stay negative for a substantial period, as in the 1990-91 recession.

Figure A shows the growth rate of the real money supply, standard M2 definition, from 1959 through the third quarter of 2001. All major recessions are vividly reflected in this graphic as periods of negative growth, save for the present recession. We find the nation in a unique situation of having a recession begin when the real money supply was growing in real terms, year-over-year, at four percent and much higher rates. Indeed, the annualized quarter-to-quarter growth rate of M2, in real terms, is now a sizable 10 percent. Since the first quarter of 1995, real M2 has increased by $1.3 Trillion, or 37 percent. The broader measure of money, M3, has expanded by $2.6 Trillion, or 58 percent.

The economy is awash in liquidity. Money is readily available for all who want to borrow. And, herein lies a three-fold problem. Problem 1: Corporations have considerable excess capacity. Why borrow to build more plant and equipment when your current plant and equipment is being underutilized? Problem 2: Many who are borrowing are not borrowing to buy new goods and services. Refinancing old mortgages adds little to GDP. Thus, the funds are being utilized, in large measure, for debt conversion, not for new purchases. Consumers are also borrowing on equity to pay off credit card debt, an act advisable for reducing interest charges, if inadvisable in putting one's home at risk. Problem 3: While the Fed may be successful in rescuing the economy from this slump in the near term, in the intermediate term, once the economy starts to recover, they will have to seek to withdraw this excess liquidity before it turns into inflation. The risk of turbulence and relapse is substantial.

Causal Forces

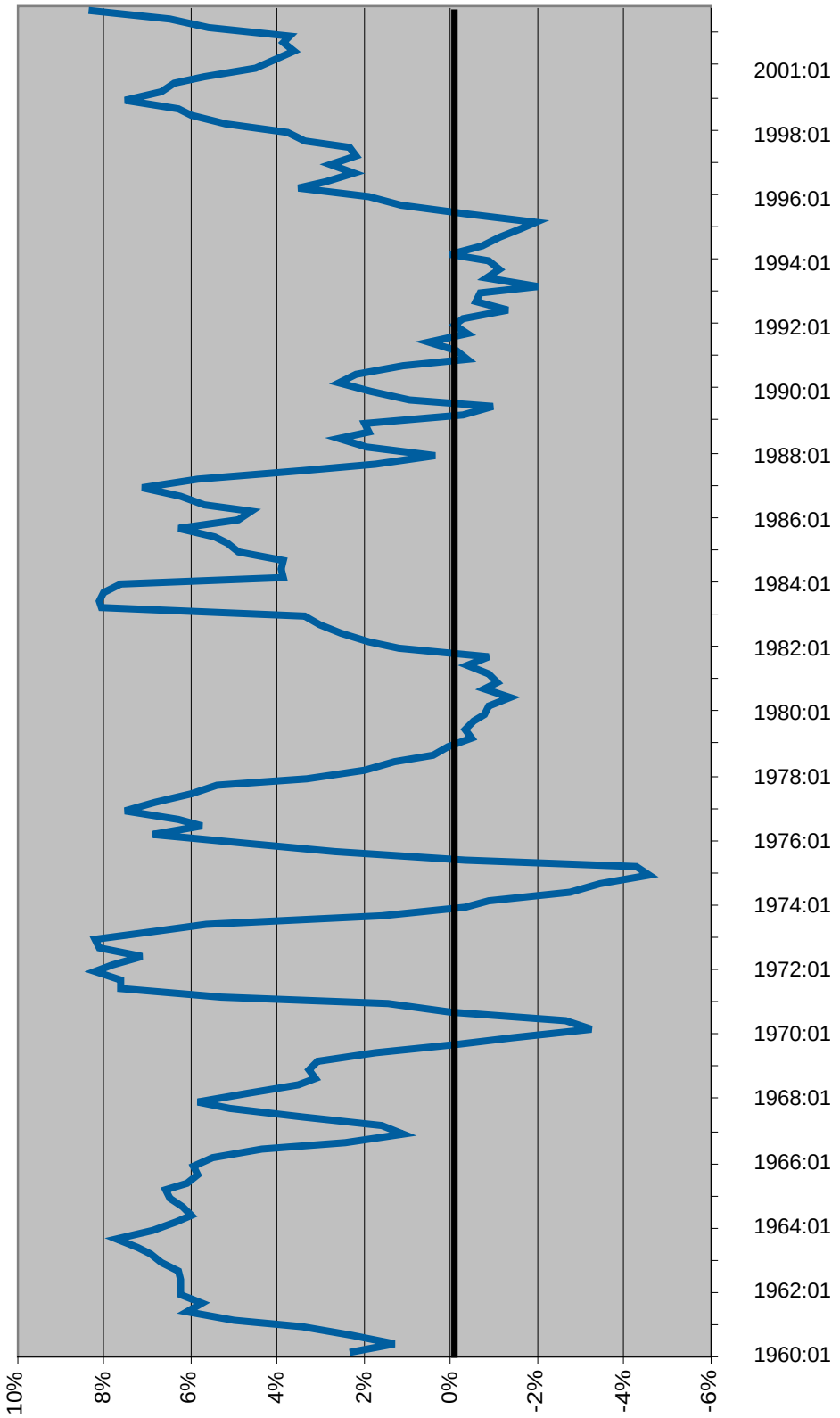
What got us into this mess? Remember Y2K, that non-event, January 1, 2000? It wasn't a non-event for the economy prior to that time, however. Corporations, government institutions, and small businesses turned January 1, 2000 into a non-event by buying new information technology equipment in 1998 and 1999. Earnings looked great, and they were great for technology companies in those years. A stock market bubble occurred, particularly for tech laden NASDAQ stocks, with that index tripling in a two-year period ending March 2000.

The Fed, in this person's opinion, was complicit in the bubble. Chairman Greenspan's irrational exuberance speech was in December 1996 when the NASDAQ was approximately 1300, one-fourth its ultimate high. Instead of conducting monetary policy in a manner to inhibit such irrationality, or by using instruments such as stock margin requirements to constrain speculation, the Fed expanded the money supply, in real terms at rates to this observer that seem excessive. Beginning in 1997 we started seeing real growth rates in M2 in the 5-10 percent range. Then there was the Asian financial crisis in 1998 and the Long-Term Capital Management bailout, with attendant Fed injections of bank reserves. Additional liquidity injections were made in late 1999, in case Y2K turned out to be a real problem. This liquidity was then withdrawn in early 2000, just at a time when corporate technology spending was collapsing. Ultimately the tail (the stock market) was beginning to wag the dog (the economy). The Fed protests that it is not targeting stock prices, but its policy pursuits, especially its three emergency rate reductions in times when the stock market weakens, argue otherwise. Then there was that infamous day of September 11th. The Fed, with little dry powder remaining, was forced into action again.

Bubble of Hope

Financial bubbles seldom have good endings, and we in Oklahoma, more than the citizens of most states, understand something about bubbles and their aftermath. Already it is apparent that the stock market bubble is not having a good ending, but it may not get much worse. It is a fact that inflation is not a problem in the current economy, and that fact is providing considerable wiggle-room for the Fed to aggressively expand the money supply. It may not be a totally new era for the economy, but the fact is that information age is leading to rapid growth of productivity, which lowers costs and inhibits the return of inflation.

Figure A. Yr/Yr Percent Change in Real M2 Money Supply
1959:1-2001:3--Billions of 1996 $



The fact is that the Fed, by historical standards, has been extremely aggressive in expansion of the money supply; but this fact will ultimately cushion the magnitude of the recession and hasten the day of recovery. Once the bubble got out of hand, the Fed may have had little choice but to play along, hoping not to encourage the moral hazard of greater speculative activity through its actions, hoping that earnings would catch up with stock prices. The events of September 11th certainly provided a clarion call for Fed action. Keeping the consumer in the game has distinctly been a goal of monetary policy, especially since September 11th, and along that front, the game seems to be won. As consumers, we love to spend. That is one fact upon which we can continue to rely.

Outlook for 2002

The Price College Indicators, developed at the University of Oklahoma Center for Economic and Management Research, were designed to provide leading indicators of economic activity for the nation, the state, and the two major metropolitan areas of Oklahoma. The indicators have been scaled so that a value of 50 signifies continuation of present trends while values greater or lower than 50 are associated with rising or falling trend rates of growth. The indicators also serve as instruments for producing forecasts. They have successfully foreshadowed every major national recession in the last 40 years.

The Indicators successfully foreshadowed the current recession. The indicator for national employment started falling off sharply in December 2000 at 45, dropping to 26 by June, and presently standing at 30 in October. For inflation nationally, the indicator fell off sharply in February 2001 at 44 and continues to decline at 33 in the most recent readings. For Oklahoma employment, the indicator began to fall sharply in December 2000 all the way to 13 in September, for which there has yet to be recovery in October data. For Oklahoma City, the indicator fell to the level of 15, a sharp decline, indeed, where it remains in October data. The indicator for Tulsa now stands at 20, and is showing signs of bottoming. The metro areas, with their higher concentration of manufacturing, have been disproportionately affected.

Employment nationally is now showing essentially no growth over the previous year. Only 0.9 percent growth is forecast for 2002, followed by 1.5 percent growth in 2003. Inflation is expected to decline to the 1.5 percent level in 2002, rising to 2.0 percent in 2003. The state enjoyed a 1.4 percent growth rate in employment in 2001, but only a 9,000 (0.6 percent) increase is expected in 2002, followed by a 31,000 (2.1 percent) gain in 2003. Oklahoma City may actually lose some jobs in 2002, but these losses should be minor. A gain of 8,000 jobs is presently anticipated for 2003. Tulsa is expected to have a minor employment gain in 2002 and a 10,000 (2.5 percent) gain in 2003.

The major risk to the forecast, particularly the upturn in 2003, is a slowing of productivity growth nationally, an acceleration of inflation, and rapid and sizable withdrawal of liquidity from financial markets by the Fed. This is not a small risk, in my estimation, given the size of Fed liquidity injections in recent years. There is hope from past experience that by the time the recession is actually called, it is close to its end. We have yet to see much in the way of recovery in the Price College Indicators. But, there is about a two-month data lag. So, recovery may be in the offing. But, as experience shows from the 1990-91 recession, even though signs of recovery may materialize, employment and income gains may be slow to follow. Oklahoma is been historically slow to show the impact of national recessions, and slow to recover. Unfortunately, that fact does not bode well for immediate future.

Robert C. Dauffenbach is Director for the Center for Economic and Management Research.

The Daunting Task of Motivating Information Technology (IT) Professionals

by M. Ronald Buckley, Jenia Nikolova, Jonathon, R.B. Halbesleben, Anthony R. Wheeler and Joseph M. Stauffer

There has been tremendous growth in the use of and dependence upon information technol ogy (IT) in business in Oklahoma. Information technology and its impact on the conduct of business extends well beyond its hardware, software, and systems. It often brings with it a different breed of employee and, all too often, changes in an organization's climate and culture. One of the major problems facing managers is how to adapt their management styles to fit the demands of this new breed of employee. Of particular interest is the fundamental question of what motivates these employees. We attempt to provide a framework for motivation of information technology professionals.

> *One might say that there are as many ways of motivating people as there are people to be motivated - and one would be supremely conservative in so-saying.*

Motivation is an area of psychology that is concerned with explaining why people behave in a certain way. The study of motivation examines two aspects of human behavior: first, what causes specific actions and, second, what is the intensity/ strength of a particular behavior. The complexity of motivation is reflected in the fact that we all have personal differences/needs in terms of motivation in organizations. In addition, the size, shape, and type of the organizations further influences the number of motivational tools available and the possibilities of their implementation in organizations.

Motivation is one of the primary concerns and challenges faced by managers. To be motivated and productive, employees must have a high degree of interest in their jobs and derive a large amount of satisfaction from them. Moreover, they must feel that the incentives offered are reasonable and that they are treated fairly, humanely, and with dignity by management.

The issue of motivational effectiveness becomes even more complex in the Information Technology (IT) field. As the computer industry matures, some of the things that used to provide intrinsic motivation are no longer present. In the past, individuals with computer skills were scarce and earned high salaries and rapid promotions. Today, with growth stabilizing in the information industry, salary increases are moderating, promotions come more slowly, and the turnover of IT staff makes personnel management of IT professionals quite difficult. Therefore, effective management is becoming increasingly important to the success of both the IT professional and the information - dependent organization.

Most literature on motivation focuses on how to "psyche up" employees, i.e. how to motivate them externally. Yet, the results of a study of 1,800 analysts and programmers performed by Couger (1988), showed that the number one motivating factor for the IT personnel is the work itself. Therefore, an effective way to motivate and retain the IT staff is to concentrate on improving the IT jobs. This refers to the jobs of both the project managers and the support personnel. Job enhancement for project managers is usually not that difficult, because these people tend to participate in the most interesting assignments anyway. It is the needs of the support staff that makes this task complex. This part of the IT department is usually called "an uninteresting, necessary evil", because on the one hand, the monotonous nature of the work is the etiology of

many behavioral problems in an organization, and on the other hand, it consumes more than 50% of the labor budget for most IT departments today. Moreover, this percentage is growing with the number of new applications implemented by the company.

Some organizations have tried to cope with this issue by inventing new names for this kind of job, but it did not motivate support workers for long, because the work itself did not change. Others (IBM, Standard Oil) have tried to find a solution using the core job theory of motivation. Hackman and Oldham (1976) posited that the existence of three "critical psychological states" in a job lead to low absenteeism and turnover, high internal motivation, high job satisfaction and quality of performance. These three states were defined as:

- *Experienced meaningfulness.* Individuals must perceive their work as worthwhile or important by some system of values they accept.
- *Experienced responsibility.* Individuals must believe that they personally are accountable for the outcomes of their efforts.
- *Knowledge of results.* Individuals must be able to determine on some fairly regular basis whether the outcome of their work is satisfactory.

When these factors exist, people tend to feel good and they perform well. In addition, these factors motivate them to continue to perform well by creating "internal motivation", i.e. not based on external factors, such as different incentives.

- *Skill variety.* This is the degree to which a job requires a variety of different activities and skills, and uses a number of different talents of the employees. For example, management can assign a variety of tasks, where use of skills is constrained by the design of the system being maintained.
- *Task identity.* This is the degree to which the job requires the completion of a "whole" and "identifiable" piece of work, i.e. doing the job from the beginning to the end with a visible outcome. Routine work can result in passivity and boredom, unless the staff is aware of how the routine tasks contribute to its own development and to the success of the organization. Pointing out how employees' tasks "fit into the picture" can dramatically increase job satisfaction and productivity. For example, a manager can explain how the modules being maintained relate to the system as a whole and how that system relates to the company's set of systems. Furthermore, an assignment should include the possibility to complete the whole task, i.e. from user interaction to the invention of workable code.
- *Task significance.* This is the degree to which the job has a substantial impact on the lives or work of other people, either in the organization, or in the external environment. For example, management can provide support personnel with the opportunity to work directly with users in order to recognize the importance of their work.
- *Autonomy.* This is the degree to which a job provides substantial freedom, independence, and discretion to the employee in scheduling his/her work and in determining the procedures to be used in performing it. Employees should be given the freedom to make decisions - particularly when they affect them in some way, because the personal commitment that results is very essential to motivation. For example, an IT manger can set goals with the personnel and then allow people to accomplish their work without close supervision.
- *Feedback from the job itself.* Finally, this is the degree to which carrying out the work activities required by the job results in the employee obtaining information about the effectiveness of his/her performance. Feedback is most effective when it follows performance. It should both be positive and negative, relevant to the task, and indicative as to how employees might improve their work. For example, an organization might establish mechanisms for enabling employees to track their progress.

These aspects of the job were found to be the most important for motivating IT workers. The first three contribute to the employee's feeling of meaningfulness from work. The fourth leads to responsibility for the outcomes, and the fifth brings the knowledge of the actual results of the efforts.

So, the question now is: "What can the IT manager do to improve IT jobs, keeping in mind that job quality is so important?" The answer in most cases is: "work redesign". According to Hackman and Oldham (1976) "work redesign" can help individuals regain the satisfaction that comes from doing the job well. It even encourages them to care enough about their work and develop the competence to do their work even better. What management and researchers usually mean when talking about work redesign is "job enrichment" and "job enlargement". Job enrichment refers to a planned change of job content to provide the person with a greater variety of work requiring higher level of knowledge and skills. This generally gives the opportunity for personal growth and development, as one is encouraged to participate in the planning, organizing, and controlling of the work as contrasted with only doing the work. Job enlargement refers to giving the employee a greater variety of work, for example by job rotation, without increasing the need for a higher level of knowledge and skills. Job enlargement deals with the horizontal aspects of the job, rather than concentrating on its autonomy or its responsibility dimensions. If sufficiently widespread, it can further strengthen interdepartmental understanding both through shared experiences and personal linkages.

The diverse job requirements of IT personnel raise the question whether IT people are different from non-IT people and whether they should be managed differently. In review of this interesting topic, a number of researchers suggest that IT personnel are different in at least two aspects:

First, IT professionals and managers have lower social needs than non-IT individuals, i.e. they may not seek social interaction if left on their own and most of the time they let others initiate the contact. This is explained by the fact that programmers can do their job without much interaction with others and therefore need far less verbal communication skills. However, if they advance in the company and go from programming to analysis and then to management they tend to carry their low social needs with them up the career path. This might be a problem, having in mind the constant interaction of IT managers with people from the other departments and often form other organizations.

Second, IT professionals have higher need of achievement than people with some other occupation. The need of achievement includes simulating and challenging work, and the possibility to think and act independently while working.

The IT field attracts people with the highest growth need of all 500 occupations measured and they have the lowest need for social interaction. The study helps form the profile of a typical IT professional using the McClelland (1987) theory of motivation. In his research on what really stimulates employee behavior, McClelland proposes that there are three main factors:

- *Affiliation.* This is essentially the same as social needs. It represents a need for establishing, maintaining or restoring a positive friendly relationship with peers and colleagues. Peer acceptance is perceived as more important than managerial rewards.
- *Power:* This is the desire to influence and control others. People in that group have high needs for accomplishment through others and strong desire for recognition. They are risk-takers and readily respond to competition.
- *Achievement.* These people are driven by the desire to accomplish a worthwhile activity. McClellland suggests that they should be given moderately difficult goals, the responsibility to accomplish those goals, and the freedom to do it their way.

A survey reported by Couger (1988) suggests that the majority of IT people fall into the achievement profile. This basically means that: IT professionals are evaluators who take calculated risk. They prefer moderately difficult challenges and work harder on their tasks. Management should give them clear objectives, accurate feedback on task difficulty, and a lot of challenge.

- *IT professionals work hardest for personal achievement, or when their efforts will make a difference in the outcome.* They tend not to be particularly motivated by routine tasks. They are goal setters and are ready to take responsibility for the outcomes. Management should use a reward system that rewards individual contribution.

- *IT professionals need accurate feedback on their performance.* It should be based on results rather than procedures and relationships.
- *IT professionals tend to perceive their probability of success as high and rely on facts with a generalized optimism but often become more accurate with practice.* Management has to ensure adequate knowledge of employees' progress through a good feedback system.
- *IT professionals derive satisfaction from having initiated an action that is successful.* They praise freedom and independence and do not perceive well suggestions and directions about what they should think or do.
- *IT professionals believe that payment for difficult tasks should increase rapidly.* Pay recognition for skills and performance is an important success measure for them.
- *IT professionals usually value experts over friends.* Both expert power and expertise are necessary in establishing managerial authority over such employees.
- *IT professionals tend to avoid leadership.* They feel very uncomfortable making hard decisions that might eventually lead to alienation.
- *IT professionals lack discipline and organization, but usually tend to avoid conflict with others.* They consciously cope with difficult interpersonal problems. The establishment of good organizational structure is necessary in order to manage them effectively.

All these traits make managers and researchers wonder and argue whether IT people should be motivated and managed differently from non-IT people. For example, if managers of IT departments, composed of both IT and non-IT personnel, know that working with others motivates productive work behavior for non-IT people, but does not for IT people, they may choose to structure tasks such that non-IT people have considerable interaction, while restricting the interaction with and among IT people. Furthermore, management would have to come up with different motivational tools for the two different groups of employees.

Although the hypothesis of IT people being different from non-IT people has its grounds, Ferratt and Short (1986) question it in their study of motivators of productive work behavior and argue that such differences do not exist. Their research investigates both the personal traits and environmental characteristics (how management affects what different employee groups do) as plausible causes for motivational differences. The motivators of productive work behavior are extended beyond social and achievement needs to include also items such as guidance, esteem, and power. The results show that the motivational patterns of IT and non IT people in the same occupational group, for example clerical and operations employees, are similar. In questioning the probability that the environmental characteristics make IT and non-IT people behave differently, Ferratt and Short (1986) consider such items as variety, autonomy, identity, and significance. The results show that there is no difference between the working environment of IT and non-IT personnel and thereupon reject the hypothesis that environmental characteristics could be a plausible explanation for the different motivational patterns of IT and non-IT people, if any.

The authors further examine how IT and non-IT people are managed by measuring three sets of managerial activities: (1) enriching the job; (2) attending to interpersonal relations, involving the employee, and reinforcing work behavior; and (3) attending to production and targeting work behavior. Their findings support that IT and non-IT people at the same occupational level are not and should not be managed differently.

One valid criticism of this conclusion, however, is that it is based only on motivators of productive work behavior, rather than on motivation in general. This excludes management responsibility about behaviors other than productive work behavior, such as turnover behavior, which has recently become the hottest issue in the IS field.

Job-hopping has reached epidemic proportions and constantly threatens to reduce productivity, having in mind the learning curve for new employees. (For example, in a field such as data processing it is estimated to take 18 months for an employee to

become maximally productive)". Management tries to cope with this problem by studying the two variables that consistently appear to be the determinants of employee turnover: job satisfaction and organizational commitment.

In his study on the impact of role variables on IT personnel work attitudes and intentions"', Barohdi (1985) states that boundary spanning, role ambiguity, and role conflict are important reasons for commitment, job satisfaction and turnover. His theory leads us again to the findings of Cougar (1988) about the five job core variables. However, the perspective here is a bit different as Barohdi tries to identify how these variables can negatively influence job satisfaction and lead to increased turnover.

Boundary spanning refers to the individual's crossing of intradepartamental and interorganizational boundaries in order to perform his/her duties. Role conflict occurs when a person receives conflicting job performance information or is expected to work too much. Role ambiguity refers to the lack of enough information as to what is expected from a certain employee. Both role conflict and role ambiguity are positively related to boundary spanning and to increased turnover.

This relationship can be explained by the nature of the IT job. The IT department in almost every organization is a self-contained unit with well-defined boundaries and responsibilities. The process of information gathering for different transactions and departments makes the IT personnel constantly cross many boundaries, both departmental and organizational. In addition, the need to balance the complex and versatile desires of the end-users, when designing and working with the system, may result in role conflict and role ambiguity. This will negatively impact job satisfaction and commitment and ultimately lead to increased turnover. Having in mind that IT is a constantly changing field, management recognizes that it will certainly be impossible to eliminate role ambiguity. Role conflict may also be unavoidable, as the IT personnel is there to serve the multiple users in an organization. So, an IT manager who wants to build a satisfied and committed staff and desires to control turnover should try to reduce as much as possible role conflict and ambiguity for his/her employees. He/she should also try to combine this effort with some of the traditional motivational techniques that have historically proved to be effective in this field, such as:

1. Money in the Form of:

Salary increases. Salary is an important incentive and most of the IT managers still believe that the annual salary increases/reviews are the main motivational factor for their staff. They think that money increases job satisfaction and reduces turnover in the IT departments.

Obviously, money is still an important component of any motivational effort in the IT field and people expect to be paid for their contribution in achieving company goals.

One view of salaries is embodied in the expectancy theory, stating that people expect certain outcomes of their deeds and will work to achieve the desired outcomes. This associates pay with motives such as security, status, esteem, and recognition. A second view of salaries can be found in the equity theory. Here, the issue is to maximize the rate of pay and at the same time to achieve a fair rate of return for the contribution to the company. This evaluation reflects a comparison between an employee's input and money received in relation to other individuals engaged in similar work. The perception of pay relates directly to the degree of satisfaction a person receives from the completion of an assigned task.

However, many studies of money as an effective motivator demonstrate that, in the short run, it does provide satisfaction, but in the long run, people tend to seek higher goals to meet their complex innate needs. Along the same line, McClelland, in his research on achievement motivation, concluded that people with a low desire for achievement seek monetary rewards, whereas people with high achievement desires use monetary rewards as a maintenance factor. Having in mind the characteristic features of the majority of the IT professionals, this conclusion implies that money as a motivational tool should be used with caution and in a way that meets their needs. For example, salary increases must be given quickly, so that people know what exactly they are for and feel rewarded for their effort on a timely basis.

In addition to the salaries offered, companies use the following monetary incentives:

High bonuses and profit sharing tied both to personal and corporate performance, as well as to the performance of the IT unit. Profit sharing is believed to be the best program to foster loyalty and motivation, because it makes people feel like part of the business. It also makes everyone eligible - from the IT gurus, constantly assigned to new and interesting projects, to the support and operations staff.

Stock options. There is a mad rush for stock options in the majority of IT firms and especially in the start-ups. Still many managers think that companies cannot just give people stocks and expect to motivate them. There needs to be a lot of communication and information as to what options are and how employees' work can affect the stock price.

Recently there have been many IT firms, which while trying to provide a competitive system of monetary incentives to better manage and retain their IT staff, have sometimes overlooked the financial and managerial limitations of their own enterprise. It seems as though you have to create an opportunity for your own people to share in the financial successes. But the question that remains is how to accomplish that without putting the company at risk. The IT companies implementing monetary reward systems should always remember that there are three major characteristics of a sound compensation program:

- *It should be competitive.* Salary levels and benefits must be high enough to attract competent people, because the ability to acquire experienced IT staff is critical to the organization.
- *It should be rational.* Individual employee salaries must be in proportion to the importance of the job and must be comparable to the salaries received for similar jobs. Consideration should also be given to the level of performance and the length of service.
- *It should be performance based. To* be effective, a compensation program must induce and reward improved performance. Preferably, salary increases should recognize an employee's recent contribution to the company, as automatic pay raises have little motivational value.

2. Training

One of the most effective ways to attract and motivate the IT staff is constant training. Furthermore, IT employees report that training increases their job satisfaction. Companies are willing to create either individual training and development programs including just-in-time, on-the-job techniques, or to provide full funding for employees seeking certification or enrolment in different work-related courses. Many of the IT professionals value highly the fact that employers are helping them enhance their skills and are willing to create a constant learning environment.

3. Dual Career Paths

Somewhat paradoxically, it is suggested that to motivate and retain the IT professionals organizations must provide them with both technical and business career opportunities. Offering alternative career paths is becoming increasingly important as many organizations flatten the IT ranks. There is less demand for IT managers, but growing demand for highly skilled IT specialists, and the movement

of IT people to the business units can be considered as a transfer of IT knowledge from the IT department to the broader organization. The practice of setting up dual career paths in IT departments, one for technicians and one for managers, really pays off as it gives IT workers two ways to rise in the organization. The first is the traditional way by taking on management responsibility, and the second is by moving up the technical ladder. In most cases, employees are allowed, even encouraged, to move between tracks. When in doubt about the benefits of the dual career alternative, companies should have in mind that :

- Although IT staff is expected to develop within the IT department, the need for new challenges and change can lure people into the business areas.

- A lot of studies suggest that IT people are oriented toward their professional roles. But there are two career options that professionals may pursue: specializing in what they are doing or seeking to develop within a specific firm. Research on job transfers suggests that fear about loss of specific skills might be an inhibitor, but individual's allegiance to a company may outweigh concerns about leaving the IT profession.
- Many studies suggest that in order for rotation to be successful, an individual should feel certain dissatisfaction about his/her present situation. This is not always the case, as people tend to view their careers as a collection of experiences and knowledge.
- Many of the IT people in a company view their careers in terms of opportunities for new knowledge. They want to be qualified to operate effectively in a number of different environments. So the move to another field is not necessarily planned carefully. It is rather a natural progression to a new sphere.

However, the dual career opportunity will require some adjustment or transition period, and supervisors should consider two possible problems here. First, there will be an initial loss of productivity and a lot of additional knowledge will have to be gained for effective participation in the management process. Second, the support of mentors and colleagues will be very important during the first couple of months. Yet, enabling the move of IT people into line positions seems a worthwhile endeavor, as this can strengthen the alignment between IT and business goals and improve the implementation success of IT projects.

4. Management Coaching

Management coaching in the IT field is very personalized at lower levels of the organization, as companies realize that all critically important employees need the same level of enabling advice and counsel. A survey of 8,500 IT workers at 680 companies shows that 42% of the people have been coached at some point during their careers.

A model of effective coaching in the IT field was developed by Allmerica Financial Corp. The company created IT Centers of Excellence (COE) that consisted of a talented pool of coaches and each COE offered help in selling, training, professional development, and a lot of networking opportunities. The goals of a coach are to assign skilled project management staff to the business units and to provide ongoing professional development to the employees. Working with coaches increases job satisfaction considerably. Coaches help people identify the new skills they need and further improve their existing skills. In addition, they often evaluate the workload for a particular employee and ensure the provision of ongoing, challenging assignments without overcommitment.

5. Joint Goal-Setting

Joint goal-setting is often used in the IT field as a motivational tool. This is a management method and process where goals are established for the whole IS department (or the whole company) and then for each work unit within the department and even for each employee, as long as he/she works in an area where the establishment of objectives is practical. Setting goals usually means to have the people influenced by them meet and reach an agreement as to: (1) the major objectives for a given time period; (2) determining how and when the objectives will be accomplished; and (3) criteria for determining if the objectives have been met. The whole process is based on the assumption that people with such achievement and growth needs will make a contribution to the organization if given the opportunity to do so. Furthermore, employees are willing to commit themselves to goals in which they participate and will perform better if they can measure their progress. This motivational tool does a lot in:

- Improving task identity. People have a clearer understanding of what is expected of them and how what they are doing affects the organization.

- Improving feedback.
- Increasing autonomy. Those, who participate in the program, have a greater influence in running their company and shaping their own careers.

6. Effective and Timely Feedback

Management should focus on providing quick and adequate information about the actual results of employees' efforts because timely feedback on goal accomplishment is a very important job core variable. Unfortunately, research has shown that supervisory feedback in the IT field needs improvement. If we assume that IT professionals have low need for social interaction and tend to carry that trait with them up the career ladder, it is almost certain that communication skills will not come naturally for them. For this reason, and in order to cope with the problem, a lot of companies are implementing more formalized feedback procedures. For example, feedback is given often and in small quantities, instead of being limited to a comprehensive once-a-year performance review. In addition, companies do their best to help people who do not inherently possess communication skills acquire them through formal training. Gaining knowledge about behavioral concepts and communication techniques can offset the negative effect of low social needs and improve to a great extent the feedback procedure.

7. Possibility for Creativity and Interesting Work

As mentioned earlier, IT personnel are more interested in the work itself than in anything else. Giving people challenging tasks is really one of the keys to effective motivation because they like the intellectual simulation and believe that improving their skills increases their market value. IT professionals really appreciate the freedom to work on projects that interest them, instead of being obliged to do specific job for which they were hired.

8. Flexible Time and Casual Environment

Many IT departments today use flexible work hours, so that the employees can pick their own start and end times. They also offer various other privileges like telecommuting, working part-time, etc. In addition, a lot of companies recognize that the nice and spacious office, as well as casual dress, are very important conditions for achieving the creative and relaxed atmosphere IT people consider so important for motivation and success.

These are the basic motivational tools used by almost every organization with an IT staff. However, their effectiveness is influenced to a great extent by the company's size. Research suggests that big entities usually have greater difficulty in motivating their people than smaller ones. When an organization has a department of about a hundred IT professionals, management must work harder to keep their jobs' motivating potential at a high level. This, on the one hand, is due to the fact that project teams are larger, and on the other hand, there are more levels of management through which to communicate. For example, providing task identity to the personnel that are "in the middle", i.e. several levels away from top management and not in direct contact with the end user, is much more difficult than doing the same for professionals that have direct interaction with both parties. The same refers to task significance and feedback. In addition big companies often have more procedures, which reduce the feeling of autonomy for most of the employees. These policies and procedures sometimes even seem counterproductive to most of the IT professionals because they add additional hurdles to their work. People find it particularly frustrating to have to wait for authorization when they could fix a problem themselves.

Although we tried to build-up the "typical" IT profile with its characteristic features and needs, the assumption that all (or almost all) IT professionals are driven by the same set of values and goals is unfounded. An analysis of the career orientation of the IT employees showed that people can be very different even within an "ordinary" and "typical" IT department. For example, there are professionals with managerial or technical orientation. While

managerially oriented employees tend to occupy positions such as systems analyst, project leader, and computer manager, technically oriented employees are often found in systems programming, applications programming and software engineering. Moreover, almost half of the employees in an IT department cannot be described as managerially oriented or as technically oriented. These people are likely to occupy either system programming or project leader positions.

Matching career orientation and job setting is very important because managerially oriented employees in technical jobs or technically oriented employees on managerial positions will probably display a number of negative work attitudes including low job satisfaction and lack of commitment to the organization. Managerially oriented employees will react positively to managerial jobs, because they see opportunity for advancement, money and top management respect. Similarly, technically oriented employees see opportunities for reputation enhancement, peer respect, and challenging tasks in technical jobs. So, the match between internal career needs and external career options can produce positive outcomes and increase to a great extent the inner motivation of the IT personnel.

Organizations need to recognize the diversity of their IT staff when deciding what motivational tool or combination of tools would be most effective. Flexible management style is very important, because all employees need to be treated fairly, but it is a big mistake to treat them all the same. Flexible management style also means that supervisors must vary their approach not only to the individual, but also to the situation. For this reason, IT employees should discuss their values and needs with management on a regular basis, so that relevant and timely feedback is provided, challenging and interesting assignments are given, and the appropriate motivational tools are implemented. Managers should provide support when it is necessary, because one of the key characteristics of the achievement-oriented person is the willingness to use help when it is needed. This makes the manager/supervisor a true "coach" of his/her team and transforms the manager subordinate relationship into a helpful and supporting bond.

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SELECTED INDICATORS

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
Crude Oil Production (000 bbl)[a]	15,444	15,662	17,950	-14.0	-1.4
Natural Gas Production (000 mcf)[a]	391,087	436,473	408,376	-4.2	-10.4
Rig Count	149	133	90	65.6	12.0
Intial Unemployment Claims	19,043	25,870	20,234	-5.9	-26.4
Permit-Authorized Construction					
Residential Single Family					
Dollar Value ($000)	336,210	252,073	275,696	21.9	33.4
Number of Units	2,544	2,011	2,193	16.0	26.5
Residential-Multi Family					
Dollar Value ($000)	4,343	35,787	35,451	-87.7	-87.9
Number of Units	92	700	768	-88.0	-86.9
Total Construction ($000)	336,302	252,773	276,464	21.6	33.0
Employment					
Total Labor Force (000)[b]	1,655.5	1,636.1	1,647.8	0.5	1.2
Total Employment (000)	1,606.5	1,584.8	1,596.6	0.6	1.4
Unemployment Rate (%)	3.0	3.2	3.1	—	—
Wage and Salary Employment (000)	1,505.6	1,482.3	1,490.5	1.0	1.6
Manufacturing	178,600	180,233	181,767	-1.7	-0.9
Mining	30,333	29,700	28,700	5.7	2.1
Government	291,233	291,233	291,400	-0.1	0.0
Contract Construction	63,567	60,567	60,500	5.1	5.0
Services	438,633	425,133	426,833	2.8	3.2
Retail Trade	273,367	268,400	273,000	0.1	1.9
Average Weekly Hours (Per Worker)					
Manufacturing	38.4	39.1	41.3	-7.0	-1.8
Average Weekly Earnings ($ Per Worker)					
Manufacturing	493.80	500.71	540.71	-8.7	-1.4
Contract Construction	638.21	586.39	573.53	11.3	8.8

Note: Includes revisions in some previous months.

[a]Figures are for 4th and 3rd Qtr 2000 Crude oil includes condensate. Natural gas includes casinghead gas.

[b]Labor Force refer to place of residence, non-agricultural wage and salary employment refers to place of work.

NA = Not Available

OKLAHOMA GENERAL BUSINESS INDEX

	Preliminary Forecast June '01	June '00	June '99	Percentage Change '01/'00 June	'01/'99 June
State	132.0	133.8	130.4	-1.2	1.4
Oklahoma City MSA	133.5	133.6	129.6	-0.1	3.0
Tulsa MSA	136.9	138.2	134.5	-0.9	1.8

RETAIL TRADE IN METRO AREAS AND STATE ($000 Seasonally Adjusted)

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
OKLAHOMA CITY MSA					
Durable Goods	581,766,717	584,835,306	529,104,736	10.0	-0.5
Lumber, Building Materials and Hardware	190,744,107	177,279,347	166,280,653	14.7	7.6
Auto Accessories and Repair	97,681,878	97,280,929	86,136,624	13.4	0.4
Furniture	75,174,392	77,237,114	73,794,077	1.9	-2.7
Computer, Electronics and Music Stores	82,269,960	100,275,244	71,589,102	14.9	-18.0
Miscellaneous Durables	121,783,324	117,376,160	116,136,229	4.9	3.8
Used Merchandise	14,113,057	15,386,511	15,168,051	-7.0	-8.3
Nondurable Goods	1,611,170,646	1,623,546,117	1,474,989,078	9.2	-0.8
General Merchandise	541,654,597	566,134,063	452,480,189	19.7	-4.3
Food Stores	305,693,947	317,113,931	317,906,961	-3.8	-3.6
Apparel	107,193,980	106,794,985	94,279,189	13.7	0.4
Eating and Drinking Places	296,884,684	304,361,583	287,517,391	3.3	-2.5
Drug Stores	38,920,024	40,181,541	39,619,199	-1.8	-3.1
Liquor Stores	18,980,626	18,737,898	18,002,440	5.4	1.3
Miscellaneous Nondurables	84,728,071	86,552,458	75,990,387	11.5	-2.1
Gasoline	217,114,718	183,669,658	189,193,322	14.8	18.2
Total Retail Trade	2,192,937,364	2,208,381,423	2,004,093,814	9.4	-0.7
TULSA MSA					
Durable Goods	455,001,542	458,675,311	442,369,141	2.9	-0.8
Lumber, Building Materials and Hardware	134,813,454	129,000,986	124,489,416	8.3	4.5
Auto Accessories and Repair	64,426,569	62,545,266	60,787,675	6.0	3.0
Furniture	51,837,466	54,273,818	51,983,822	-0.3	-4.5
Computer, Electronics and Music Stores	96,062,349	108,616,757	102,907,622	-6.7	-11.6
Miscellaneous Durables	96,109,184	91,677,878	90,329,359	6.4	4.8
Used Merchandise	11,752,520	12,560,607	11,871,246	-1.0	-6.4
Nondurable Goods	1,235,998,785	1,209,221,244	1,115,599,855	10.8	2.2
General Merchandise	401,795,413	402,966,951	343,120,065	17.1	-0.3
Food Stores	270,839,503	271,286,493	252,077,080	7.4	-0.2
Apparel	77,378,570	77,612,326	75,637,310	2.3	-0.3
Eating and Drinking Places	215,904,655	212,572,591	201,369,909	7.2	1.6
Drug Stores	31,870,752	32,140,688	28,651,030	11.2	-0.8
Liquor Stores	16,067,354	16,003,080	15,040,568	6.8	0.4
Miscellaneous Nondurables	61,628,128	60,857,640	59,831,952	3.0	1.3
Gasoline	160,514,410	135,781,474	139,871,941	14.8	18.2
Total Retail Trade	1,691,000,327	1,667,896,556	1,557,968,996	8.5	1.4
ENID MSA					
Durable Goods	25,952,512	25,323,694	22,139,189	17.2	2.5
Lumber, Building Materials and Hardware	9,480,997	8,680,103	7,692,900	23.2	9.2
Auto Accessories and Repair	5,902,545	5,881,865	4,936,974	19.6	0.4
Furniture	1,837,202	1,918,843	1,870,192	-1.8	-4.3
Computer, Electronics and Music Stores	2,571,245	2,979,166	1,768,521	45.4	-13.7
Miscellaneous Durables	5,567,747	5,160,822	5,281,704	5.4	7.9
Used Merchandise	592,776	702,896	588,899	0.7	-15.7

RETAIL TRADE IN METRO AREAS AND STATE ($000 Seasonally Adjusted)

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
ENID MSA (continued)					
Nondurable Goods	95,339,861	89,171,829	80,313,101	18.7	6.9
General Merchandise	32,015,512	31,323,174	26,407,553	21.2	2.2
Food Stores	24,255,449	23,096,652	20,909,701	16.0	5.0
Apparel	4,371,770	4,159,659	3,944,197	10.8	5.1
Eating and Drinking Places	14,529,687	13,781,522	11,539,912	25.9	5.4
Drug Stores	3,051,020	2,767,322	2,244,525	35.9	10.3
Liquor Stores	768,706	730,832	713,152	7.8	5.2
Miscellaneous Nondurables	4,446,784	3,244,839	4,183,610	6.3	37.0
Gasoline	11,900,934	10,067,829	10,370,451	14.8	18.2
Total Retail Trade	121,292,373	114,495,523	102,452,290	18.4	5.9
LAWTON MSA					
Durable Goods	29,806,532	29,271,587	29,672,765	0.5	1.8
Lumber, Building Materials and Hardware	8,195,198	7,359,621	8,229,427	-0.4	11.4
Auto Accessories and Repair	6,716,502	6,205,638	5,677,126	18.3	8.2
Furniture	3,203,166	3,644,514	3,335,188	-4.0	-12.1
Computer, Electronics and Music Stores	3,388,460	3,705,521	3,508,153	-3.4	-8.6
Miscellaneous Durables	7,375,027	7,488,255	8,077,207	-8.7	-1.5
Used Merchandise	928,179	868,038	845,664	9.8	6.9
Nondurable Goods	133,818,664	133,017,317	124,894,119	7.1	0.6
General Merchandise	61,648,542	63,584,565	55,626,747	10.8	-3.0
Food Stores	19,802,254	19,706,578	20,220,562	-2.1	0.5
Apparel	6,397,540	5,651,916	5,517,344	16.0	13.2
Eating and Drinking Places	22,844,244	23,013,816	22,743,423	0.4	-0.7
Drug Stores	1,970,970	2,050,097	1,842,614	7.0	-3.9
Liquor Stores	742,413	754,851	694,195	6.9	-1.6
Miscellaneous Nondurables	5,287,525	5,459,155	5,069,189	4.3	-3.1
Gasoline	15,125,175	12,796,339	13,180,045	14.8	18.2
Total Retail Trade	163,625,196	162,288,903	154,566,884	5.9	0.8
OKLAHOMA					
Durable Goods	1,534,911,200	1,551,378,136	1,491,278,104	2.9	-1.1
Lumber, Building Materials and Hardware	516,468,446	483,936,491	481,184,716	7.3	6.7
Auto Accessories and Repair	259,537,846	260,157,194	265,559,225	-2.3	-0.2
Furniture	169,395,378	174,728,900	171,974,451	-1.5	-3.1
Computer, Electronics and Music Stores	248,307,806	290,759,748	241,602,696	2.8	-14.6
Miscellaneous Durables	304,253,637	301,377,860	290,707,511	4.7	1.0
Used Merchandise	36,948,087	40,417,944	40,249,506	-8.2	-8.6
Nondurable Goods	4,864,703,550	4,807,836,612	4,446,700,257	9.4	1.2
General Merchandise	1,637,135,600	1,660,723,264	1,396,737,827	17.2	-1.4
Food Stores	1,092,657,473	1,091,122,553	1,084,252,158	0.8	0.1
Apparel	252,311,869	260,207,116	237,508,631	6.2	-3.0
Eating and Drinking Places	813,409,593	804,830,156	758,086,814	7.3	1.1
Drug Stores	100,953,605	103,221,590	91,839,324	9.9	-2.2
Liquor Stores	49,736,143	48,779,828	47,527,076	4.6	2.0
Miscellaneous Nondurables	243,791,660	241,116,157	217,709,328	12.0	1.1
Gasoline	674,707,605	597,835,948	613,039,100	10.1	12.9
Total Retail Trade	6,399,614,750	6,359,214,748	5,937,978,361	7.8	0.6

RETAIL TRADE IN SELECTED CITIES

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
Ada	55,210,274	55,856,819	51,359,632	7.5	-1.2
Altus	43,352,667	43,692,008	41,636,283	4.1	-0.8
Alva	14,315,462	13,915,731	13,111,604	9.2	2.9
Anadarko	15,087,213	15,016,942	13,461,744	12.1	0.5
Ardmore	81,359,341	79,400,062	71,574,144	13.7	2.5
Bartlesville	96,554,336	95,647,031	91,067,335	6.0	0.9
Blackwell	10,745,872	10,652,898	10,243,351	4.9	0.9
Broken Arrow	124,367,946	120,930,463	111,070,288	12.0	2.8
Chickasha	36,675,431	36,010,416	34,124,678	7.5	1.8
Clinton	20,890,311	20,242,090	21,902,410	-4.6	3.2
Cushing	15,203,602	14,791,196	13,551,564	12.2	2.8
Del City	29,159,937	28,635,364	28,369,181	2.8	1.8
Duncan	51,288,691	50,069,080	42,710,740	20.1	2.4
Durant	35,713,914	35,978,696	34,103,783	4.7	-0.7
Edmond	158,131,184	155,270,046	143,988,179	9.8	1.8
El Reno	29,958,140	28,900,767	26,113,102	14.7	3.7
Elk City	34,417,551	34,304,322	29,380,521	17.1	0.3
Enid	104,098,207	104,907,051	96,158,168	8.3	-0.8
Guthrie	20,165,450	19,870,031	19,017,015	6.0	1.5
Guymon	24,402,684	23,937,632	21,912,533	11.4	1.9
Henryetta	12,668,097	12,351,265	11,510,754	10.1	2.6
Hobart	6,197,072	6,073,221	5,833,232	6.2	2.0
Holdenville	8,233,809	8,219,304	7,977,231	3.2	0.2
Hugo	18,182,884	16,170,677	13,375,363	35.9	12.4
Idabel	16,800,207	16,761,533	15,238,088	10.3	0.2
Lawton	177,122,690	174,282,641	161,482,993	9.7	1.6
McAlester	65,403,637	63,296,167	58,316,740	12.2	3.3
Miami	31,138,460	29,768,893	26,956,618	15.5	4.6
Midwest City	140,582,905	140,997,770	129,514,545	8.5	-0.3
Moore	68,282,966	66,680,695	60,597,541	12.7	2.4
Muskogee	112,869,971	111,688,509	104,620,148	7.9	1.1
Norman	228,913,002	224,804,987	203,194,369	12.7	1.8
Oklahoma City	1,252,795,103	1,217,667,378	1,102,028,422	13.7	2.9
Okmulgee	34,209,011	33,087,117	30,680,994	11.5	3.4
Pauls Valley	21,351,771	20,506,440	19,360,660	10.3	4.1
Pawhuska	5,021,522	5,030,469	4,566,783	10.0	-0.2
Ponca City	70,375,006	68,652,089	62,429,291	12.7	2.5
Poteau	32,272,184	31,607,048	29,320,268	10.1	2.1
Sand Springs	48,381,056	48,051,857	43,031,540	12.4	0.7
Sapulpa	51,511,950	51,159,414	43,882,245	17.4	0.7
Seminole	19,985,459	19,543,712	18,192,669	9.9	2.3
Shawnee	87,917,767	87,486,128	81,808,114	7.5	0.5
Stillwater	104,687,337	103,817,479	97,840,969	7.0	0.8
Tahlequah	48,796,438	48,719,039	43,979,747	11.0	0.2
Watonga	5,059,047	4,984,653	5,448,603	-7.1	1.5
Weatherford	26,087,418	25,594,209	23,888,261	9.2	1.9
Wewoka	3,064,073	2,970,968	2,975,622	3.0	3.1
Woodward	45,407,323	44,240,822	38,145,710	19.0	2.6
Total Selected Cities	4,945,117,645	4,856,693,583	4,500,393,138	9.9	1.8

ENID AND LAWTON MSAs, MUSKOGEE MA

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
ENID MSA					
Employment (Number)					
Labor Force[a]	25,820	25,320	26,579	-2.9	2.0
Total Employment	25,187	24,677	25,778	-2.3	2.1
Unemployment Rate (%)	2.5	2.5	3.0	—	—
Wage and Salary Employment	23,767	23,233	24,067	-1.2	2.3
Wholesale and Retail Trade	6,167	6,033	6,167	0.0	2.2
Manufacturing	2,500	2,500	2,500	0.0	0.0
Permit-Authorized Construction					
Residential-Single Family					
Dollar Value ($000)	2,609	1,615	2,261	15.4	61.5
Number of Units	15	8	10	50.0	87.5
Residential-Multi Family					
Dollar Value ($000)	0	0	132	—	—
Number of Units	0	0	4	—	—
Total Construction ($000)	2,609	1,615	2,393	9.0	61.5
LAWTON MSA					
Employment (Number)					
Labor Force[a]	40,567	39,647	41,135	-1.4	2.3
Total Employment	39,487	38,473	39,776	-0.7	2.6
Unemployment Rate (%)	2.7	2.9	3.3	—	—
Wage and Salary Employment	39,233	38,300	39,233	0.0	2.4
Wholesale and Retail Trade	8,967	8,733	8,867	1.1	2.7
Manufacturing	3,767	3,800	3,733	0.9	-0.9
Permit-Authorized Construction					
Residential-Single Family					
Dollar Value ($000)	4,275	3,775	3,959	8.0	13.2
Number of Units	36	32	33	9.1	12.5
Residential-Multi Family					
Dollar Value ($000)	0	0	0	—	—
Number of Units	0	0	0	—	—
Total Construction ($000)	4,275	3,775	3,959	8.0	13.2
MUSKOGEE MA					
Employment (Number)					
Labor Force[a]	31,200	30,577	31,279	-0.3	2.0
Total Employment	30,167	29,460	30,015	0.5	2.4
Unemployment Rate (%)	3.3	3.7	4.0	—	—
Water Transportation					
Port of Muskogee					
Tons In	148,733	64,951	104,039	43.0	129.0
Tons Out	13,319	14,930	44,834	-70.3	-10.8

Note: Includes revisions.
[a]Civilian Labor Force.
E = Exceeds 600 percent.

TULSA MSA

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
TULSA MSA					
Employment (Number)					
Labor Force[a]	419,740	414,093	420,064	-0.1	1.4
Total Employment	408,643	403,400	407,572	0.3	1.3
Unemployment Rate (%)	2.6	2.5	2.9	—	—
Wage and Salary Employment	408,633	402,467	403,867	1.2	1.5
Manufacturing	55,433	55,300	55,000	0.8	0.2
Mining	7,200	7,100	7,167	0.5	1.4
Government	46,233	46,000	46,433	-0.4	0.5
Wholesale and Retail Trade	93,033	91,667	93,633	-0.6	1.5
Average Weekly Earnings					
Manufacturing ($ Per Worker)	624.57	630.30	599.12	4.2	-0.9
Air Transportation					
Passengers Enplaning (Number)	458,762	386,967	464,114	-1.2	18.6
Passengers Deplaning (Number)	457,332	388,595	463,481	-1.3	17.7
Freight (Tons)	11,915	13,384	13,232	-10.0	-11.0
Water Transportation					
Tulsa Port of Catoosa					
Tons In	291,808	245,480	254,571	14.6	18.9
Tons Out	231,350	178,408	279,041	-17.1	29.7
Permit-Authorized Construction					
Residential-Single Family					
Dollar Value ($000)	138,657	99,469	119,809	15.7	39.4
Number of Units	1,045	787	934	11.9	32.8
Residential-Multi Family					
Dollar Value ($000)	0	5,533	642	-100.0	-100.0
Number of Units	0	111	18	-100.0	-100.0
Total Construction	138,657	105,002	120,451	15.1	32.1

Note: Includes revisions.
[a]Civilian Labor Force.

OKLAHOMA CITY MSA

Category	2nd Qtr '01	1st Qtr '01	2nd Qtr '00	Percentage Change '01/'00 2nd Qtr	Percentage Change 2nd Qtr '01 1st Qtr '01
OKLAHOMA CITY MSA					
Employment (Number)					
Labor Force[a]	555,733	552,277	550,029	1.0	0.6
Total Employment	539,780	535,160	536,252	0.7	0.9
Unemployment Rate (%)	2.9	3.1	2.5	—	—
Wage and Salary Employment	549,000	543,067	540,500	1.6	1.1
Manufacturing	53,033	53,900	54,100	-2.0	-1.6
Mining	7,067	6,967	6,333	11.6	1.4
Government	110,533	109,633	107,167	3.1	0.8
Wholesale and Retail Trade	126,900	125,433	125,900	0.8	1.2
Average Weekly Earnings					
Manufacturing ($ Per Worker)	510.95	512.93	624.51	-18.2	-0.4
Air Transportation					
Passengers Enplaning (Number)	469,793	393,554	465,665	0.9	19.4
Passengers Deplaning (Number)	458,096	399,683	459,996	-0.4	14.6
Freight Enplaned (Tons)	4,994	5,206	5,776	-13.5	-4.1
Freight Deplaned (Tons)	5,862	6,209	6,734	-12.9	-5.6
Permit-Authorized Construction					
Residential-Single Family					
Dollar Value ($000)	168,892	129,882	132,388	27.6	30.0
Number of Units	1,262	1,024	1,046	20.7	23.2
Residential-Multi Family					
Dollar Value ($000)	761	26,464	29,424	-97.4	-97.1
Number of Units	12	504	561	-97.9	-97.6
Total Construction ($000)	169,653	156,346	161,812	4.8	8.5

Note: Includes revisions.
[a]Civilian Labor Force.